

Japan's Experiences in Public Health and Medical Systems

Towards Improving Public Health and
Medical Systems in Developing Countries



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This report is based on the discussion and findings of the study committee on “Japan’s Policies and Approaches in the Fields of Public Health and Medical Systems” organized by the Japan International Cooperation Agency (JICA). The views expressed in this report are those of the members of the study committee and do not necessarily reflect those of JICA.

The names of government departments and agencies, and sometimes the organizations themselves, administering public health and medical services have changed over the years. The names employed at the time will be used in this report.

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10-5, Ichigaya Honmura-cho, Shinjuku-ku, Tokyo 162-8433
Fax: +81 3 3269 2185
E-mail: iictae@jica.go.jp

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Foreword

The field of public health and medical services is an important one, closely involved in people's lives, and essential for societies and countries to grow and develop. There are more than a few countries that are still struggling with issues such as high infant and maternal mortality rates, the spread of HIV/AIDS and other infectious diseases, and the lack of a safe water supply. Improvements to public health and medical services are therefore emerging as a major priority in many developing countries. Internationally, aid programs in the field of public health and medical services have been given a high priority, with donor countries and organizations and NGOs involved in partnerships to achieve Millennium Development Goals (MDGs), including projects aiming to reduce infant mortality rates, improve maternal health, halt the spread of diseases such as HIV/AIDS and malaria, and provide sustainable access to safe water.

Japan has also announced, through the "Medium Term Policy on Official Development Assistance (ODA)" promulgated in 1999, and the 2003 revision of the "Official Development Assistance Charter (ODA Charter)," that assistance in the field of public health and medical services will be given priority as part of the fight against poverty. A number of public health initiatives have also been announced, including the "Global Issues Initiative on Population and AIDS" (GII), the "Global Parasitic Disease Control Initiative" (usually known as the "Hashimoto Initiative") and the "Okinawa Infectious Disease Initiative" (IDI), where Japan's experience will be utilized in improving the public health and medical systems in developing countries.

In this report, we reviewed Japan's experiences in the field of public health and medical services, highlighting those aspects of Japan's experience that may be of use to developing countries in the challenges they face in improving their own public health and medical systems. We also examined and considered how the Japanese experience in this field can be applied to developing countries, where the situation is often markedly different from Japan's, and where particular points are essential to remember in applying this experience.

In the past, Japan has confronted the issues of high infant mortality rate, and a high prevalence of infectious disease such as tuberculosis. In a relatively short period, however, Japan has succeeded in reducing the infant mortality rate to the lowest in the world, as well as all but eliminating tuberculosis, that was once called a "national scourge," and Japan is now the nation with the greatest longevity in the world.

Factors in this remarkable development have included national supervision of the network of public health and medical systems, with a national approach to the main diseases prevalent in each historical era; formulation and enactment of policy based on a firm grasp of the actual situation, achieved through surveys of public health and medical services and rigorous statistical collation with the assistance of scientific academia; collaboration between government, doctors and midwives in private practice, non-government organizations, community organizations, and the media in overcoming various challenges; outreach services provided by public health nurses finely attuned to the needs of their local community; and the achievement of universal health insurance coverage during a period of financial restraint.

From experiences such as these, there are likely to be a number of areas worthy of consideration by developing countries in reforming their own public health and medical systems. There are also several

regrettable features in the Japanese experience, such as the delayed response to environmental pollution leading to escalation of the extent of the damage, and the strain on the health insurance system associated with the aging society. It is to be hoped that the lessons learned in these areas will also be useful to developing countries in formulating their response when they face similar problems in the future.

The actual initiatives undertaken in Japan were put into action on the basis of the historical background, the social structures, and the available resources, so if these factors are different then it naturally follows that the response to the problem will be different. It should be noted that adjustments and alterations will be required to suit the local needs and circumstances if Japan's experience is to be utilized in developing countries, it is, therefore, not the report's intention that the Japan's experience can simply be transferred into the host country as it is.

For this report, we set up a study committee composed of opinion leaders in their various fields, JICA associates and consultants to conduct the required surveys and put together this report. We would like to express our warmest thanks to all the members for all the efforts they put into the research survey.

It is our fervent wish that this report will be of assistance to our friends in developing countries in improving their public health and medical systems.

March 2004
Morimasa KANAMARU
Director General, Institute for International Cooperation
Japan International Cooperation Agency

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Terms and Abbreviations

Specialist terms	Outline explanation
Activities of Community-based Health Organizations	Community groups, particularly in rural villages, were active from the end of the Second World War until the late 1950's, in areas such as the elimination of insect pests and improved sanitation. At first these activities were known by various names such as "Community Organization Activities," but in 1953 the Ministry of Health and Welfare (MHW) grouped them all under the term "Activities of Community-based Health Organizations." These activities originated in rural villages, but later spread to the larger cities. A particularly famous example, that became a nationwide program, was the "No Mosquitoes and Flies Program."
Average Life Expectancy	The average age to which someone at a certain age can expect to live, according to a life expectancy chart, is called the average life expectancy for that age. The average life expectancy at the time of birth is called the "Life Expectancy at Birth."
Capacity Building	"Capacity" refers to the ability of an individual, organization, system or society to solve problems, or set goals and achieve them, either individually or collectively (problem solving ability). "Capacity building" is the process of improving or increasing that ability. This term is also used in contrast to "institution building," the establishment of organizations and systems, to denote the enhancement of the ability to conduct and manage said organizations and systems. In recent years, the term "capacity development" is more often used, emphasizing the importance of making improvements to capacities from within, rather than an external agency imposing changes from the outside.
DALYs (Disability-Adjusted Life Years)	This term is used by groups such as the World Bank and the World Health Organization (WHO) as a comprehensive public health index including death and disability. Calculated as $DALYs = YLL$ (Years of Life Lost due to premature mortality) + YLD (Years Lived with Disability), it is an expression of time lost due to disease or disability. Using DALYs, the economic burden can be calculated for each country and for each disease/condition. This allows economic analyses in the field of public health and medical systems, such as how much the economic burden can be relieved by preventive or therapeutic interventions in a particular disease/condition.
Declaration of Alma Ata	In September 1978, an "International Conference on Primary Health Care" was held under the aegis of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) in Alma Ata (formerly USSR, now Kazakhstan), with representatives from 143 countries and 67 organizations in attendance. The Alma Ata Declaration was endorsed on the final day of this conference. The Declaration, containing 10 recommendations, points out the inequalities in health outcomes between developed and developing countries, as well as political and economic inequalities within countries, and states that all people have a right and an obligation to participate in the planning and conduct of primary health care (PHC)*. The PHC Approach was put forward as the key to achieving the goal of "Health for all by the year 2000," as agreed on by the governments of the individual countries as well as international organizations. (Nakamura 1998)
DOTS (Directly Observed Treatment, Short-course)	A comprehensive primary health care approach to the diagnosis and treatment of tuberculosis (TB). It involves a short course of antibiotic therapy under direct supervision (for at least the first 2 months, medical staff or a responsible person directly observes the person taking their medication every day). DOTS is the prototype for an overall strategy to control tuberculosis being developed by the WHO. [see Box 5-3 for details]
Empowerment	This means to gain power in the social, economic or legal sense. This term is often used for women and social classes that have historically had their cultural and religious rights suppressed. In the field of development cooperation, empowerment of these groups is thought to lead to their personal development as well as development of the society as a whole.

Terms marked with * in the text are included in this glossary.

Specialist terms	Outline explanation
Environmental Sanitation	The World Health Organization (WHO) defines sanitation as “controlling all factors in the physical lifestyle environment of people that have an adverse effect, or have the potential to adversely affect, human growth, health or survival.” Typical sanitation activities include disease prevention measures to prevent the spread of infectious diseases*; waste treatment measures for urine and sewage; vermin control measures to exterminate infectious disease* carrying pests such as mosquitoes, flies, fleas, lice, cockroaches and mice; and introduction of water supplies and sewage systems. In recent years, the field of sanitation has broadened and diversified markedly to include food sanitation measures, pollution control, environmental control systems for buildings, elimination of dangerous household products, disposition of industrial waste, and more recently areas of public interest such as environmental hormones and “sick house syndrome.” (Toho Environmental Disease Research Institute)
Epidemiology	The study of the distribution of diseases, and their causes, in human populations. It has a basic science aspect, that examines disease distributions (temporal, geographical, special, gender, lifestyle, etc.) to determine causes and contributing factors, and an applied science aspect, that then seeks to prevent disease on the basis of these findings.
Expanded Program on Immunization (EPI)	This program was initiated by the World Health Organization (WHO) in 1974, and is currently run as a joint project by the WHO and the United Nations Children’s Fund (UNICEF). The aim of the EPI is to extend immunization programs to all the children of the world for the prevention of diphtheria, pertussis, tetanus, measles, rubella, polio*, and tuberculosis.
Essential Drug Concept	The “Essential Drug Concept” is defined by the World Health Organization (WHO) as “Essential Drugs are those that satisfy the health care needs of the majority of the population, and they should be available at all times.” This concept is derived from the “Possible new drug policies” outlined in the report to the World Health Assembly (WHA) in 1975 by the Director-General of the WHO.
Family Planning	A movement proclaiming the need for “birth control” (translated into Japanese as “restriction or regulation of the numbers of children”) arose in Japan around 1920, and this movement emerged even stronger after the war under the name of “family planning.” In the field of national development, “family planning” is often taken to be part of a strategy to control population growth, but originally it referred to a couple using contraception and spacing between pregnancies to plan the size and makeup of their family, also raising the age at the time of the first pregnancy and allowing treatment for infertility if required. Following the 1994 International Conference on Population and Development, family planning is considered to be one of the Reproductive Rights*.
GII (Global Issues Initiative on Population and AIDS)	Following on the 1993 US-Japan Common Agenda, in the following year the Japanese government announced this initiative, whereby it would increase its commitment to international aid in the areas of population and HIV/AIDS, contributing US\$3 trillion over the following 7 year period. This was a historic initiative for Japan, in that it was the first time it announced to the world an Official Development Assistance (ODA) action plan in a specific area.
Health Insurance	Under the Japanese health insurance system, the national government guarantees medical services for all under a social security system. It broadly comprises two main pillars, employees’ insurance that covers company employees (occupational insurance), and National Health Insurance, that covers the self-employed and others. There is also a separate health insurance system for the elderly aged over 70, that is supported by the health insurance system for the present working generation.

Specialist terms	Outline explanation
Hospitals and Clinics	In Japan, medical service providers are regulated in accordance with the Medical Service Law*. Medical service providers mainly comprise hospitals, clinics and birthing centers. The term “hospital” refers to an institution with provision for at least 20 inpatients, whereas a “clinic” is an institution with no more than 20 inpatient beds. “Clinics” are further divided into “general medical clinics” and “dental clinics.”
IDI (Okinawa Infectious Diseases Initiative)	Japanese public health cooperation strategy to follow GII*. This initiative, announced at the completion of the G8 Summit in Kyushu and Okinawa, involved a contribution of US\$3 trillion over the following 5 year period. Targets were announced for HIV/AIDS, tuberculosis (TB) and malaria, to be reached by 2010 through partnerships between the G8 members, the developing countries themselves, non-government organizations (NGOs), private corporations, and members of local communities.
Infant Mortality Rate (IMR)	This is the number of deaths of children (infants) aged under 1 per 1,000 live births (sometimes per 1,000 births) for a specified year. The Infant Mortality Rate is a good indicator of the public health situation in a region or country.
Infectious Disease	An infection occurs when a pathogen such as a virus or bacterium enters the body and multiplies, and the ensuing disease is called an infectious disease. Apart from contagious infectious disease (usually refers to contagious disease), that are passed from person to person, there are also non-contagious infectious disease, that are carried by animals or insects, or enter the body through a wound. When the onset of the disease occurs soon after exposure, it is usually referred to as an acute infectious disease, and when a long period elapses between exposure and onset or progression of the disease, it is referred to as a chronic infectious disease. Previously unknown disease that have recently caused problems, such as HIV/AIDS and ebola hemorrhagic fever, are called new infectious disease, whereas previously known disease that had at one stage reduced markedly but are now again causing problems, such as tuberculosis (TB) and malaria, are called recrudescence infectious disease. The WHO has sounded a note of warning that the threat of infectious disease on a global scale has not disappeared.
Immunizations	The administration of vaccines, orally or by percutaneous injection, with the aim of preventing infectious diseases*. By this process, immunity is conferred to that infectious disease*. A vaccine is a viral or bacterial preparation that has been attenuated, inactivated or detoxified.
Livelihood Extension Worker	During the Occupation following the Second World War, the General Headquarters (GHQ) of the Allied Powers conducted a program of “Democratization of Rural Villages.” As part of this program, the Ministry of Agriculture, Forestry and Fisheries began a “Rural Livelihood Improvement Program” with the aim of improving the lifestyle of the residents of rural villages. Qualified teachers and nutritionists were recruited, given training in participatory social development methods and technical training appropriate to rural villages, and then posted to prefectural Agricultural Extension Centers. The goal of Livelihood Extension Workers was to create “farmers who can think independently,” so they concentrated on facilitation, rather than instruction, promoted problem analysis and problem-solving through community participation, and provided multi-sector development assistance. Livelihood Extension Workers were also affectionately known as “Seikai-san,” an abbreviation of the rather long title in Japanese.
Maternal and Child Health	The field of public health concerned with the maintenance and promotion of the health of mothers and children.
Maternal and Child Health (MCH) Handbook	In Japan, with the aim of achieving consistent health outcomes throughout pregnancy and infancy, all pregnant women are registered, and are issued a “Maternal and Child Health Handbook.” Details of the pregnancy, birth and child development are recorded in the MCH Handbook, which also provides useful information for pregnant women and new mothers, of an administrative nature as well as public health and child raising tips. This system commenced in 1942 with the “Pregnant Mothers’ Handbook,” and has undergone many revisions since.

Specialist terms	Outline explanation
Maternal Mortality Rate (MMR)	This is the number of deaths related to pregnancy and childbirth per 10,000 live births (sometimes per 10,000 births) for a specified year. “Deaths related to pregnancy and childbirth” refers to deaths due to pregnancy, childbirth and other puerperal causes. Differences between countries in Maternal Mortality Rates are greater than those in Infant Mortality Rates.
Medical Service Law	This law regulates the activities of medical service providers. It sets out the standards for medical clinics, birthing centers, hospitals, and public medical institutions, regulating their facilities, staffing, management, distribution and medical corporations. The National Medical Service Law promulgated in 1942 was replaced by the present Medical Service Law in 1948.
Medical System (“Isei” comprehensive medical code)	The “Isei” (Comprehensive Medical Code), setting the principles and operating criteria for the medical system, were promulgated in 1874 by the Meiji government in introducing Western medicine to Japan. This code contained all the fundamentals of health policy, including central and regional administrative bodies, the medical education system, standards for the establishment and running of medical institutions, rules for employment of medical and allied personnel, and pharmaceutical administration.
Medical Tiers (Primary, Secondary and Tertiary)	The 1985 revisions to the Medical Service Law directed each prefecture to establish a three tier system of regional medical services, in order to provide efficient and appropriate medical care with finite resources, and to improve collaboration between medical, community health, and social welfare service providers. The unit of the primary tier of medical care is the municipality, providing medical, community health, and social welfare services closely connected with the daily lives of the residents of the community (regulated by each prefecture, as the Medical Service Law contains no specific regulations). The secondary tier of medical care is mainly concerned with inpatient care, with provision for availability of beds, etc. The tertiary tier of medical care provides for the medical needs of the entire prefecture that cannot readily be met by the primary and secondary tiers. In the field of emergency medicine, “initial, secondary and tertiary emergency medical services” are all contained within the secondary tier of medical care.
Ministry of Health and Welfare (MHW)	A central government agency, established in 1938, responsible for improving social welfare, social security, and public health*. Merged with the Ministry for Labour in January 2001, becoming the Ministry for Health, Labour and Welfare (MHLW).
Millennium Development Goals (MDGs)	These are based on an amalgamation of the September 2000 United Nations (UN) Millennium Declaration and Global Development Goals announced at major international conferences during the 1990's. The development goals for the international community to be realized by 2015 are: ① Eradicate extreme poverty and hunger; ② Achieve universal primary education; ③ Promote gender equality and empower women; ④ Reduce child mortality; ⑤ Improve maternal health; ⑥ Combat HIV/AIDS, malaria, and other diseases; ⑦ Ensure environmental sustainability; and ⑧ Develop a global partnership for development.
Morbidity/Incidence/Prevalence	The morbidity (rate) of a disease is the proportion of the population who have a disease expressed as a percentage of the total population. The incidence (rate) of a disease is the number of new cases during a set time period expressed as a percentage of the population at risk during the period. The prevalence (rate) is the number of people in a population who have a disease at a given time (irrespective of the time of onset) expressed as a percentage of the total population.

Specialist terms	Outline explanation
National Census	The Japanese “population census.” The most fundamental statistical national survey, conducted with the aim of elucidating the numbers and household arrangements of the population within Japan. The census is the basis from which a variety of statistical surveys extract their samples. Conducted by the Statistics Bureau of the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) every 5 years, this is a total population census that includes all households, including foreign nationals. Not just a population census, it also gathers information concerning gender, age, relationships, and nationalities, as well as social and economic circumstances, daily movements, and social movements. Formal national censuses using modern methods commenced in Japan in 1920.
Nurse	A profession that assists in the treatment of patients and attends to their needs. In general, the qualification is gained after graduating from senior high school, by completing a 3 to 4 year course at a nursing school or training college, and passing a national examination. An assistant nursing qualification is also available to junior high school graduates after a further 2 years of study and passing a national examination. Nursing was traditionally a female-only profession in Japan, but from 1989 males and females were offered the same educational opportunities, and male nurses have undergone training. From March 2003 all nurses are referred to by a title that is gender-neutral.
Nurse Midwife (“Midwife” in this report)	In Japan, “sanba” traditional birth attendants have assisted at births from ancient times. The Meiji Government promulgated the “Sanba Kisoku (Midwifery Regulations)” in 1899, setting national standards for the age, range of permitted activities, and accreditation of midwives. Until the end of the Second World War, these midwives were important professionals in the community, with a good grasp of the health of mothers and children, as well as their economic circumstances. In 1947, a new “Law concerning Public Health Nurses, Nurse Midwives and Nurses” was promulgated, renaming the profession as “josanpu” (nurse midwives). From March 2003, the gender neutral term “josanshi” (mid-person) is now used. The question of actually admitting male midwives (mid-persons) is a controversial one, however.
Occupational Health	Health and safety in the work environment. The area of public health principally concerned with prevention of disease and injuries in employees caused by working under adverse conditions. In many developing countries, there is little awareness of human rights, there is a lack of protective legislation in such areas as handling of dangerous materials, lighting, and ventilation, so dangerous working environments are common.
Outreach	Outreach means to reach out your hand. This term is used for service providers and aid workers, from government and non-government organizations, going out to potential users of their services, endeavoring to attract their interest, and provide services appropriate to their needs.
Polio	Also known as infantile paralysis and acute anterior poliomyelitis. An acute viral infectious disease that causes paralysis, as the second eradicable disease after smallpox, polio is presently the subject of a global eradication campaign led by the World Health Organization (WHO) and Rotary International. (Arita 2001)
Population Vital Statistics	Examination of variables that alter a population between two timepoints, such as births, deaths, marriages, divorces and stillbirths, the study of population vital statistics gives understanding of changes in the population and its demographics. Statistics were commenced in Japan in 1899. The broad definition of population vital statistics also includes population movements, that are divided into international population movements and intranational population movements.

Specialist terms	Outline explanation
Preventive Medicine	Preventive medicine is a discipline placed at the opposite end of the spectrum to clinical medicine. The specialties that make up this area of medicine include public health statistics, epidemiology*, health education theory, and public health and medical administration theory. From them are developed an extremely wide range of programs applicable to each stage of life, such as health management policies (maternal and child health*, school health*), and lifestyle and environmental health programs at the community level.
Primary Care	Also referred to as “primary medical care.” This term refers to individual preventive and therapeutic medical care provided by a general practitioner or family doctor.
Primary Health Care (PHC)	The principle espoused in the 1978 Alma Ata Declaration*. It is derived from the realization that the introduction of a disease-based approach to medical care and a Western-style public health system to developing countries has only brought benefits to one segment of the population, with no improvement in the health status of the majority. Primary health care is characterized by integration of public health and basic medical services at the community level, aiming to provide public health and medical services to people from all classes and regions, with the willing participation of the local population.
Public Health	Organized health-related activities undertaken by private and public institutions, as well as community and workplace organizations, for the maintenance and promotion of the health of the populace. This field includes maternal and child health*, infectious disease prevention, programs for adult (lifestyle-related) diseases, mental health, food sanitation, residential sanitation, provision of water supplies and sewage systems, urine and waste disposal, pollution control measures, and industrial health and safety.
Public Health Center	A public health center is a public health institution, established by the prefecture or designated municipality, to maintain and promote the health of the residents of the local community. The public health center system began with the 1937 Health Center Law, with the first public health centers established as part of the “Rich Nation, Strong Army” concept, principally for the control of chronic infectious diseases such as tuberculosis, and for maternal and child health programs. The Health Center Law underwent a complete overhaul in 1947, in which the position of the public health center was firmly established as the first line of public health services protecting the health of community residents. As well as providing personal health services (excluding medical services) such as immunizations, maternal and child monitoring, tuberculosis monitoring, and health education, and hygiene-orientated services related to food hygiene and sanitation, public health centers also conducted awareness campaigns related to maintenance of statistics and community health matters. The Health Center Law was revised and renamed the Community Health Law in 1994 (coming into full effect in 1997), with personal services now under the aegis of the local municipality in order to provide health services located closer to the community, and giving public health centers more broadly based responsibilities, highly specialized and technical.
Public Health Nurses (PHNs)	Usually called “public health nurses” or “community health nurses” in English, but their training system and social status varies from country to country. In Japan, public health nursing began as part of a social program around 1920, conducting home visits to offer lifestyle guidance and disease prevention activities for pregnant women and nursing mothers and their children. The system was later reinforced, with PHNs employed by public health centers*, health insurance associations, and local governments, providing directly to the community important public health services such as health checks, immunizations*, maternal and child health guidance, supervision of tuberculosis treatment, and health education. In the present day, however, rather than a public health service provider, PHNs are probably regarded more as administrators. To become a PHN, a further 1~2 years of specialized study is required after the nursing degree. As with nurses and nursing assistants, from March 2003 PHNs are referred to by a gender neutral term in Japanese.

Specialist terms	Outline explanation
Reproductive Health (RH)	In all areas related to the reproductive system, its function and processes, this refers to not just the absence of disease or weakness, but also a state of total physical, mental and social well-being. Reproductive health was defined as a new concept by the 1994 International Conference on Population and Development in Cairo.
Reproductive Rights (RR)	This concept states that all couples or individuals possess the right to decide how many children they will have and when, and the right to access information, knowledge and techniques to exercise their reproductive choices. As with reproductive health*, this concept was first defined at the International Conference on Population and Development in Cairo.
Referral System	This is the comprehensive system of referral and transport that connects primary medical care with secondary and tertiary medical institutions. Patients are initially seen by their local primary medical care provider. If the primary care physician decides that they require a higher level of medical care, then they are referred and transported to a secondary or tertiary medical institution after the appropriate treatment has been given, at the appropriate time.
School Health	An overall title for all activities conducted at schools for the maintenance and improvement of the students' and teachers' health, and the promotion of a healthy lifestyle. These activities are broadly divided into "health education," that imparts knowledge of health issues and fosters the ability to maintain and improve one's own health, and "health care," that primarily consists of health checks.
Social Marketing	This method is basically the same as those of the private sector but it aims at expanding public interests and leading people to voluntarily take proper action. Developing countries are faced with various problems, such as low purchasing power, limited advertisement and undeveloped distribution systems. To cover these shortcomings, this method is being applied to activities such as diffusing condoms and mosquito nets, mainly in the field of public health, including measures for HIV/AIDS prevention and against malaria.
Total Fertility Rate (TFR)	This is the average number of children that one woman (or group of women) would bear over the course of her lifetime, if current age-specific fertility rates remained constant during her childbearing years (15-49 years of age).
Under 5 Mortality Rate (U5MR)	This is the ratio of the number of deaths of children aged under 5 per 1,000 live births for a specified year. Compared to the Infant Mortality Rate*, the Under 5 Mortality Rate better reflects improvements in nutrition and vaccination programs, so it is used as an indicator of the overall level of social welfare. In general, the term "child mortality rate" refers to this U5MR.
Women in Development (WID)	This is a development assistance concept, that women must be provided opportunities, as the harbingers of development, to participate fully in all stages of development.

Note

	Explanation
Japanese Era Names	The practice of era naming was originally taken over from Imperial China and adopted in Japan in 645. During Japan's Feudal Period (1603~1868), Era names were changed not only on the death of an emperor, but also to mark natural disasters or major social upheavals. This entire period is commonly known as the Edo Era. The Meiji Era began with the Meiji Restoration in 1868 and ended with the death of Emperor Meiji in 1912. The last year of one era is also the first year of the succeeding era. Following the Meiji Era, subsequent eras are: The Taisho Era (1912~1926), the Showa (1926~1989) and the Heisei Era (1989~present day). Although nowadays, the Western calendar is commonly used for everyday purposes, era names are still in frequent use.

Overview of the Research Survey

1. Objectives and Background

The field of public health and medical services is an important one, closely related to people's lives, and essential for societies and countries to grow and develop. Improvements to public health and medical services are therefore emerging as a major priority in many developing countries. Internationally, aid programs in the field of public health and medical services have been given a high priority, with donor countries and organizations and NGOs involved in aid projects such as those outlined in the Millennium Development Goals (MDGs), including projects aiming to reduce infant mortality rates, improve the health of expectant mothers, halt the spread of diseases such as HIV/AIDS and malaria, and provide sustainable access to safe water.

Japan has also announced, through the "Medium Term Policy on Official Development Assistance (ODA)" promulgated in 1999, and the 2003 revision of the "Official Development Assistance Charter (ODA Charter)," that assistance in the field of public health and medical services will be given priority as part of the fight against poverty. A number of public health initiatives have also been announced, including the "Global Issues Initiative on Population and AIDS" (GII), the "Global Parasitic Disease Control Initiative" (usually known as the "Hashimoto Initiative") and the "Okinawa Infectious Disease Initiative" (IDI), where Japan's experience will be utilized in improving the public health and medical systems in developing countries. What has hitherto been lacking, however, is a systematic analysis of the Japanese experience to see how it can be used effectively by developing countries.

The Japan's experience included national supervision of the network of public health and medical systems, with a national approach to the main diseases prevalent in each historical era; formulation and enactment of policy based on a firm grasp of the actual situation, achieved through surveys of public health and medical services and rigorous statistical collation with the assistance of scientific academia; collaboration between government, doctors and midwives in private practice, non-government organizations, community organizations, and the media in overcoming various challenges; outreach services provided by public health nurses finely attuned to the needs of their local community, leading to improved public health outcomes; and the achievement of universal health insurance coverage during a period of financial restraint.

There are also several regrettable features in the Japan's experience, such as the delayed response to environmental pollution leading to escalation of the size of the problem, and the strain on the health insurance system due to overly optimistic long-term forecasts of the effects of the aging society. From experiences such as these, there are likely to be a number of areas worthy of consideration by developing countries in reforming their own public health and medical systems.

In this survey, we revisited Japan's experiences in the field of public health and medical services, highlighting those aspects of the Japan's experience that may be of use to developing countries in the challenges they face in improving their own public health and medical systems. We also investigated and discussed how the Japan's experience in this field can be applied to developing countries, where the situation is often markedly different from Japan's, and where particular caution is required in applying this experience.

It should be noted that adjustments and alterations will be required to suit the local needs and circumstances if Japan's experience is to be applied to challenges faced by developing countries and the Japanese solution cannot simply be transplanted into the host country as it is.

2. Structure of this Report

This report comprises three major parts. The introductory part, entitled "The Issues of Public Health and Medical Systems in Developing Countries," presents an overview of challenges in the field of public health and medical services presently faced by developing countries, and of assistance initiatives undertaken by Japan and the international community in improving public health and medical systems in developing countries.

Part I, entitled "Overview of Public Health and the Medical System in Japan," presents an overview of changes in public health and the medical system in Japan, and the present system of provision of public health and medical services, with analyses of past and present initiatives in this field.

Part II, entitled "Japan's Experiences in Public Health and Medical Services," based on the previous parts, we analyzed the Japanese experience with challenges presently faced by developing countries in the field of public health and medical services. With the emphasis on the policies formulated and approaches taken, and the results of the various initiatives, we identified suggestions and potential problems for consideration in making improvements in public health and medical systems in developing countries.

In Part II, we began with an examination of the health problems identified in the Millennium Development Goals, in chapters 3. "Maternal and Child Health," 4. "Family Planning," and 5. "Infectious Diseases Control (Tuberculosis, Parasitic Diseases, Immunization Programs)." We then covered Japanese initiatives in health problems that arose after success was achieved with programs in the fields of maternal and child health and infectious diseases, in chapters 6. "Environmental Pollution Control Measures" and 7. "Occupational Health."

The next chapters in this section, "Community-based Health Systems"(chapter 8) and "School Health Programs"(chapter 9), examine public health structures and systems with the focus on effective initiatives in maternal and child health and infectious disease control undertaken by communities and schools. We also included a chapter on "Emergency Medical Care"(chapter 10), originally established as a response to the rapid increase in road traffic accidents. A chapter was also devoted to "National Health Insurance"(chapter 11), that has greatly improved access to public health and medical services in Japan. A supplementary chapter "Environmental Sanitation" gives a simplified introduction to improvements made in sanitation, that can be called the basis of all measures to combat health problems in the fields of maternal and child health and infectious diseases.

In Part III, "Towards Application of Japan's Experience in Public Health and Medical Systems to Developing Countries," we conduct a cross-sectional analysis of Japan's initiatives in public health and medical systems, summarizing the findings in Part I and II. With the characteristics of the Japanese

people in mind, we also attempted to systematically analyze Japan's initiatives to see how they can be used effectively by developing countries in improving their own public health and medical systems.

3. List of the Committee Members

Chairperson

Yasuhide NAKAMURA Professor, Osaka University, Graduate School of Human Sciences

Committee Members

Hiroyuki NAKANO Chief, Division of Pediatrics, Department of International Cooperation, St. Mary's Hospital

Aiko IJIMA Director, Human Resource Development Division, Japanese Organization for International Cooperation in Family Planning

Seiki TATENO Director, 1st Expert Service Division, Bureau of International Cooperation, International Medical Center of Japan

Sumiko OGAWA Assistant Professor, Department of Preventive Medicine, Faculty of Medicine, University of the Ryukyus

Megumi INAOKA Visiting Researcher, Department of International Health, Graduate School of Medicine, the University of Tokyo

Advisor

Kiyomichi FUJISAKI Managing Director, Medical Cooperation Department, JICA (untill August, 2003)

Chief of Taskforce

Hiroshi TAKAHASHI Senior Advisor, Institute for International Cooperation, JICA

Taskforce

Katsuichiro SAKAI Deputy Resident Representative, JICA Zambia Office

Naoko UEDA Deputy Director, Second Research and Development Division, Institute for International Cooperation, JICA (also a member of the secretariat)

Hisakazu HIRAOKA JICA staff (seconded to WHO Western Pacific Regional Office)

Kaori NAKATANI Associate Expert, First Overseas Division, Secretariat of Japan Overseas Cooperation Volunteers (JOCV), JICA

Kanako ADACHI Researcher, Second Research and Development Division, Institute for International Cooperation, JICA (also a member of the secretariat)

Makiko KOMASAWA Consultant, Earth & Human Corporation

Secretariat

Ryozo HANYA	Director, Second Research and Development Division, Institute for International Cooperation, JICA (until January 2004)
Kazuaki SATO	Deputy Director, Second Research and Development Division, Institute for International Cooperation, JICA (until November 2003)
Yasuko DOGUCHI	Researcher, Japan International Cooperation Center (JICE), Second Research and Development Division, Institute for International Cooperation, JICA

4. Method of Preparation of this Report and List of Authors

Based on manuscripts prepared by the authors given below, the material in this report was revised by the authors and the office staff following discussions by the Research Group.

The various manuscripts were then edited by the office staff and our consultants to produce this report.

<i><Chapter title></i>	<i><Names of authors></i>
Overview of the Research Survey	Kanako ADACHI
Introduction: The Issues of Public Health and Medical Systems in Developing Countries	Kanako ADACHI
Part I. Overview of Public Health and Medical System in Japan	
Chapter 1. The History of Public Health and Medical Services	Makiko KOMASAWA
Chapter 2. Present State of Public Health and Medical Services	Makiko KOMASAWA
Part II. Japan's Experiences in Public Health and Medical Services	
Chapter 3. Maternal and Child Health	Yasuhide NAKAMURA
Chapter 4. Family Planning	Aiko IIJIMA, Naoko UEDA
Chapter 5. Infectious Diseases (Control Tuberculosis, Parasitic Disease, Immunization Programs)	Hisakazu HIRAOKA, Makiko KOMASAWA Seiki TATENO Hisakazu HIRAOKA, Makiko KOMASAWA
Chapter 6. Environmental Pollution Control Measures	Megumi INAOKA
Chapter 7. Occupational Health	Hiroshi TAKAHASHI
Chapter 8. Community-based Health Systems	Sumiko OGAWA, Naoko UEDA, Makiko KOMASAWA
Chapter 9. School Health Programs	Seiki TATENO
Chapter 10. Emergency Medical Care	Hiroyuki NAKANO
Chapter 11. National Health Insurance	Katsuichiro SAKAI, Yasuhide NAKAMURA
Supplementary Chapter. Environmental Sanitation	Makiko KOMASAWA

Part III. Towards Application of Japan's Experience
in Public Health and Medical Systems to Developing Countries

Chapter 12. Towards Application of Japan's Experience in Public
Health and Medical Systems to Developing Countries

Makiko KOMASAWA

Appendix: Statistics Related to Public Health and Medical Systems

Makiko KOMASAWA

Editorial Staff

Makiko KOMASAWA, Kanako ADACHI, Yasuko DOGUCHI

Introduction The Issues of Public Health and Medical Systems in Developing Countries

When we consider what aspects of Japan's experience may be useful in cooperation with developing countries, it is necessary to understand what kinds of issues these developing countries are presently facing, and how the international community is responding. In this chapter, we will therefore present the challenges in the field of public health and medical services now being faced by developing countries, and give an overview of international assistance initiatives, and Japanese assistance initiatives, in these areas.

1. The Issues of Public Health and Medical Services Faced by Developing Countries

The field of public health and medical services is an important one, closely related to people's lives, and essential for societies and countries to grow and develop. Improvements to public health and medical services are therefore emerging as a major priority in many developing countries, where many people continue to suffer due to high infant and child mortality and maternal mortality rates, the spread of infectious diseases, lack of access to a safe water supply, and inadequate sanitation facilities. Industrial accidents, occupational diseases, and

pollution-related health damage are all more common in developing countries than in developed countries. Japan has faced all of these issues, and developed programs to overcome them.

(1) High Infant and Child Mortality and Maternal Mortality Rates

High rates of infant and maternal mortality are a major problem in developing countries, with reduction in these rates a national priority in many countries. Initiatives in the individual countries, and international cooperation, have brought down infant and maternal mortality rates somewhat, but every year some 11 million children are dying from preventable diseases¹. Many of these deaths can be prevented by better nutrition and sanitation, improving the health of pregnant women and new mothers, and providing the required education.

Every year more than 500,000 pregnant women and new mothers die worldwide. The situation is particularly bad in sub-Saharan Africa, with 1 in 13 women dying during pregnancy or of puerperal causes². Maternal mortality rates can be reduced through adequate health care in the perinatal period, and the assistance of properly trained public health nurses at the birth. In

Table Int-1 Infant Mortality Rate (2000)

	Infant mortality rate (per 1,000 live births)	Under 5 mortality rate (per 1,000 live births)
Average of developing countries	61	89
Average of OECD countries	6	14

Source: UNDP (2002)

¹ UNDP (2002) p. 31

² *ibid.* p. 32

southern Asia and sub-Saharan Africa, however, public health nurses are present at fewer than 40% of births³.

(2) The Spread of Infectious Diseases, Including HIV/AIDS and Tuberculosis

Infectious diseases such as HIV/AIDS are a major challenge to be overcome by developing countries. Some 90% of cases of infection with HIV are in developing countries, and the prevalence rates of other infectious diseases are high in developing countries as well. By the end of the year 2000, approximately 22 million people had died of AIDS, and in sub-Saharan Africa in particular, AIDS is the number one cause of death⁴. Every year there are 300 million acute cases of malaria worldwide, whereas 60 million people have been infected with tuberculosis (TB). These infectious diseases are treatable with modern medical techniques, but every year two million people die from TB, and one million from malaria, without receiving any medical treatment⁵. Those countries suffered reduced work capacity due to deaths and disabilities caused by infectious diseases. The situation makes poverty worse as a result of the costs of treatments, thereby placing a further strain on the already impoverished national budget.

(3) Lack of Access to Safe Water Supply, and Inadequate Sanitation Facilities

The lack of safe water supply and adequate sanitation facilities causes diarrheal diseases and malaria. Every year, approximately four billion people develop diarrheal diseases, with 2.2 million deaths. Most of these are children, and diarrhea is the cause of death in 15% of child deaths in developing countries. In the year 2000, the number of people without access to a safe water supply rose to 1.1 billion⁶.

(4) Occupational Health, Environmental Pollution

Every year, 250 million people suffer industrial accidents, 160 million suffer occupational diseases, and 1.2 million die from these causes. Victims of industrial accidents and occupational diseases are more common in developing countries, where the working environment is often poor, and social security cover is limited as well. The impact of injury or illness tends therefore to be greater in developing countries⁷.

Pollution related health damage is becoming more common in rapidly industrializing developing countries. In the rush towards industrialization, pollution control measures are often deferred until later. That causes problems such as air pollution, declining water quality, and acid rain. These are an adverse influence on the health of the population in these developing countries.

(5) Strained National Finances, Vulnerable Administrative Abilities, Inadequate Systems

As outlined above, developing countries are facing a number of issues in the field of public health and medical services, but unfortunately the budget available to deal with these issues is extremely limited. In high-income countries, per capita health expenditure is \$2,733, whereas in low income countries it is a mere \$21⁸. Not only is budget limited, but there is also often a lack of the administrative ability to survey the situation, and formulate and conduct an appropriate plan based on the survey results.

Another major problem is the lack of an adequate social security system. The poor classes in developing countries are often unable to afford medical expenses related to illness and accidents, and therefore do not receive the appropriate

³ UNDP (2002) p. 33

⁴ *ibid.* p. 33

⁵ *ibid.* p. 34, WHO (2002)

⁶ UNDP (2002) p. 36

⁷ Somavia (2000)

⁸ World Bank (2002)

treatment. If they do manage to raise the money needed for treatment, it may be at the expense of their savings. A health insurance system that ensures even the most poor and needy have access to appropriate medical treatment is of course desirable, but there are problems with a lack of sufficient funding. Even if a health insurance system is in place, it may not be properly run. It is often the case that the poorest people, who need health insurance coverage most, are denied by the health insurance system.

(6) Lack of Personnel, Institutions and Medications in Public Health and Medical Systems

Shortages of personnel, institutions and medications also cause major problems. In high-income countries, there are 2.9 doctors per 1,000 population, whereas in low income countries it is

roughly one-sixth of that, or 0.5 per 1,000 population. There are 7.2 hospital beds per 1,000 population in high income countries, compared to only 1.3 in developing countries⁹. Shortages of medications are another serious problem. The major cause of death in developing countries is infectious diseases, but even if an effective medication is available for a particular disease, it is likely that it will be too expensive for the poorer classes to afford.

2. Assistance Initiatives in the Field of Public Health and Medical Services

(1) International Assistance Initiatives

The challenges in the field of public health and medical services outlined above have long been recognized. So as an important part of international

Box Int-1 Objectives Related to Public Health and Medical Services in the New DAC Strategy : Shaping the 21st Century

- Reduce infant mortality rates and under-five mortality rates in developing countries to 1/3 of 1990 levels by the year 2015.
- Reduce maternal mortality rates to 1/4 of 1990 levels by the year 2015.
- Expand reproductive health services by the year 2015.

Source: OECD/DAC (1996)

Box Int-2 Objectives Related to Public Health and Medical Services in Millennium Development Goals

- Reduce under-five mortality rates by 2/3.
- Reduce maternal mortality rates by 3/4.
- Stop the spread of diseases such as HIV/AIDS and malaria, and start to reduce their prevalence, by the year 2015.
- Reduce by half the proportion of people without sustainable access to safe drinking water by the year 2015.

Source: UNDP (2000) "Millennium Development Goals"

⁹ World Bank (2002)

assistance programs, a number of global initiatives have been conducted in this area, continuing to the present day. In particular, since 1990, global targets have been set, and concerned parties from government and community organizations in both developed and developing countries, have been working together to improve public health and medical systems on a global scale, especially in developing countries. Emphasis has been placed on the concepts of ownership and partnership as an important approach to achieving these targets. Given below are the international initiatives in the field of public health and medical services, concentrating on the global targets that have been set in this area, and the relevant approaches that should be emphasized.

There has been cooperation in the field of public health and medical services since international assistance programs first began. Since the Basic Human Needs (BHN) Approach was proposed in the 1970's, the emphasis has been on assistance in the areas of nutrition, safe water supply, and public health and medical services. At its World Health Assembly in 1977, the WHO (World Health Organization) adopted a resolution calling for "Health for all by the year 2000," and the Alma Ata Declaration in 1978 enunciated the Primary Health Care (PHC) Approach as a strategy to achieve this goal. The PHC Approach, with an integrated approach combining equality, participation of the local community, an emphasis on prevention, and the use of appropriate technology, is still considered important for improving the health and relieving poverty for all the peoples of the world.

During the 1990's, a number of global goals and new concepts were espoused in the field of public health and medical services. As an example, at the World Summit for Children in 1990, the goals set were the elimination of neonatal tetanus by the year 1995, global eradication of polio by the year 2000, and the reduction by 90 per cent of measles cases and measles deaths by 95 per cent by the year 1995. The concepts of reproductive health and

reproductive rights were defined by the International Conference on Population and Development (ICPD) held in Cairo in 1994, since which time rights related to sex and reproduction have been considered fundamental human rights. At the Fourth World Conference on Women held in Beijing in 1995, improvements in the physical and emotional health of women, including reproductive health, were affirmed as basic to the empowerment of women and raising their status. The Beijing Declaration adopted at that conference recommended global initiatives to address women's health problems.

The World Summit for Social Development, held in 1995 in Copenhagen, Denmark, was the culmination of all UN (United Nations) conferences related to development held until that time. The Copenhagen Declaration recognized the need for people-centered development, with a balance between social development, economic progress, and environmental conservation. A commitment was also made to provide universal and equal access to education and PHC.

Following the Copenhagen Summit, at the 1996 High-Level Meeting of the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC), a development strategy paper "Shaping the 21st Century: The Contribution of Development Cooperation" (new DAC strategy) was announced. The new DAC strategy set out international goals for development (International Development Goals, IDGs), that included public health and medical services. The achievement of these goals would be to require ownership of the IDGs by the developing countries, and broad partnerships among participating countries and organizations.

At the Millennium Summit of the UN held in September 2000, the international development goals espoused over the preceding decades were consolidated into the Millennium Development Goals (MDGs). Whereas the new DAC strategy was agreed to by donor nations, the MDGs were ratified by 189 nations, comprising both developed and developing countries, and are regarded as the

common development goals of the international community. Working towards achieving the MDGs, greater emphasis has been placed on partnerships with the private sector, and the importance of cooperation between governments and communities.

At the World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa in 2002, a Plan of Implementation based on the MDGs was adopted. Prior to the WSSD, an unofficial preparatory meeting was held in Japan, with the aim of sharing ideas and priorities related to cooperation in the field of public health. At this meeting, the importance of partnerships, as well as independent effort by developing countries, was recognized. It was also considered necessary to strike a balance between reactive measures, responses to problems arising in the public health field, and proactive measures (health education, improving health awareness, provision of safe water supplies, sanitation, and vaccinations). Recent G8 summits have often included pronouncements concerning the importance of initiatives to improve public health and medical systems. Control measures for infectious diseases such as HIV/AIDS have been given particular emphasis.

Not only governments, but also the private sector, NGOs and local communities have also become service providers, with demand extending to a wide range of services. The idea that community residents should no longer be passive service recipients, but should check the quality of services offered, and play a role in determining policy, is becoming widespread.

(2) Japan's Initiatives

Japan has been closely involved in cooperation in the field of public health and medical services for many years. Japan's experience in facing public health challenges through a united approach by government, the people and local communities, has

been useful in cooperation in this field, and Japan has repeatedly announced, domestically and abroad, that it will utilize its experience in cooperation initiatives.

In the Official Development Assistance (ODA) Charter announced in 1992, and revised in 2003, measures against problems on a global scale, such as infectious diseases, and assistance in the field of public health and medical services, were given priority.

In 1993 the "US-Japan Common Agenda for Cooperation in Global Perspective" (US-Japan Common Agenda) was announced. One of the four pillars of the US-Japan Common Agenda was "Promoting health and human development," and two of the 18 initiatives, ranked below the four pillars, were in the public health area, namely "Population and Health" and "New and Recrudescing Infectious Diseases (in particular HIV/AIDS)." In response to the Common Agenda, in 1994 Japan announced the "Global Issues Initiative on Population and AIDS" (GII)¹⁰, with positive initiatives in these two important areas.

At the 1996 G7 Summit held in Lyon, then Prime Minister Hashimoto presented the "Initiative for a Caring World," that proposed that through sharing ideas and experience in social policy with each other, each country could then better solve their own problems.

At the 1998 G8 Summit held in Birmingham, then Prime Minister Hashimoto presented the "Global Parasitic Disease Control Initiative" (Hashimoto Initiative), promoting assistance partnerships (effective promotion of international cooperation) and research in control measures for parasitic diseases. The Hashimoto Initiative called for the establishment of effective projects, with the emphasis on a collaborative approach utilizing the experience of each country in parasitic disease control.

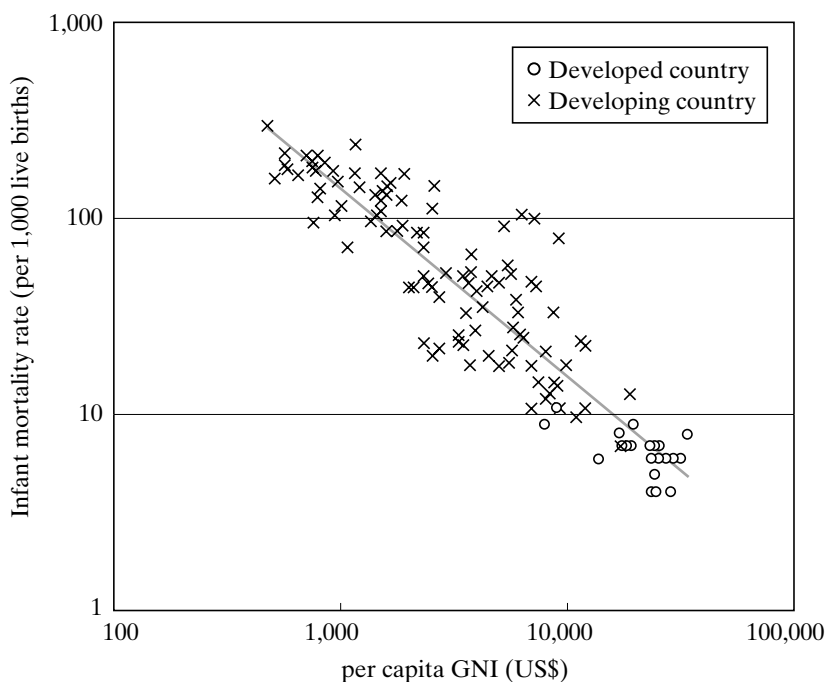
In the "Medium Term Policy on Official

¹⁰ Japan committed a total ODA budget of US\$3 trillion to cooperation with developing countries over the seven year period from 1994 to 2000. Targets were achieved by the end of 1995.

Box Int-3 Infant Mortality and Economic Development

In considering whether Japan's experience in the field of public health and medical services can be of use to developing countries, we can see that almost all developed nations, including the UK and the US, have gone through similar changes, according to the level of economic development at the time, in the challenges faced in this field, and the way they met them, and Japan is no exception¹². The graph below plots the relationship between infant mortality rates, used as an indicator of the status of local health services, and per capita GNI^{*1}, an indicator of national economic strength, in developed countries^{*2} and developing countries. Allowing for differences related to the situation in each country, there is a broad correlation between the level of economic development and the status of public health and medical services, and we can anticipate that in many countries the status of health services will change along with economic development. We can further assume that the changes in public health and medical services experienced by Japan will provide some useful pointers for developing countries to consider.

Relationship between per Capita GNI and Infant Mortality Rates



Sources: Infant mortality rate: UN Population Division "World Population Prospects: The 2002 Revision"
 Per capita Gross National Income (GNI): Compiled by Makiko Komasa, on the basis of 2000 figures in the World Bank "World Development Indicators 2002" (2002)

*1: Derived from GNP using various corrections. For details, refer to World Bank "World Development Indicators 2002."

*2: 27 countries, comprising Canada, the United States, Japan, Singapore, Australia, New Zealand, Israel, the Czech Republic, Poland, Denmark, Finland, Ireland, Norway, Sweden, the United Kingdom, Croatia, Greece, Italy, Portugal, Slovenia, Spain, Austria, Belgium, France, Germany, The Netherlands and Switzerland.

¹² Hashimoto, Masami (1968) *Chiiki Hoken Katsudo - Koshueisei to Gyosei-gaku no Tachiba kara* [Community Health Activities - From the Standpoint of Public Health and Public Administration], Igaku Shoin.

Development Assistance” (Medium Term ODA Policy) promulgated in 1999, priority was given to “assistance in the fight against poverty and in the field of public health and medical services.” This policy states that Japan will provide assistance concentrating on improving public health policy, establishing public health and medical systems, and setting up institutions, utilizing Japan’s experience in these areas, with strong community participation and in collaboration with NGOs.

In the “Okinawa Infectious Disease Initiative” (IDI)¹¹, announced at the G8 Summit in Kyushu and Okinawa, Japan set out its intention to engage in effective programs for control of infectious diseases, utilizing and sharing Japan’s experience and knowledge gained in drastically reducing deaths from TB through a post-war public health program.

At the 2002 WSSD, Prime Minister Koizumi emphasized the importance of sharing Japan’s experience in overcoming environmental pollution with other countries.

Japan also announced sustainable development projects in the public health field, “Human Resource Development in Infectious Disease Control,” “Chargas Disease Vector Control

Projects,” Tuberculosis (TB) Control Projects” and “Maternal and Child Health (MCH) Handbook Projects.” In this way, in international forums Japan has announced its intention to utilize its experience in cooperating with developing countries. What has hitherto been lacking, however, is a systematic analysis to determine what aspects of Japan’s experience will be useful, and what areas require caution in applying the Japan’s experiences to developing countries.

There is an urgent need to systematically examine Japan’s experience to determine which aspects will be useful to developing countries, in order to effectively apply them in cooperation. There have also been requests from developing countries to apply the Japan’s experience in improving its public health and medical system, in particular the achievement of a rapid reduction in the infant mortality rate, in reforming their own public health and medical systems. In the following sections, we will provide an overview of Japan’s initiatives in the field of public health and medical services, and also analyze those initiatives in areas where they are considered likely to be useful to developing countries.

¹¹ Japan committed a total of US\$3 trillion to cooperation in the related fields of infectious diseases and social development over the five year period commencing in the year 2000.

Part I Overview of Public Health and the Medical System in Japan

Chapter 1

The History of Public Health and Medical Services

In order to understand the general condition of public health and medical services in Japan, we will first review changes in population demographics, birth and mortality rates, and disease prevalence. We will then introduce the history of Japan's initiatives in the field of public health and medical services from the Meiji Era (1868~) to the present day, to gain an overview of what initiatives were conducted in each phase.

1. Demographics: Population, Birth and Mortality Rate, Disease Prevalence

1-1 Population Change

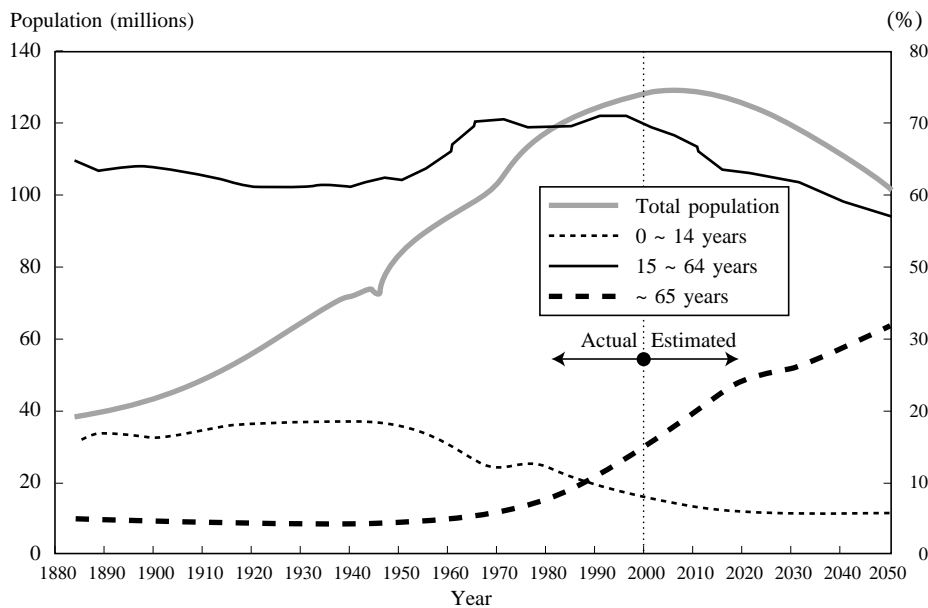
As of October 1, 2002, the total population of Japan was 127,430,000, making it the 7th most populous nation in the world. In the late 1800's, corresponding to the early Meiji Era, the

population of Japan was estimated at 35 million. With subsequent establishment of a capitalist society and economic development came an increase in population, exceeding 64 million by the year 1930 (see Figure 1-1).

Following the end of the Second World War, with the return of soldiers and civilians from overseas, and natural increase due to the first Baby Boom in the 3 years from 1947 to 1949, the population increased by roughly 10 million people, reaching 83.2 million in 1950. Since 1950, the population growth rate has been stable at roughly 1% per year.

Since 1970, a reduced birth rate and increased life expectancy have led to a rapid aging of the Japanese population. In 1970, the elderly population (population aged 65 years old and over) exceeded 7% of the total population, meeting the UN definition of an "aging society." Life expectancy

Figure 1-1 Trends in Total Population and Population Demographics



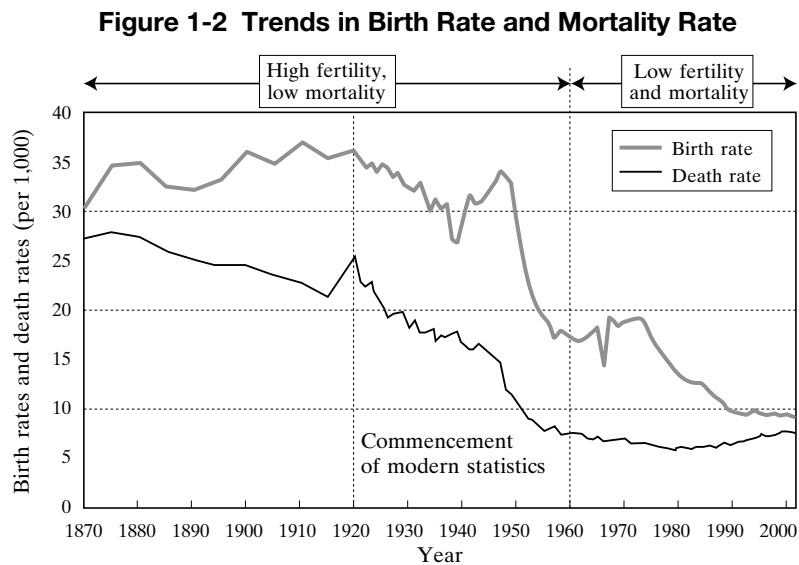
Source: Compiled by the author on the basis of data from the National Institute of Population and Social Security Research.

has subsequently continued to increase, and a tendency to marry later or to remain unmarried has further reduced the birth rate. As of April 2002, the proportion of elderly was 18.3% of the total population, considerably greater than the proportion of children (aged under 14 years) of 14.3%. As a result of the long term reduction in the birth rate, the Japanese population is expected to reach a peak in 2006, and subsequently decline (estimates as of January 2002).

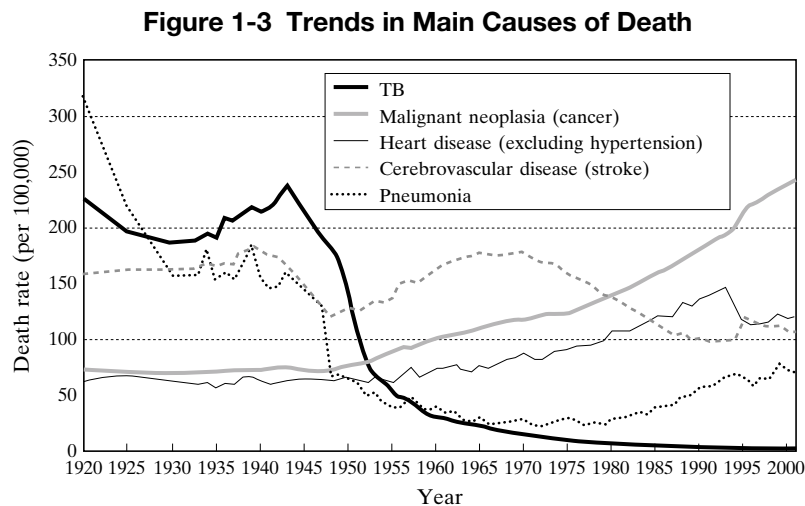
1-2 Birth and Mortality Rate

Until around 1870 (early Meiji Era), both the birth rate and mortality rate were high in Japan, a period of “high fertility and mortality” (see Figure 1-2). While mortality rate subsequently declined, the birth rate tended to rise until around 1910, and then went into a gradual decline. This was the period of “high fertility but low mortality.”¹

After the chaos of the Second World War, the first post-war Baby Boom saw the birth rate soar,



Source: Compiled by the author on the basis of data from the National Institute of Population and Social Security Research.



Source: Compiled by the author on the basis of data from Ministry of Health, Labour and Welfare

¹ Ato, Makoto (2000) *Gendai Jinko-gaku* [Modern Demography], Nihon Hyoron-sha.

reaching at its peak of 2.7 million births per year. However, the birth rate fell dramatically after 1949, and declined most precipitously during the period 1949~1957. The main reason for this decline was the Eugenic Protection Law of 1948 (now the Mother's Body Protection Law), that allowed induced abortion under certain conditions. In 1955, the number of reported induced abortions had reached 1.17 million, a figure to rival the 1.73 million births recorded in the same year. The mortality rate also declined markedly during the same period.

The birth rate has continued to decline from 1973 until the present day. On the other hand, the mortality rate began a gradual but steady increase from the late 1980's, as a result of the aging population. With both the birth rate and the mortality rate at low levels, the period after 1960 has been called that of "low fertility and mortality."

1-3 The Structure of Disease Prevalence

If we examine changes in the structure of

disease prevalence in terms of changes in the main causes of death (mortality rates per 100,000), we see that pneumonia was the number one cause of death until the end of the Meiji Era, and then tuberculosis became the number one cause. This situation continued until 1951. In 1951, tuberculosis was replaced as the leading cause of death by "cerebrovascular disease (stroke)," followed by "malignant neoplasia (cancer)" as the second and "pneumonia, etc." as the third.

This brought together what remain today the three leading causes of death. It can be said that at this time the major causes of death changed from infectious diseases to lifestyle-related diseases. Since the late 1960's, cerebrovascular disease (stroke) has steadily declined, whereas heart disease has increased as a cause of death. Malignant neoplasia (cancer) increased steadily throughout the post-war period, becoming the number one cause of death in 1981, and has subsequently continued to increase (see Figure 1-3)³.

Table 1-1 Classification of the Phases in Public Health and Medical Systems in Japan

	Phase I	Phase II	Phase III	Phase IV	Phase V
	1868~1919	1920~1945	1946~1960	1961~1979	1980~present
Period	Acute infectious diseases control	Chronic infectious diseases control and formation of maternal and child health services	Restructuring the health administration	Expanding medical services	Challenge of an aging society
Main Issues	<ul style="list-style-type: none"> • Acute infectious diseases 	<ul style="list-style-type: none"> • Chronic infectious diseases • Maternal and child health 	<ul style="list-style-type: none"> • Postwar acute infectious diseases • Chronic infectious diseases • Maternal and child health • Sanitation 	<ul style="list-style-type: none"> • Lifestyle-related diseases • Traffic accidents • Environmental pollution • Occupational health 	<ul style="list-style-type: none"> • Low birth rate and aging population
Initiatives	<ul style="list-style-type: none"> • Establishment of a centrally directed epidemic prevention systems • Collation of statistics 	<ul style="list-style-type: none"> • Initiation of a community-based approach to public health, centered on public health nurses 	<ul style="list-style-type: none"> • Restructure of the health administration • Community-based health approach to public health 	<ul style="list-style-type: none"> • Universal health insurance coverage • Expansion of medical services • National movement demanding better public health and medical services 	<ul style="list-style-type: none"> • Effective and efficient distribution of medical institutions and personnel • Radical reform of the social security system • Promotion of new community-based public health

Source: compiled by the author.

³ Causes of death were classified in accordance with the WHO criteria, but major modifications to these criteria in 1995 (set in 1979) mean that caution is required in making comparison of data from before and after 1995.

2. The History of Public Health and Medical Services⁴

In this study, we examined changes in public health and medical services in Japan since the Meiji Era (1868~1912), dividing this period into five phases, looking at both the principal challenges in each phase and the main initiatives taken to meet those challenges (see Table 1-1).⁵ We will briefly outline the characteristics of each phase.

Phase I “Acute Infectious Diseases Control” was the period in which Western medicine was introduced to Japan as part of its modernization, and acute infectious diseases were the greatest challenge.

Phase II “Chronic Infectious Disease Control and Formation of Maternal and Child Health Services” was the period when, in accordance with the Kenpei-Kenmin (Healthy Soldier, Healthy People) concept, public health services were strengthened to combat chronic infectious diseases and to improve maternal and child health. The basic structure of the public health system of today was established during this phase.

Phase III “Restructuring the Health Administration” was the period in which the administration of public health and medical services was restructured as part of the recovery from the defeat in the Second World War. Initiatives during this period dealt with the urgent challenge of acute infectious diseases, as well as tuberculosis. Other programs strongly promoted maternal and child health and family planning, bringing rapid reductions in the infant mortality rate as well as the birth rate in this phase.

Phase IV “Expanding Medical Services” was the period in which universal health insurance coverage was achieved, leading to a rapid increase in the demand for medical services, necessitating expansion of the capacity of the medical system.

Environmental pollution from the flourishing heavy chemical industry at this time became a major social problem. Lifestyle-related diseases replaced infectious diseases as the major health challenge during this period.

Phase V “Challenge of an Aging Society” is the period in which we need to make drastic reforms in the health care and medical system to meet the challenges caused by a rapidly aging population. In the midst of large scale restructuring of the social security system, the provision of health care and medical services is also undergoing re-examination. This is a period when the providing system of community-based service is also being reinforced in the health care field in the decentralization of many governmental activities.

We will now provide an overview of the characteristics of Japan's initiatives in the field of public health and medical services for each phase.

2-1 Phase I: Acute Infectious Disease Control (1868~1919)

[The Birth of a Modern Nation]

In 1868, Japan ended a 250 year period of isolationism and the Bakuhau-taisei (Shogunate and domain system, feudal system comprising the Shogun and the lords of each domain). The newly established Meiji Government strived to remake and develop Japan into a modern nation the equal of the Western nations. Public health administration was also part of this process of becoming a modern nation.

[Introduction of a Western Medical System]

In 1868, Japan decided to introduce Western modern medicine, and a medical section was set up within the Ministry of Education. By 1872, public health services were commenced. The purpose of the establishment of the medical

⁴ This subsection is written based on Part II, so for details of initiatives in each field, please refer to the relevant chapter in Part II.

⁵ In setting the time divisions, as described in the Appendix at the end of this chapter, a number of commonly used systems were considered before deciding on the time divisions, that should be easily understandable to people in developing countries using the Western calendar.

section was to manage medical education and medical administration uniformly. The following year in 1873, the medical section became the Medical Bureau. In 1874, the “Comprehensive Medical Code” was promulgated, setting the standards for central and regional public health administrative structures, medical education systems, the establishment and management of medical institutions, the disposition of medical personnel, and pharmacological administration.

The most notable aspect of the Comprehensive Medical Code was that it established a system for provision of medical services under central governmental control, that it expanded medical education and the medical registration system, and that it set up a national medical system centered on private clinics/hospitals. In 1875, with the exception of medical education, all medical and health administration was transferred to the Ministry of Home Affairs.

[Professional Training]

Schools that had taught traditional medicine were progressively reborn as Western medical schools. These medical schools set up programs, raced one another to employ well-known medical educators from Germany and England, and trained the first generation of doctors to practice Western medicine in Japan.

During the Edo Era (1603–1868) there were a variety of “self-styled doctors,” including practitioners of traditional Chinese medicine (Kanpo). In 1879, the “Medical License Examination Regulations” were promulgated, establishing a system whereby only candidates who had studied Western medicine were eligible for a license to practice medicine. Subsequent increases in the number of regional medical schools saw the number of licensed qualified doctors rise sharply from 36,000 in 1907 to 40,000 in 1911, and 49,000 in 1931⁶. In 1906, with the passage of the Medical Practitioners’ Law and the Dental Practitioners’ Law, the medical

license became an accreditation rather than a license to practice.

During the Edo Era, “*sanba*,” traditional birth attendants, practiced widely, but there was no system of accreditation or training, as well as a lack of scientific knowledge or technical skill, and some specialized in performing abortions. Immediately following the Restoration (in 1868), the new Meiji Government accordingly issued a proclamation prohibiting the sale of medicines or procuring of abortions by *sanba* (abortion was made a criminal offense in the (Old) Penal Code enacted in 1880). Nationwide accreditation of *sanba* commenced with the “*Sanba Kisoku* (Midwifery Regulations)” in 1899. These regulations set national standards for the age, range of permitted activities, and accreditation of midwives. Midwifery training schools were subsequently established in all parts of the nation.

In comparison to doctors and midwives, the history of nurses in Japan is much more recent. The profession of nursing was established nationally with the promulgation of the “*Kangofu Kisoku* (Nursing Regulations)” in 1915, as until that time the accreditation of nurses had been the jurisdiction of the individual prefectural government.

[Health Administration as Part of a Social Security System]

With the end of Japan’s period of isolation, trade flourished with foreign countries. With the trade came repeated epidemics of exotic infections, including cholera, bubonic plague, and smallpox. To combat this situation, the public health administration was strengthened, with emphasis on controlling acute infectious diseases through hygiene and sanitation measures. The basis of this program was “social defense,” with the police making up the front line. The public health and medical system was expanded in this way under firm central government control.

Recognizing the need for a systematic

⁶ Kawakami, Takeshi (1965) *Gendai Nihon Iryoshi-Kaigyoisei no Hensen* [Japan’s History of Modern Medical Care —History of System of Medical Practitioners] Keiso Shobo.

approach to infectious disease control, in 1879 the Ministry for Home Affairs directed all prefectures to establish a Health Bureau. At the same time, due to financial restrictions “Community Public Hygiene Committees” were set up as local government bodies to provide community-based public health services. In 1885, a regional system of government was established along with the introduction of the Cabinet system. The organization of the regional health administration was also revised at this time, and brought under central governmental control. Public health administration in remote areas became one of the duties of the police departments of local government, and the Community Public Hygiene Committee system was abolished.

In 1893, the Department of Police at the local government took over responsibility for public health administration, and essentially this situation continued until the end of the Second World War in 1945.

[Collection of Statistics and Determination of Policies Based on Scientific Evidence]

Accurate statistics are fundamental to a public health and medical information system. Mortality statistics from 1876, and “population statistics” from 1899, allowed the collation of reasonably accurate data concerning births and deaths. Collation of these statistics and the conduct of national surveys set the course for policy formulation based on scientific evidence, and boosted the performance of the administration of public health and medical services.

In 1916 the Ministry of Home Affairs established the “Health and Sanitation Research Council.” This council conducted research principally in the eight areas of 1) infants, toddlers, school-age children and adolescents; 2) tuberculosis; 3) venereal disease (sexually transmitted disease); 4) leprosy (Hansen’s Disease); 5) mental illness; 6) food, clothing, and housing; 7) sanitation in rural villages; and 8) statistics. These surveys revealed many hitherto unknown aspects throughout the country. Chronic infectious diseases such as

tuberculosis, infant mortality rates, and problems with the development and health of the populace were found to be markedly more serious than in foreign countries.

As a result, a number of new laws, including the Tuberculosis Prevention Law, Leprosy Prevention Law, Trachoma Prevention Law, Venereal Disease Prevention Law, and Parasitic Disease Prevention Law were enacted. Progress was seen in chronic infectious disease control measures. Statistics were collected, and surveys conducted, over the ensuing decades, and the first modern National Census was conducted in 1920. Population statistics were now collected using fully scientific methods, enabling policy formulation based on accurate understanding of the present situation, and soundly based predictions of the future.

[Public Health Infrastructure]

In the early Meiji Era (1868~), there was recognition that it would be important to improve sanitation. These improvements included improved drinking water quality, street cleaning and refuse collection, sewage treatment and better housing, as control measures for acute infectious diseases, especially cholera, and steps to eliminate the cause of such contagions. In practice, however, the health administration was fully occupied dealing with repeated epidemics, and found it difficult to devote resources to sanitation.

An effective approach to cholera was developed by the late 1800’s, and programs commenced to improve water supplies and sewage. Public water supplies were tackled first. Following the laying of the first piped water supply in Yokohama in 1887, and the enforcement of the municipal system in 1889, water supplies were planned throughout the country as municipal projects. In 1890 the government set regulations to further promote the provision of water supplies. The Sewerage Law (obsolete law) and Waste Management Law were also enacted in 1900.

2-2 Phase II: Chronic Infectious Disease Control and Formation of Maternal and Child Health Services (1920~1945)

[Continues Development of the Public Health and Medical System during Wartime]

During wartime, Japan functioned under military rule. War-related industries flourished, and centralized administrative organizations expanded. In accordance with the *Kenpei-Kenmin* (Healthy Soldier, Healthy People) concept, a series of related programs were set up to control chronic infectious diseases, ameliorate maternal and child health, and improve the physique of the population. The Ministry of Health and Welfare was established in 1938, completing the present structure of the public health and medical system particularly programs to combat tuberculosis and reduce the infant and maternal mortality rates, the two great national challenges.

[Tuberculosis—the National Scourge]

During this period, tuberculosis spread through female textile mill workers, workers in munitions factories, as well as the armed forces. When those infected returned to their home towns, they took tuberculosis with them, spreading the infection throughout the country. There was no specific treatment for tuberculosis at that time, and the only recourse was to build up the strength of sufferers using the three elements of rest, nutrition, clean air, and wait for them to recover. Deaths from tuberculosis rose steadily from the 1900's, reaching a peak of 140,000 deaths, and a mortality rate of 257.1 (per 100,000 population) in 1918. Tuberculosis was feared as a “national scourge” by the general population (see Chapter 5 Figure 5-1). In the face of this situation, the government enacted the “Tuberculosis Prevention Law” in 1919, and commenced a systematic tuberculosis control program.

[From Epidemic Prevention to Disease Prevention]

As part of a program to reduce the infant

mortality rate, in 1926 the the Ministry of Health and Welfare established Infant Welfare Centers in each locality, staffed by public health nurses. The public health nurses performed home visits, offering lifestyle guidance and disease prevention activities for pregnant women and their children. Similar outreach health counseling was conducted in each municipality, leading establishment of the public health center system.

During this phase, regional villages in northeast Honshu (the main island of Japan) were gripped by poverty caused by economic depression and natural disasters. Medical expenses were a tremendous burden on poor farmers, so they were unable to see a doctor, leading to an extremely high infant mortality rate. In regions such as this, charity organizations such as the *Onshi Zaidan Saiseikai* (Imperial Gift Foundation Saisei Association, established in 1911 under Imperial aegis) and the *Tohokukoshin-kai* (Tohoku Association for Revitalization, a community organization established in 1935) conducted programs to save lives in rural villages, posting public health nurses to remote doctorless areas.

These programs only reached a small proportion of the needy areas, however, and with the enactment of the National Health Insurance Law in 1938 came the establishment of a system of “community public health nurses,” with public health nurses stationed nationwide, including local industrial guilds and municipalities. The activities of public health nurses changed from an emphasis on controlling the epidemics to an emphasis on disease prevention in general. Until the end of the Second World War, public health nurses played a central role in community-based public health activities, working to improve the health of their community.

[The Establishment of Public Health Centers and the Ministry of Health and Welfare]

In accordance with the wartime *Kenpei-Kenmin* (Healthy Soldier, Healthy People) concept, the “Public Health Center Law” was enacted in 1937. Based on various types of health centers

already operating in a number of localities, about 40 public health centers were established nationwide, to provide guidance and consult in a number of areas including tuberculosis control measures, maternal and child health, and improved nutrition.

In 1938, the Ministry of Health and Welfare was established. It is the first time that Japan unified all aspects of the administration of public health and medical services under a single authority. In the same year, the National Health Insurance Law was promulgated. By the end of 1943 the national health insurance (NHI) system had covered over 95% of municipalities in Japan, so this period is known as the “First Era of Universal Health Insurance Coverage.”

Towards the end of the Second World War in 1944, health centers that had been set up for various purposes and were run by local government and other organizations, had all been accredited as public health centers under the Public Health Center Law, and the number of public health centers had reached over 700 nationwide.

[Increased Numbers and Activity of Public Health Nurses]

As outlined above, the 1938 National Health Insurance Law included provisions for the placement of public health nurses, so their numbers were increased at this time. The Public Health Center Law created public health nurses positions as local government employees in the public health centers. As their numbers increased, public health nurses working for various organizations with different qualifications began to call for uniform nationwide qualifications. In 1941, under the Public Health Nurse Regulations, a national system of accreditation of public health nurses had begun. The social demands on public health nurses were at their highest in the midst of wartime privations. With death in infancy and from tuberculosis common, public health nurses traversed their districts at all hours responding to the needs of their communities. They became an essential presence in rural and doctorless villages, providing services ranging from basic health

guidance to, at times, simple medical treatment. The dedicated commitment that the public health nurses at this time made, responding flexibly to their clients' needs, should set an example for community-based public health today.

[Commencement of the “Pregnant Mother’s Handbook” System]

As part of the Kenpei-Kenmin (Healthy Soldier, Healthy People) policy, in 1942 the “Pregnant Mother’s Handbook” system, the precursor of the “Maternal and Child Health Handbook,” was launched. A survey conducted in 1940 revealed that of an estimated 2 million pregnancies in Japan that year, 280,000 ended in miscarriage or stillbirth, and 60,000 in induced abortions, with 60,000 premature births. With the aim of improving outcomes in the puerperal period, based on the German “Mutterpass” a comprehensive Japanese Pregnant Mother’s Handbook system was developed. This system aimed to provide a comprehensive health monitoring system for pregnant women, new mothers and infants. Under this system, pregnant women were required to register their pregnancy with their local municipality, at which time they were issued with the Handbook, and were advised to undergo medical examinations at least 3 times during the pregnancy.

At each visit, entries were made in the handbook concerning the progress of the pregnancy and birth, and any abnormalities, under the headings “date of check up and consultation,” “number of months in pregnancy, etc.,” “notes (examination findings, results of investigations),” and “delivery notes.” These notes were then available for perusal during the next pregnancy. At the time, there was no concept among the general Japanese population of taking responsibility for one’s own health, and the handbooks therefore also served as a revolutionary health education tool. Further impetus was given to the uptake of this system by the realization that, despite wartime food shortages, pregnant women in possession of a Handbook received special rations of sanitary

napkins (for use at the time of delivery), gauze, soap and (chicken) eggs.

[Endowments to the Institute of Public Health and Health Care Centers]

The public health training institute of note during this period was the Institute of Public Health⁷ (opened in March 1938), established as an educational institution for Japanese public health professionals with a grant from the Rockefeller Foundation. To this day, the Institute of Public Health plays an important role in education and research in the field of public health in Japan.

In addition, the Rockefeller Foundation made donations to the Kyobashi Health Care Center in Kyobashi, Tokyo (opened in 1935) and the Tokorozawa Health Care Center in Tokorozawa, Saitama Prefecture (opened in 1938). The Kyobashi Health Care Center served as a model of an urban community health center, and the Tokorozawa Health Care Center for a rural community. Both also functioned as training centers for students from the Institute of Public Health.

[Emergence of Private Organization]

The *Onshi Zaidan Boshi Aiiku-kai* (Imperial Gift Foundation Aiiku Association, now the Nippon Aiiku Institute of Maternal-Child Health and Welfare), was established in 1934 as an Imperial household initiative. The association began a program of Aiiku groups (Married Women's Voluntary Groups for Mother-Child Health and Welfare) in 1936. The association conducted the first surveys of rural farming and fishing villages in Japan and discovered the seriously high infant mortality rate in those areas.

With the idea of involving the entire village in meeting this problem, the association designated "Model Aiiku Villages." In these villages Aiiku groups were set up involving the entire community, with female volunteers becoming Aiiku group members, conducting maternal and child health educational activities through home visits and study

groups. This program was expanded further in 1939, becoming a state subsidised program of the Ministry of Health and Welfare, at its peak increasing up by more than 1,200 villages nationwide in wartime.

An Imperial household initiative, the "Japan Anti-Tuberculosis Foundation" (Japan Anti-Tuberculosis Association, JATA) was similarly established in 1939. JATA remains today the leading player in tuberculosis control programs in Japan, conducting surveys, researching therapies, and formulating tuberculosis policies.

2-3 Phase III: Restructuring the Health Administration (1946~1960)

[Post-war Chaos and Reconstruction]

Immediately following the end of the Second World War, Japanese people's lives were in a state of chaos, with food shortages, typhus fever brought back by those returning from overseas, and epidemics of foreign infectious diseases such as smallpox and cholera. The health indicators for Japan in 1947 were similar to those seen in developing countries today, with the infant mortality rate at 76.7 per 1,000 live births, and tuberculosis the number one cause of death, with 187.2 deaths due to tuberculosis per 1,000 population. In the 10 year post-war period, however, an extraordinary improvement in the health indicators was seen, with the total mortality rate and infant mortality rate both halved, the mortality rate from tuberculosis reduced by two-thirds (in 1952, cerebrovascular disease replaced tuberculosis as the number one cause of death), accompanied by a precipitate drop in the birth rate.

Behind these achievements were a combination of factors, including improvements in the socioeconomic situation, higher educational standards, and medical advances. Under the direction of the General Headquarters (GHQ) of the Allied Powers, administration of the public health system was overhauled, and public health

⁷ Now the National Institute of Public Health.

services based on the public health center network was expanded. Also important were the activities of public health nurses, and the spontaneous emergence and spread of community health activities.

[Reconstruction of Health Administration]

Democratization programs were instituted in all areas after the war. The new Japanese Constitution was promulgated on 3 November 1946, guaranteeing the right to life of all citizens, and stating that “In all spheres of life, the State shall use its endeavors for the promotion and extension of social welfare and security, and of public health” (Constitution of Japan, Article 25, Section 2). Reconstruction of the public health administration was also conducted in accordance with the new Constitution. Basic reforms of the administration of public health and medical services conducted under GHQ supervision began with the establishment of the three Health Bureaus (Public Health, Prevention, and Medical Services). That was followed by the establishment of independent Health Departments in each prefectural government in accordance with the 1947 revisions to the Local Government Law.

In the same year, the Public Health Center Law underwent a complete overhaul, expanding and strengthening the network of public health centers, aiming for one center for every 100,000 people. The systems of accreditation for medical services professionals were also extensively reformed, and “*Iyaku-bungyou* (the separation of dispensary from medical practice)” was introduced. A number of new public health regulations were enacted, including a Child Welfare Law, Preventative Vaccination Law, Eugenic Protection Law, and School Health Law. The Tuberculosis Control Law was also revised. At the same time, budgets were increased, as were the numbers of public health workers, and thus was laid the foundation for a new health services administration.

[Birth of a New Public Health Center]

Under GHQ direction, the “New Public Health

Center Law” was enacted in 1947, expanding the network of public health centers and strengthening their operations, and firmly establishing the position of the public health center as the first line of public health administration in the community. During the post-war period of confusion, the level of public health was extremely poor in Japan, with the spread of sexually transmitted and other infectious diseases, and food shortages. To improve the public health situation, public health centers were placed under the administration of the prefectures, or designated municipalities, and supervised almost all areas of public health measures.

Public health centers were involved in improving and spreading awareness of public health matters. They monitored collection of vital statistics, improvements in nutrition and food hygiene, water supplies and sanitation. In addition, they oversaw matters related to public health nurses, promotion and improvement of public medical programs, maternal and child health, dental health, hygiene tests and examinations, and the prevention of tuberculosis and sexually transmitted diseases. Public health centers were staffed by health professionals such as doctors and public health nurses, and equipped with diagnostic equipment such as X-ray machines.

[Outstanding Contribution of Public Health Nurses]

The position of public health nurse was first defined in the “Public Health Nurses Regulations” promulgated in 1941 during the war, and then reorganized as part of the post-war democratization of community-based public health administration. A new Public Health Center Law was enacted in 1947, markedly expanding the role of public health nurses. This was followed in 1949 by the issue of guidelines for the duties of public health nurses, placing them at the center of community-based public health services (see Chapter 8 Figure 8-1). Their activities were varied in nature, based on the initiative and dedication of the nurses themselves and their response to community needs. Responsibilities included local government duties, support for medical practitioners, direction of

parasite control programs, maternal and child health check-up, family planning promotion, and health education.

[Contributions of Practicing Midwives]

Practicing midwives made a significant contribution toward rapidly reducing the infant mortality rate from the pre-war to the post-war period. Until the 1960's, most births were delivered at home with support of a practicing midwife. It was not unusual for the same midwife to deliver children over two generations in the same family. Midwives were often acutely aware of the economic hardships faced by families in their care.

Midwife was considered a desirable career for girls with superior academic ability. They were in a position of respect and trusted to give advice on family planning and other sensitive matters. After the war, many practicing midwives earned qualifications as Family Planning Workers, and worked to spread the family planning message into the community. At that time, it was not uncommon for births to take place in a room with a dirt floor and no hygienic precautions. Educating the populace to improve this situation was the task of the practicing midwives.

There were also other hygiene-related problems with home births. To improve the quality of obstetric care, and resolve the situation where expectant mothers could not give birth with confidence, local governments built "Maternal and Child Health Centers." These were comfortable, hygienic birthing places staffed by midwives. In 1958, maternal and child health centers became a national program and facilitated the construction of new centers.

[Development of Local Community Organizations]

Although community-based public health groups as neighborhood community associations and neighborhood organizations, were active during World War II in Japan, all aspects of life were under governmental control under the "National Mobilization Law" enacted in 1938. After the war, all existing community organizations were abolished by GHQ.

However, as communities faced common problems of poverty and disease, once again groups like neighborhood community associations, housewives' associations and youth clubs came together on a volunteer basis to address the problems (e.g. the No Mosquitoes and Flies Program, the Aiiku-group movement, and the Women's Anti-Tuberculosis Association etc.) These community organizations, involving the entire local population, made important contributions in the control of infectious diseases improved maternal and child health, and improved nutrition for the community in general. Community activities at this time were conducted in close collaboration with public health centers, public health nurses, local government, and schools.

[Contributions from a Variety of Private Resources]

In the disruptions of the post-war era, on average parasitic infection rates were high at 73%, with a number fatalities. Before any major initiatives were commenced by the national government, private organizations offered user-paying services like stool sample examinations and antihelminthic treatments in primary and junior high schools and workplaces nationwide, achieving a marked decrease in the rate of infestation. Experts in parasitology and faculty members from regional universities collaborated in developing stool sample examination methods and antihelminthic treatments, and contributed to technical innovations.

In the field of family planning as well, after 1950, many non-governmental organizations were established. An umbrella organization, the "Family Planning Federation of Japan" was set up in 1954, and in 1955 hosted the "Fifth International Conference on Planned Parenthood," fostering an increased level of interest in family planning within Japan. The "Japan Family Planning Extension Association" (later the Japan Family Planning Association, JFPA), established in 1954, acted as a bridge between government, academic groups and private organizations, and had a major influence on policy decisions in this field. The JFPA has also played a

leading role in spreading the family planning message in Japan, through the training of Family Planning Workers, production of educational materials, advertising campaigns, and social marketing methods for condoms (see p. 99).

Major private companies also launched the “New Life Movement” in 1952. This movement promoted family planning and health education for employees and their families, making a significant contribution to reduced population growth and improved health of the Japanese people. The large companies also launched their own anti-tuberculosis campaign from the late 1940's, conducting regular health checks of their employees and setting up dedicated tuberculosis wards. These measures achieved a rapid drop in the number of cases of tuberculosis within these companies. These private campaigns greatly contributed to a nationwide reduction in the prevalence of tuberculosis, giving impetus to the economic development of Japan.

[Contributions of Livelihood Extension Workers]

During the post war occupation, GHQ also worked to democratize conservative rural Japanese villages. As part of this program, a Rural Life Improvement Movement (R-LIM) was developed to be “for women and run by women.” Livelihood Extension Workers, with training in the American-style participatory rural development method, worked with rural women to identify and solve problems with lifestyle, family, and themselves.

The R-LIM began as a program of the Ministry of Agriculture, Forestry and Fisheries, but the multiplicity of the problems faced by women led to linkages with programs of the Ministry of Health and Welfare, Ministry of Education, and local government bodies. It produced a multisectoral program covering public health, family planning, social education, sanitation and rural development. The R-LIM also contributed to improved status and self-image for women.

[The Public Health and Medical Insurance System]

As the living standards of the population rose,

the public health and medical services administration began to pay particular attention to programs for the poor and elderly. As one-third of the population at that time was not covered by medical insurance, a “National Health Insurance Law” was enacted in 1958 and a national health insurance program was introduced. The universal health insurance coverage was established by April 1961. During the same period, discussions on the public pension system were promoted and in 1959 the universal pension system was also realized. Thus the foundation of the Japanese Social Security System was put into place at this time.

2-4 Phase IV: Expanding Medical Services (1961~1979)

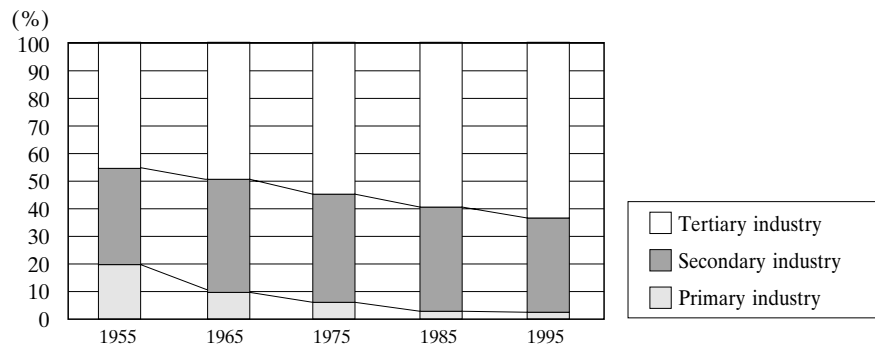
[Changes in the Social Structure]

From the late 1950's Japan entered a period of rapid economic growth, associated with changes in the industrial structure. Until the early 1970's, the numbers of workers in the primary industry fell steadily, moving into the secondary industry, and after this time the proportion of workers in the tertiary industry increased (see Figure 1-4). Within secondary industry, expansion of heavy industry and the introduction of mass production techniques in manufacturing led to an explosion in employment opportunities in the cities, and a large scale internal migration from rural villages to the cities. Worker's wages also rose considerably at this time. Agricultural productivity also increased, with the introduction of mechanization and chemical fertilizers, and farmer's household incomes also rose.

[Expansion of Medical Services]

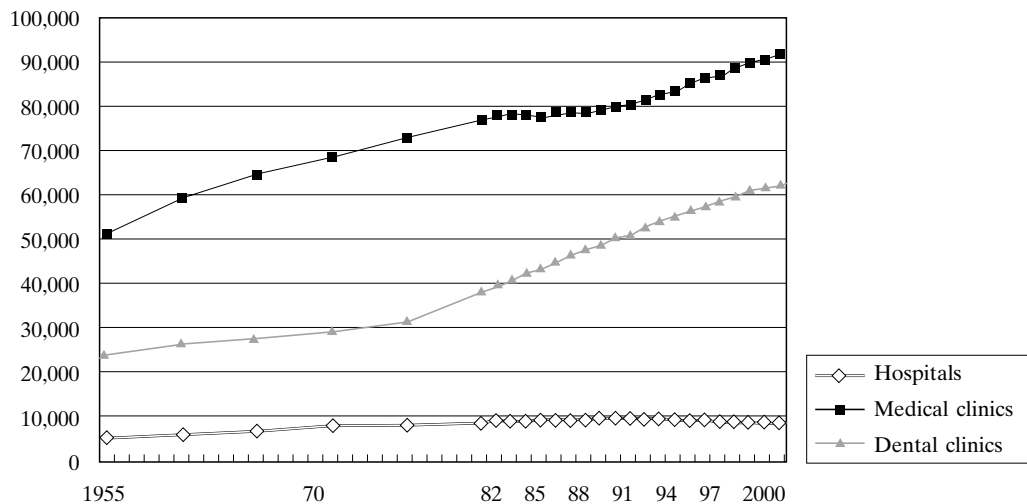
With the introduction of universal health insurance coverage in 1961, all Japanese people were able to access medical services on an equal basis, leading to a rapid increase in demand. Expansion of medical services to meet the demand became a major challenge. The Medical Service Law was revised in 1950, introducing the medical corporation system. This resulted in a steady increase in the numbers of hospitals and hospital beds (see Figure 1-5).

Figure 1-4 Change in Industrial Structure



NB: Industrial structure in terms of composition of GDP
 Source: Data from Economic Planning Department

Figure 1-5 Trends in Numbers of Medical Institutions



Source: Ministry of Health, Labour and Welfare

Box 1-1 Initiatives for Doctorless Regions

—Focusing on the Example of the Jichi Medical School—

Initiatives for doctorless regions in Japan began immediately after the war to improve the conditions in those regions. From 1956, a plan was initiated in private clinics in doctorless and difficult to access regions with populations between 300 and 2,000. Private clinics are generally difficult to run successfully in remote areas, however, and it is difficult to attract medical and other personnel, so rather than independent clinics they set up branch clinics of public medical institutions, and subsidized their operating expenses.

With the increase in demand for medical services from the late 1960's came a marked shortage of doctors even in large hospitals and metropolitan medical clinics, leading to nationwide increases in medical school enrollments. A plan was announced to set up a medical school in each prefecture, and new regional medical universities were established. Despite programs such as these, advanced economic development saw the younger generation gravitating to the cities, depopulating many rural areas. The average age in these areas also increased, and access to medical services became

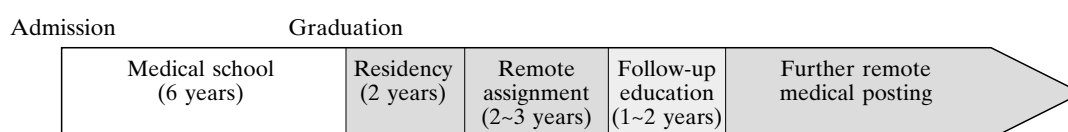
increasingly difficult.

To combat the serious doctor shortage in these underpopulated areas, in 1972 a number of prefectural governments co-founded the Jichi Medical School (JMS). The basic philosophy of the JMS is to recruit promising students from affected areas, provide them with the skills required to practice medicine in remote areas, and assign them to underpopulated regions. The prefectures jointly bear JMS's running costs, including the educational expenses for their students, on the understanding that on graduation they will provide medical services in remote regions in their native prefectures. JMS selects 100 new students each year, two or three from each participating prefecture. All students stay in the school dormitory for the entire 6 year course in order to help foster a spirit of independence, cooperation and a strong sense of responsibility. All school expenses, including entry and tuition fees, are loaned to the students. They are exempt from repaying the loans if, after graduation, they work for a specified period at the public hospitals or clinics to which they are appointed^{NB}.

The system of education and training is essentially similar to other medical schools (see the chart below). After passing the national medical registration examination on completion of 6 years of study, new graduates undergo two years of residency prescribed in the Medical Services Law. Most JMS graduates do their residencies at a central hospital in their native prefecture. The ensuing process differs from other medical schools. On completion of their residency, JMS graduates commence their activities in earnest as doctors in remote regions. JMS recommends that, after several years of remote medicine, their graduates undergo a further one to two years of postgraduate education, to gain more advanced medical knowledge and clinical abilities suitable for even broader public health and welfare applications. After this second period of training, graduates are expected to take up a further posting in a remote community. Based on the system of not having to repay their educational loans if they work for a certain number of years in remote medicine in their home prefecture, JMS graduates are an important part of the medical workforce in remote areas where medical resources are scarce.

JMS has turned out 2,693 graduates (as of 2004). Of those still working in medicine, 44% (as of 1 July 2001) were working in remote areas. There is a limit to the number of graduates that JMS alone can produce, and the problem of doctorless regions remains a serious one.

The Education and Training System at the Jichi Medical School



NB: Exemption from repaying the education loan is granted when the period a graduate works as a doctor, in public hospitals or clinics appointed to them by the governor of their home prefecture (one half of this working period to be in a remote hospital or clinic), exceeds one and a half times the period of the loan. If for example a student takes 6 years to complete their course, then they will need to work for 9 years. Usually, residencies and time in remote medicine are counted towards this work requirement, but some prefectures also count time spent in further education.

Source: Jichi Medical School Homepage (<http://www.jichi.ac.jp/index.html>), Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Years' History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyu Kai, and Jichi Medical School Hearing.

From 5,119 hospitals in Japan in 1955, there were 7,047 in 1965, rising to 8,294 in 1975, and reaching 10,096 in 1990. There were 51,349 medical clinics in 1955, increasing to 64,524 in 1965, 73,114 in 1975, and 80,852 in 1990. Several advanced medical institutions, such as the National Cancer Center and the National Cardiovascular Center, were set up to conduct research, provide advanced medical care and develop new therapeutic techniques for lifestyle-related diseases.

The rapid increase in the number of medical institutions caused a shortage of medical services personnel. The shortage of nursing staff was particularly serious. This led to the establishment of various education loan systems, and a subsidy was provided to nursing schools. There were also a number of measures introduced to utilize qualified, but unemployed nurses. These included retraining courses, starting in 1967, for nurses who had left the field, improvements in working conditions, increased wages, and provision of in-hospital child care facilities. As a result, the number of nurses and assistant nurses has steadily increased (see Chapter 2 Figure 2-4).

To deal with the serious problem of doctor shortages in remote regions and islands, the Ministry of Health and Welfare introduced a Remote Medical Services Program in 1956. Those prefectures that had regions with no medical doctors cooperated in establishing the Jichi Medical School in 1972, with the aim of fostering medical practitioners for remote regions (see Box 1-1).

In addition to the increase in the demand for medical services and the advances of medical techniques at this time, a number of new areas of paramedical professions were created. These included dental technicians, medical technologists, physiotherapists, radiographers, medical laboratory technologists, and orthoptists.

[Social Change and New Challenges]

During this period, the mortality rate from tuberculosis and its prevalence dropped markedly, due to the use of new medications and regular health checks available to much of the population.

Public health centers combined improvements in sanitation such as the installation of small-scale water-supply systems, and the spread of the agricultural use of chemical fertilizers to drastically reduce the incidence of parasitic diseases, and infectious diseases such as dysentery and trachoma.

As the infant mortality rate fell, accompanied by a precipitate drop in the birth rate, the focus of the public health administration turned from infectious diseases and maternal and child health towards lifestyle-related diseases. Medical institutions accordingly took over from public health centers the function as the focus of community-based public health and contributed greatly to improvements in the health of the populace.

Continued economic growth after 1955 saw the flourishing of heavy chemical industries, population concentration in the cities, and the spread of automobiles. These brought in turn new public health and medical problems associated with traffic accidents, pollution, and destruction of the environment. Insufficient investment in social infrastructure, such as water supplies, sewage, and urine and waste treatment facilities, also became a serious problem. Programs were developed to face these problems.

2-5 Phase V: Challenge of an Aging Society (1980~present)

[Financial Crisis and Rising Medical Costs]

In 1973, the Japanese economy entered a stage of low economic growth as a consequence of the global depression and inflation following the “Oil Shock.” As the national and regional financial situation deteriorated, administrative and financial reforms were initiated that included social security programs. Per capita medical costs rose during this period due to the aging population, changes in patterns of disease, advances in medical techniques, and longer periods of treatment.

Medical costs as a proportion of the national income rose sharply during the 80’s and 90’s, from 3.0% in 1960 to 8.5% in 2001 (see Chapter 2 Figure

2-5). In response to this situation, from 1985 the “Medical Service Law” has undergone a number of revisions. The system has been reformed with the aim of providing effective and efficient medical services through the correction of improperly distributed regional medical resources and better cooperation between medical institutions.

[Response to the Aging Population]

By 1955, the aging of the Japanese population had already begun. It has progressed since that time, with further decline in the birthrate and extension of life expectancy. Reforms to the social security system were needed. In 1982, the “Law for the Health and Medical Services for the Elderly” was passed, integrating disease prevention, treatment and rehabilitation. The law also introduced partial cost-sharing of medical cost for the elderly. Further adjustments to the medical cost structure followed. In 1986, revisions to the Law for the Health and Medical Services for the Aged introduced a new “*Rojin Hoken Shisetsu* (Health Care Facilities for the Elderly),” that combines the best aspects of hospitals and nursing homes.

With the advent of a truly long-lived society, and changes within and outside Japan such as scientific advances, the information society and globalization, come demands for responses in new fields. In 1987, the national Health Services Policy Department in the Ministry of Health and Welfare published an interim report examining efficient

delivery of high standard medical services to the aging society of the 21st century. This report suggested that the future of the Japanese medical system lies in the pursuit of quality rather than quantity, providing appropriate institutional and home-based care for the elderly, avoidance of long hospitalization, and improved patient services.

[Towards a New Era in Community-based Public Health]

Large scale changes in public health administration have been required due to varying demands, and different values, from local communities. Greater emphasis is now placed on the opinions of individual service recipients. In response to the needs of the day, the trend towards decentralization, the Public Health Center Law was renamed the “Community Health Law” in 1994 (taking full effect in 1997). The new law sets up a new system aimed at providing services appropriate to each member of the community, with the local municipality as the main public health service provider.

The “Long-term Care Insurance Law”⁸ was passed in 1994 (enacted in 2000), with the result that some services previously regarded as medical services now became care services.

Efforts continue to create a social security system that respects quality of life (QOL) until the very end, whereby all senior citizens can select the services based on their desires.

⁸ Long-term care insurance is principally under the aegis of the local municipality. It is the first example of decentralization in Japan with all administrative powers, such as finance, planning, and service delivery transferred from the central government to local governments. This system is rated highly by experts in public administration.

Appendix. Discussion of Classification of Phases in Public Health and Medical Services in Japan

In this study, we have divided Japanese history from the start of the Meiji Era (1868~1912) into 5 phases, from the two points of view of public health challenges and the main initiatives to combat them. There are, however, several schools of thought as to how these classifications should be made. Here we will introduce four of the main school of thoughts.

(1) Divisions According to Demographic Transitions

This system uses a demographic approach, making divisions according to changes in the birth and mortality rates. Ato (2000) divides Japanese history into three phases, high fertility-high mortality (~1870); high fertility-low mortality (1870~1960); and low fertility—low mortality (1960~present).

(2) Divisions According to Disease Prevalences⁹

This system uses the main causes of death to set the divisions. This gives us four phases: the early Meiji Era of “acute infectious diseases”

(cholera, smallpox, dysentery, etc.); the phase from late Meiji until the end of the Second World War, of “chronic infectious diseases” (tuberculosis, leprosy, etc.); the phase of confusion immediately after the end of war of “acute infectious diseases”; and lastly the phase of malignant neoplasms and lifestyle-related diseases (formerly called “adult diseases”).

(3) Divisions According to Public Health Administration

The book “Fifty Years History of the Ministry of Health and Welfare,” published in 1988, divides Japanese history from the start of the Meiji Era into the following phases: ① pre-Ministry of Health and Welfare (1868~1937); ② establishment of Ministry of Health and Welfare and wartime public health administration (1938~1945); ③ public health administration during the post-war reconstruction (1945~1954); ④ public health administration during a period of high economic growth (1955~1973); ⑤ public health administration in the time of the aging society (1974~1987).

Table 1-2 Health Transitions and the Corresponding Systems

Health transition	Stage 1 Infectious diseases	Stage 2 Chronic conditions	Stage 3 Degenerative diseases of the elderly
Corresponding system	Public health policies (paid for by taxes)	Health insurance system	System integrated medical and social welfare services, maintaining the independence of elderly clients
Service providers	(mainly doctors in private practice)	Hospital centered/medical clinics and institutions	From medical clinics and institutions to nursing homes and home-based care

Source: Compiled by the author on the basis of data from Hiroi, Yoshinori (1999)

⁹ Produced as a synthesis of National Institute of Population and Social Security Research (2002), and Ministry of Health and Welfare Medical Services Division (1976), pre-war from Suzuki and Hisamichi ed. (2003) and Murakami (1996), post-war from Health and Welfare Statistics Association (2002, 2003).

(4) Divisions According to Health Transitions¹⁰

The concept of “health transitions” is one that has recently come into use in the fields of public health and international health. It refers to a holistic

and dynamic approach to epidemiological transitions in concert with socioeconomic transitions in terms of demographic, employment and industrial structures. In essence, there are three stages as shown in Table 1-2.

¹⁰ Hiroi, Yoshinori (1999) “*Jinko Koureika to Iryo · Fukushi Seisaku* [Medical Services and Welfare for Aging]” Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], pp. 919-924, Baifukan Co., Ltd.

Year Table. History of Public Health and Medical Services in Japan

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1850's	58 Signing of Japan-U.S. Commercial Treaty 59 Publishing of Darwin's "Origin of Species" and Nightingale's "Notes on Nursing"			
1860's	61 Outbreak of American Civil War 69 Opening of Suez Canal	68 Meiji Restoration	68 Introduction of Western medicine	
1870's		71 Abolition of fiefs and establishment of prefectures 72 Promulgation of the Education Ordinance 76 Collection of mortality statistics commenced by Ministry of Home Affairs Health Bureau 77 Seinan War	70 Promulgation of Regulations Regarding Patent Medicines 72 Establishment of Health Bureau within Ministry of Education 74 Comprehensive Medical Code enacted 74 System of registration of practicing medical practitioners commenced 74 Under the Comprehensive Medical Code, midwifery qualifications regulated and licensing introduced 75 Establishment of Health Bureau within Ministry of Home Affairs (administration of public health transferred from Ministry of Education) 75 Establishment of Pharmaceutical Refinery at Tokyo Kaisei School 77 Introduction of Malthusian doctrine (based on Malthus' "Essay on Population" 1798) 79 Health Bureaus established in each prefecture 79 Provisional cholera prevention regulations	73 Establishment of Daiichi University Medical School (now Tokyo University) 78 Medical practitioners forbidden to run pharmacies by Tokyo Prefecture 79 System of public elections for Municipal Public Health Committees commenced
1880's	82 Koch identifies tuberculosis bacterium 82 Koch identifies cholera bacterium	80 Enactment of Old Penal Code 84 Reliability of birth and death records improved by "Regulations regarding Gravestones and Burial" 85 Cabinet System of government commenced 89 Promulgation of Greater Japan Constitution	80 Enactment of Communicable Disease Prevention Regulations 81 Establishment of First private postnatal training school (Koansha) 82 Enactment of Penal Code (abortion made a crime) 83 Formation of Greater Japan Private Public Health Association 85 Enactment of Vaccination Regulations 86 Proclamation of the Japanese Pharmacopoeia 86 Issuance of Street Cleaning Ordinances 89 Enactment of Pharmaceutical Regulations	80 Each prefecture ordered to submit annual reports on public health matters and statistics 87 Work commenced on water supply system in Yokohama (first piped water supply in Japan)

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1890's	<p>90 Commencement of serotherapy</p> <p>95 Roentgen discovers X-rays</p> <p>98 Kiyoshi Shiga identifies the dysentery bacillus</p> <p>99 Establishment of International Nursing Federation</p>	<p>99 Commencement of collection of population dynamic statistics (Civil Registration Office, Health Bureau, and 3 types of statistics)</p>	<p>90 Enactment of Water works Law (obsolete law)</p> <p>93 Establishment of Japan Pharmaceutical Association</p> <p>95 Posts of School Health Advisors and Supervisors created</p> <p>97 Enactment of Communicable Disease Prevention Law (Health and Sanitation Groups set up)</p> <p>98 Introduction of School Doctor system</p> <p>99 First Nationwide Survey of Pulmonary Tuberculosis Volunteers</p>	<p>90 Establishment of Nisseki (Japanese Red Cross) Nursing Training School</p> <p>92 Commencement of District Nursing based at the Doshisha Hospital</p> <p>93 (~1945) Administration of regional public health transferred to Police Department</p> <p>95 Laying of water supply system in city of Osaka</p> <p>97 Commencement of protest movement by farmers adversely affected by Ashio copper mines</p>
1900's	<p>01 Reed identifies the yellow fever virus</p> <p>05 First Russian Revolution</p> <p>05 Discovery of the syphilis pathogen</p>	<p>00 Enactment of Industrial Association Law</p> <p>04-05 Outbreak of the Russo-Japanese War</p>	<p>00 Enactment of Waste Management Law (obsolete law), Sewerage Law and Law for Custody of Mental Health</p> <p>00 First Hansen's disease survey conducted</p> <p>00 Introduction of School Nurse System</p> <p>02 Foundation of Tokyo School of Pharmacy and Tokyo Women's Pharmacy College</p> <p>04 Tuberculosis Control Law enacted</p> <p>04 Production of first ampoules in Japan</p> <p>06 Enactment of the Medical Practitioners' Law and the Dental Practitioners' Law (establishment of modern system of accreditation)</p> <p>07 Leprosy Prevention Law enacted</p> <p>09 Formation of Greater Japan Nursing Association</p>	<p>00 Tokyo Nursing Regulations enacted</p> <p>06 Poor rice harvest in Tohoku Region</p> <p>08 School nurses stationed in Gifu City</p>
1910's	<p>14 Outbreak of First World War</p>	<p>12~ Taisho Period</p> <p>13~ Taisho Democracy</p> <p>14-17 First World War</p> <p>18 Rice Riots</p> <p>18 Influenza pandemic</p>	<p>11 Appearance of fee-for-service medical clinics in Tokyo</p> <p>12 Establishment of Taisho Pharmaceutical Co. Ltd</p> <p>13 Publication of "Female Mill Hands and Tuberculosis" by Osamu Ishihara</p> <p>13 Establishment of Japan Anti-Tuberculosis Association (JATA)</p> <p>14 Establishment of Temporary Pharmaceutical Sections in the Tokyo and Osaka Public Health Testing Laboratories</p> <p>15 Enactment of Nursing Regulations</p> <p>16 Establishment of Health and Sanitation Research Council</p> <p>16 Establishment of School Health Division of Ministry of Education</p> <p>16 Enactment of Factory Law</p> <p>18 Survey of Rural Health</p> <p>19 Passage of Mental Health Law, Tuberculosis Control Law, and Trachoma Prevention Law</p> <p>19 Enactment of School Infectious Disease Regulations</p>	<p>15 Kyoto, Yokohama and Nagoya directed to establish tuberculosis sanitariums</p> <p>18 Commencement of Osaka District Committee System</p> <p>18 Appointment of District Nursing Association Visiting Midwives in Tokyo Prefecture</p>

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1920's	28 Establishment of the International Union for the Scientific Study of Population (IUSSP) 29 Fleming discovers penicillin	20 First National Census (commencement of collection of static population statistics) 20 Japan joins League of Nations 23 Kanto Daishinsai (Great Kanto Earthquake) 26 Showa Period begins 29 World Panic	20 Enactment of School Doctor Regulations, Student and Child Health Check Regulations 22 Margaret Sanger visits Japan →Impetus to family planning movement 22 Enactment of Health Insurance Law 23 Establishment of Yamanouchi Yakuhin Shoukai 24 "Ogino Theory" (rhythm method of contraception) published 25 Enactment of Pharmacist Law 25 Establishment of Japan Public Health Association 26 Guidelines for Child Health published 27 Enactment of Venereal Disease Prevention Law 27 Formation of Japan Midwives Association 29 Formation of Japan Nursing Association	20 Enactment of Osaka Factory Regulations (Pollution Regulations) 23 Establishment of Child Health Centers in Tokyo, appointment of district nurses, commencement of home-based care activities 23 Saiseikai, commencement of nursing home visits to accident victims 24 Osaka City, appointment of district nurses 27 Establishment of Public Health Nursing Division at St Luke's Hospital, commencement of district nursing visits 28 Commencement of social work nurse training at Nisseki (Japan Red Cross)
1930's	33 Nazi Government takes power in Germany 39 Outbreak of Second World War	30 Showa Crash 37 Manchurian Incident 38 Enactment of National Mobilization Law	30 Ministry of Home Affairs recommends domestic manufacture of pharmaceuticals 34 Imperial Gift Foundation Aiiiku Association formed 37 Health Center Law enacted (47 centers established) 37 Tuberculosis Control Law revised 38 Enactment of Maternal and Child Protection Law 38 Enactment of National Health Insurance Law 38 Establishment Ministry of Health and Welfare 38 Establishment of Public Health Hospital	35 Establishment of Metropolitan Health Center (Kyohashi) 38 Establishment of Rural Health Center (Tokorozawa)
1940's		40 Formation of Taisei Yokusankai (Imperial Rule Assistance Association) neighborhood community association system 41~ Commencement of War in the Pacific	40 Enactment of National Physical Strength Law 40 Public Health Nurse Regulations announced 40~ The term "family planning" replaced "regulation of the numbers of children" 41 Enactment of Eugenic Protection Law 41 Enactment of Public Health Nurse Regulations 41 Japan Public Health Nurse Association formed 42 Commencement of Pregnant Mother's Handbook system 42 Enactment of Medical Services Law 42 BCG vaccination commences for tuberculosis 43 National health insurance cover extended to 95% of municipalities. "First Universal Health Coverage Era"	42 Transfer of public health administration from Police Department to Ministry of Home Affairs

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1940's	45 United Nations formed	45 Second World War ends	44 Domestic production of penicillin commences	
	45 Establishment of International Monetary Fund (IMF) and World Bank	45 Occupation under General Headquarters (GHQ) of the Allied Powers (~ April 52) 45 Women gain the vote 45 First Agrarian Reform		
	45 Clinical use of penicillin as an antimicrobial commenced			
	46 United Nations Population Division established	46 Receipt of Licensed Agency for Relief in Asia (LARA) material (~52)	46 Establishment of Sanitation Committees in each municipality nationwide (mouse and insect eradication program) (10,000 community groups and eradication groups formed nationwide), use of DDT	
	47 US announces Marshall Plan	47 Local Government Law enacted 47-49 First Baby Boom	47 Community Health Law passed 47 Establishment of Children's Bureau of Ministry of Health and Welfare 47 Maternal and Child Health Handbook replaces Pregnant Mother's Handbook 47 Law for Public Health Nurses, Midwives and Nurses passed 47 Revision of Community Health Law 47 Child Welfare Law passed 47 Enactment of Food Hygiene Law, Labour Standards Law, and Child Welfare Law 47 All administration of public health transferred to prefectural Public Health Bureaus 47 Enactment of Disease Notification Regulations 47 School Instruction renamed as Health Education	47 Prefectures ordered to establish Public Health Bureaus (Jurisdiction over public health transferred from Police Departments to Public Health Centers)
	48 World Health Organization (WHO) established, Universal Declaration of Human Rights	48 New Civil Code promulgated	48 Enactment of Immunization Law 48 Enactment of Eugenic Protection Law 48 Enactment of Medical Practitioners Law, Dental Practitioners Law, and Law for Public Health Nurses, Midwives and Nurses simultaneously	48 Suginami Public Health Center established
49 North Atlantic Treaty Organization (NATO) formed	49 Livelihood Improvement Program commenced	49 Revision of Eugenic Protection Law (economic reasons for abortion recognized) 49 Representatives of American Pharmacists Association visit Japan. Decision to distribute imported streptomycin 49 First issue of "Maternal and Child Health Statistics of Japan"	49- Commencement of No Mosquitoes and Flies Program by regional public health organizations	
1950's	50 Colombo Plan commenced	50 United Nations Children's Fund (UNICEF) provides material assistance (~64)	50 Release of domestically produced streptomycin	50 Commencement of family planning model villages
	50 Commencement of Korean War		50 First National Examination for Class 1 Nursing Qualification held (8600 applicants), First National Examination for Public Health Nursing Qualification held, First National Examination for Nursing Midwifery Qualification held	
	51 San Francisco Peace Treaty signed, US-Japan Security Treaty signed	51 Japan joins the World Health Organization (WHO) 51 Lifestyle-related diseases (stroke, cancer, heart disease) become the top causes of death	51 Complete reform of Japan Anti-Tuberculosis Association (JATA) 51 Enactment of Quarantine Law 51 Establishment of Japan Public Health Cooperative	

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1950's	<p>52 International Planned Parenthood Federation (IPPF) founded in Bombay</p> <p>54 World Population Conference (specialist meeting jointly hosted by the United Nations (UN) and the International Union for the Scientific Study of Population (IUSSP)) held in Rome</p>	<p>52 Commencement of New Life Movement</p> <p>52 Peace Treaty with Japan takes effect (April)</p> <p>56 Japan joins the United Nations (UN) <Extent of water supply systems reaches 32.2%> <Number of abortions reaches a peak></p> <p>56 Economic White Paper "It's not post-war any more"</p>	<p>52 Abolition of controlled distribution of pharmaceuticals</p> <p>52 Commencement of Family Planning Worker System (commencement of recognized lectures)</p> <p>52 Revision of Eugenic Protection Law (paperwork simplified)</p> <p>52 Enactment of Nutrition Improvement Law</p> <p>53 Enactment of New Leprosy Prevention Law</p> <p>53 Establishment of Standing Committee on Population Problems within Ministry of Health and Welfare</p> <p>53 Establishment of Pharmaceutical Exporters Association</p> <p>54 Introduction of School Lunch Program</p> <p>54 Formation of Japan Family Planning Association (JFPA)</p> <p>54 Formation of Family Planning Federation of Japan</p> <p>55 Family Planning Workers allowed to sell contraceptive devices</p> <p>56 Enactment of Anti-prostitution Law</p> <p>58 Establishment of Maternal and Child Health Centers</p> <p>58 Establishment of School Health Law</p> <p>58 Tokyo University Medical School Department of Pharmacology becomes independent Pharmacology Faculty</p>	<p>54 "Reinforcement of guidance to pregnant women" directive issued</p> <p>56 Mass onset of Minamata Disease in Kumamoto</p> <p>56 Deaths from penicillin shock</p> <p>59 Tokyo Municipal Government "Regulations for the Prevention of Factory Pollution"</p>
1960's	<p>60 Formation of the OECD</p> <p>61 Formation of the DAC</p> <p>61 Announcement of "United Nations Development Decade"</p> <p>61 Commencement of the use of live polio vaccine in U.S.</p> <p>65 World Population Conference (Scientific conference, Belgrade)</p> <p>66 Establishment of the United Nations Development Programme (UNDP)</p> <p>66 Establishment of Asian Development Bank</p>	<p>60 Ikeda Cabinet announces "National Income Doubling Program" <Institutional births exceed half of all births> <Water supply penetration rate reaches 53.4%></p> <p>64 Japan joins OECD (joins ranks of developed nations)</p> <p>64 Tokyo Olympics</p>	<p>60 Promulgation of New Pharmaceutical Affairs Law and New Pharmacist Law</p> <p>60 Classification of Public Health Centers into 5 types</p> <p>61 Universal health insurance coverage achieved</p> <p>61 Commencement of 3 year old health checks and neonatal home visits</p> <p>61 Polio vaccine program (administered to 350,000 simultaneously)</p> <p>64 Revision of Immunization Vaccination Law (change to live polio vaccine)</p> <p>64 Introduction of system of designated emergency provider medical institution</p> <p>65 Revision of Mental Health Law</p> <p>65 Enactment of Environment Protection Association Law</p> <p>65 Maternal and Child Health Law passed</p> <p>65 Establishment of National Children's Medical Center</p>	<p>61 Itai-itai Disease lawsuit launched</p> <p>62 Thalidomide Incident</p> <p>62 Voluntary withdrawal of thalidomide-type hypnotics</p> <p>65 Thalidomide lawsuit launched</p> <p>65 Farmer's disease recognized as a social problem</p> <p>66 Toxic effects of agricultural chemical recognized as a problem</p>

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1960's	67 Formation of European Community (EC)	68 Japan becomes the second largest economy among the free nations	67 Promulgation of Basic Law for Environmental Pollution Control 67 Establishment of Central Pollution Control Committee 67 Investment in pharmaceutical manufacturing industry liberalized by 50% 68 Introduction of Maternity and Child Health Promoter System 69 Revision of three Environmental Pollution Laws	67 Asahi Lawsuit, rejected by Supreme Court 68 Minamata Disease recognized as pollution-related disease 69 Free medical care for the elderly in Tokyo Municipality 69 Kanemi Oil Disease Lawsuit launched
1970's	70 Second United Nations (UN) Development Decade 71 "Nixon Shock" 74 World Food Conference 75 Vietnam War ends 76 First Association of Southeast Asian Nations (ASEAN) Leaders' Summit 78 International Conference on Primary Health Care hosted by World Health Organization (WHO) and United Nations Children's Fund (UNICEF) in Alma Ata (Alma Ata Declaration)	70 Japanese population exceeds 100 million 70 Proportion of elderly exceeds 7% (heading for aging society) 70 Extent of water supply systems reaches 80.8% 70 Japan hosts World Expo 72 Okinawa reverts to Japanese control 72 Japan-China relations normalized 73 "First Year of Welfare" 73 First Oil Shock 78 Second Oil Shock	70 Establishment of Environmental Pollution Control Committee 71 DDT banned 71 Establishment of Ministry of the Environment 72 Jichi Medical School founded 72 Industrial Safety and Health Law 73 Free medical care for the elderly 74 Establishment of Research Program for the Treatment of Specified Pediatric Chronic Diseases 75 Introduction of Triple Antigen Vaccine 75 Investment in pharmaceutical manufacturing industry liberalized by 100% 76 Revision of Preventive Vaccination Law 76 Formation of Emergency Medicine Society 77 Intrauterine Devices (IUD) licensed	70 Petrochemical smog detected in Tokyo 71 SMON (Subacute Myelo-Optico-Neuropathy) (cloiquinol toxicity) lawsuit launched 71 Formation of Tokyo Municipality Rubbish War Control Group 78 National Public Health Nurses transferred to municipalities
1980's	80 UN Development Strategy announced for Third UN Development Decade 80 World Health Organization (WHO) announces eradication of smallpox 81 International Year of the Disabled	<80 Extent of water supply systems reaches 91.5%>	81 Commencement of Infectious Disease Surveillance Program	

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1980's	<p>86 WHO Ottawa Charter</p> <p>88 WHO announces plan to eradicate polio</p> <p>89 Tiananmin Square Incident</p> <p>89 Berlin Wall comes down</p>	<p>82 Cancer becomes the number one cause of death</p> <p>84 Average life expectancy becomes highest in the world (males 74.2 years, females 79.8 years)</p> <p>86 Equal Opportunity Law enacted</p> <p>89 "1.57 Shock"*</p>	<p>82 Law for Health and Medical Services for the Elderly passed (enacted '83) (Health Bureau for the Elderly)</p> <p>85 Establishment of Committee for Public Health and Medical Services in Remote Regions</p> <p>86 Formation of AIDS Specialist Group</p> <p>87 Commencement of Tuberculosis/Infectious Disease Surveillance Program</p> <p>88 Establishment of Health and Welfare Section for the Elderly within Ministerial Secretariat</p> <p>88 Complete overhaul of Drug Pricing Standards</p> <p>89 Enactment of AIDS Prevention Law</p> <p>89 Promotion of Health and Welfare of the Elderly 10 Year Plan announced</p>	<p>85 Medical Services Law revised, directing prefectures to conduct Medical Services Planning, and establish Health Services Regions</p>
1990's	<p>90 UNDP publishes Human Development Report</p> <p>90 World Summit for Children held in New York</p> <p>91 Gulf Crisis ends</p> <p>92 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro (June)</p> <p>92 Environmental Summit</p> <p>93 UN Human Rights Conference held in Vienna</p> <p>93 World AIDS Conference</p> <p>94 International Conference on Population and Development held in Cairo</p> <p>95 Social Development Summit held in Copenhagen (March)</p> <p>95 Fourth World Conference on Women held in Beijing (September)</p> <p>96 Development Assistance Committee (DAC) announces new development strategy (May)</p>	<p>92 Enactment of Maternity Leave Law</p> <p>94 Announcement of 21st Century Welfare Vision</p> <p>94 Proportion of elderly reaches 14% (towards aging society)</p> <p>95 Great Hanshin-Awaji Earthquake</p>	<p>90 Revision of 8 Welfare Laws</p> <p>90 Commencement of Gold Plan</p> <p>91 Introduction of Emergency paramedic system</p> <p>92 Health and Welfare Section for the Elderly becomes Health and Welfare Bureau for the Elderly</p> <p>92 Second revision to Medical Services Law, pharmacists clearly identified as providers of medical services</p> <p>93 Partial revision of Law concerning Public Health Nurses, Nurse Midwives and Nurses (birth of gender-neutral public health nurses)</p> <p>94 Enactment of Community Health Law</p> <p>94 Formulation of Angel Plan</p> <p>94 Formulation of New Golden Plan</p> <p>94 Revision of Maternal and Child Health Law</p> <p>95 Formulation of Plan for People with Disabilities</p> <p>95 Rate of separation of prescribing and dispensing (rate of prescriptions filled by pharmacies) exceeds 20%)</p> <p>96 Eugenic Protection Law revised, becomes Mother's Body Protection Law</p> <p>96 Leprosy Prevention Law repealed</p>	<p>93 Completion of elderly health and welfare planning by municipalities</p> <p>94 Maternal and child health planning by municipalities made mandatory</p>

* After the Second Baby Boom peaked in 1973, the birth rate began to fall. In June 1990, it was announced that the 1989 population dynamic statistics showed the birth rate had declined to 1.57. The increased burden and decreased vitality associated with the aging society led to the coining of the term "1.57 Shock".

Decade	World events	Events in Japanese society	Nationwide changes in public health and medical services	Regional changes in public health and medical services
1990's	96 Asia-Pacific Economic Co-operation (APEC) Jakarta Meeting → human resource development			
	96 Lyon Summit (Proposal for Global Welfare Initiatives)			
	97 Asian Currency and Economic Crisis	97 Long-term Care Insurance Law passed (enacted in '00)	97 Community Health Law fully implemented (administration of public health services handed over to municipalities)	
	97 Number infected with HIV/AIDS estimated at 30,600,000			
	98 Birmingham Summit (Global Parasitic Disease Control Initiative announced)	98 Non-Profit Organization (NPO) Law passed		
	98 Second Tokyo International Conference on African Development (TICADII, October)			
	99 World Summit for Children	99 Regionalization Law passed	99 Infectious Disease Law implemented	
99 World population exceeds 6 billion	<99 Extent of sewage systems reaches 60%>	99 Low-dose oral contraceptive (Pill), copper-impregnated IUD, and female condom licensed		
2000's	00 21st Century Summit	<00 Extent of water supply systems reaches 96.6%>	00 "Kenko Nihon 21" (Healthy Japan 21) Campaign announced	00 Long-term Care Insurance Law enacted
	00 Kyushu & Okinawa Summit (Okinawa Infectious Diseases Initiative announced)		00 "Sukoyaka Oyako 21" (Healthy Family) Campaign launched	
	01 United Nations (UN) Special Session on HIV/AIDS (April)			
	02 World Summit on Sustainable Development (WSSD)			

Chapter 2

Present State of Public Health and Medical Services

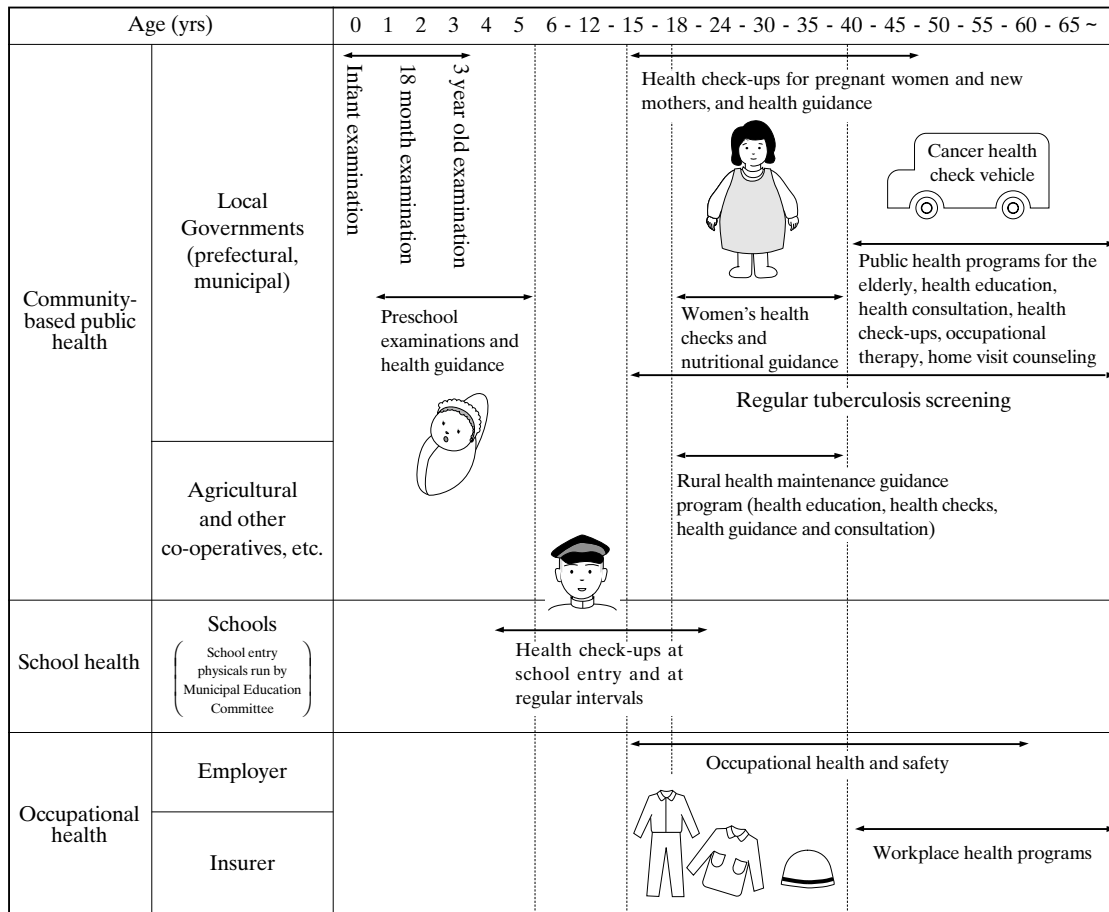
1. Overview

The Japanese public health and medical system is a comprehensive system that aims to assist people, over the entire lifecycle from birth to death, with all problems that might cause them anxiety, including disease, injury, disability, unemployment, old age and the need for care¹. Such a system

requires the provision of public health and medical services, including prevention, diagnosis, treatment and rehabilitation, within reach of where people live².

Lifestyle-related diseases now form a major health challenge in Japan, so the emphasis in prevention has moved from early detection and

Figure 2-1 Health Services in the Life Cycle



Source: Nakamura, Yoshio (1998) p. 92

¹ Ministry of Health and Welfare (1999) *Heisei 11 nen ban Kosei Hakusho* [Annual Report on Health and Welfare 1999], Gyosei. p. 43

² Nakamura, Yoshio (1998) *Kosei Gyosei* [Welfare Administration], Gyosei.

treatment of disease of secondary prevention, to prevention of disease and health promotion of primary prevention. As shown in Figure 2-1, the main preventive activities can be divided into school health, upon school entry, occupational health, upon entry into the workforce, and community-based health, providing health education, health checks, and health guidance. School health programs are run by the Ministry of Education, in collaboration with the Ministry of Health, Labour and Welfare.

As a primary prevention program, the Ministry of Health, Labour and Welfare has conducted a "National Health Promotion Movement in the 21st Century (Healthy Japan 21)" since 2000. With the agreement of the entire population, in July 2002 the "Health Promotion Law" was passed, setting the legislative framework for a strong nationwide campaign of disease prevention and health promotion³.

Medical technologies are advancing in order to provide the accurate diagnosis of diseases and injuries, and allow the appropriate treatment to commence in the shortest possible time.

Due to changes in the pattern of disease resulting from the aging of the population and an increased level of chronic disease, the system of medical service provision, and the way treatment is given will need to be reformed. Initiatives have been launched in response to a number of new challenges, including improvements in the therapeutic environment, increased uptake of domiciliary treatment, the provision of terminal care, providing informed consent and involving them in therapeutic decisions, and closer collaboration with welfare services.

2. The Service Delivery System

2-1 Public Health Services

The present system of public health service provision was basically regulated by the 1947

"Revised Public Health Center Law." As the move towards decentralization gained speed during the 1990's, and in response to the aging society, in 1994 the Public Health Center Law was completely revised and renamed the "Community Health Law." This set up a new community-based public health system, with the local municipality placed as the main service provider, closer to the community (complete implementation by 1997).

The main revisions in the Community Health Law were: the municipality became the centralized provider of maternal and child health services; health and welfare services for the elderly, and other frequently utilized services; the "Municipal Public Health Center" became the base of delivery for public health services in the community; the areas of responsibility of prefecture's public health centers broadened, and they functioned as the broad-based, specialized and technical base of public health; at the same time, the Maternal and Child Health Law, Child Welfare Law, and Nutrition Improvement Law were revised, transferring these authorities from prefecture to municipality control (see Chapter 8). As the result, the responsibility, financial resources, and provision of public health and welfare services were all unified under the municipalities, placing them closer to the community. With these sweeping reforms, public health and welfare services were provided in a coordinated fashion, where they had previously been disjointed.

Following the above reforms local government bodies became the main providers of public health services, and also became responsible for planning and budgeting in this area. Outsourcing of some services, such as to local medical practitioners and clinics, has become common, so that clients can receive services, such as health check-up and vaccination, at a time and location convenient to them. Health promotion services are also available at health promotion centers and private members-only health centers.

³ Ministry of Health, Labour and Welfare ed. (2002) *Heisei 14 nen ban Kousei Rodo Hakusho* [Annual Report on Health, Labour and Welfare 2002-2003] Gyosei. pp. 131-132

2-2 Medical Services

Medical services in Japan are regulated by the “Medical Service Law,” promulgated in 1948. This Law has subsequently undergone four revisions, in response to such factors as the aging society, changes in the pattern of disease, and medical advances. Following the first revisions to the Medical Service Law in 1985, prefectures became responsible for planning and conducting medical services in each prefecture according to a “Medical Service Plan.” Each prefecture was also directed to set up secondary and tertiary medical regions.

In general, medical services are provided at medical institutions such as hospitals and clinics. The second revision to the Medical Services Law in 1992 extended the definition of the site of provision of medical care to include the residence of the person receiving care. The Japanese system of medical service provision is essentially one of free practice, meaning that medical institutions can be operated by the nation, local government, public corporations, healthcare corporations, and individuals. Practicing medicine for profit is forbidden, however, so companies are unable to set up medical institutions. Instead, a unique system of the healthcare corporation was established for this purpose.

2-3 Allied Health Services

With recent advances in medical science, the need for efficient use of the medical budget, and the diversification of the needs of the population, medical institutions are outsourcing many allied health services, such as pathology services and hospitalized patient meals, to outside specialists. “Allied health services” includes various services closely related to medicine for effective and efficient services.

In a 1994 survey of hospitals, outsourcing was used for 95.9% of bedding, 92.7% of pathological investigations, 73.2% of hospital cleaning, 42.7% of

maintenance of home medical equipment, 26.7% of hospitalized patient meals, and 11.4% of medical equipment sterilization. To ensure the quality of these services, they may only be outsourced to firms that meet the standards set out in the “Law Regarding Medical Technologist, etc.” (1970) and other statutes⁴.

3. Major Public Health Services

The framework of public health services will be examined in detail in Chapter 8, so here we will provide an overview of the major services.

3.1 Health Promotion

To maintain a healthy body, each individual needs to put in a certain amount of effort, such as keeping well-regulated habits, getting sufficient sleep, eating a balanced diet, and getting an appropriate amount of exercise. The Ministry of Health and Welfare began the “First-Phase Measures for National Health Promotion” in 1978. This campaign comprised the following: providing a life-long program of prevention and health checks through the addition of health care programs for the elderly to the existing programs of health checks for pregnant women, new mothers and infants, and housewives; promotion of municipal public health centers and other centers to host health promotion activities; and promotion to raise health awareness activities. The “Second-Phase Measures for National Health Promotion (Active 80’s Health Plan)” was launched in 1988, promoting the concept of disease prevention and health promotion through lifestyle improvement. Additional health promotion facilities were established, and personnel (e.g. fitness instructors) trained. The year 2000 saw the launch of the “National Health Promotion in the 21st Century (Healthy Japan 21).” Features of this campaign include an emphasis on quality of life, not just prolonging life-time; promotion of health

⁴ Nakamura, Yoshio (1998) *Kousei Gyosei* [Welfare Administration], Gyosei.

throughout the life cycle; an emphasis on individual choice; and the introduction of goal-oriented management strategies⁵.

Passed in July 2002, the "Health Promotion Law" sets goals and basic policy for the entire nation, directs local governments to formulate health promotion plan in response to the local circumstances, and sets common guidelines for occupational, community-based and school-based health checks⁶. In particular, this law directed the management of public facilities where smoking is permitted to take the necessary steps to prevent "passive smoking."

A further Japanese unique initiative has been in the area of dental health promotion. It is often said that "your mouth is the barometer of your health," and if your teeth become unhealthy the rest of the body becomes unhealthy. Based on this concept is the "8020 Campaign," with the stated aim of keeping at least 20 of one's own teeth upon reaching the age of 80. Along with an educational program to increase dental awareness, this campaign promotes tooth brushing to primary school children, and provides dental check-ups and advice to community residents.

3-2 Maternal and Child Health Services

Maternal and child health services in Japan are regulated by the "Maternal and Child Health Law." At the time of the comprehensive overhaul of community-based health services in 1994, maternal and child health services were also re-examined, and came under local government control from 1997. Maternal and child health check-ups are important for the early detection and appropriate treatment of conditions such as pre-eclampsia, disabilities and abnormalities. Another important aid for the health management of mother and child is the Maternal and Child Health (MCH)

Handbook system. On registration of their pregnancy with their local municipality, each woman is issued with MCH Handbook, which is subsequently used to record all important details of pregnancy, delivery and childraising. From 1992, the right to issue MCH Handbooks was transferred from prefectural government to the municipalities, and each municipal government now issues its own characteristic version.

Other major services in the field of maternal and child health include free complete check-up at a medical institution, two during pregnancy, one early and one later in the pregnancy, and two during infancy. Pediatric health checks are also provided by the municipality at 18 months and 3 years of age. Health guidance is also provided regarding pregnancy, delivery and child raising, on a group, individual or home visit basis.

3-3 Health Services to the Middle-aged and Elderly

Disease prevention and health management during the prime of life are extremely important for the maintenance of health in later life. For this reason, under the system of health and medical services for the elderly, based on the Law for Health and Medical Services for the Elderly, municipalities conduct public health programs aimed at community residents aged 40 years and over. These programs include the issue of health cards, health education, health advice, medical check-ups, rehabilitation, and home-visit consultations.

In accordance with national standards that have been set for public health programs, municipalities formulate and put into practice a "Plan for Elderly Health and Welfare," based on demographics of the local community and the available facilities.

⁵ Health and Welfare Statistics Association (2002) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9.

⁶ Ministry of Health, Labour and Welfare ed. (2002) *Heisei 14 nen ban Kousei Rodo Hakusho* [Annual Report on Health, Labour and Welfare 2002-2003], Gyosei. pp. 131-132

4. Medical Facilities

4-1 Overview

Medical facilities are regulated by the Medical Services Law and the Law for Health and Medical Services for the Elderly. In Japan, the principal medical facilities are hospitals, clinics, midwifery home, and “Rojin Hoken Shisetsu (Health Care Facilities for the Elderly).” A hospital is an institution with 20 or more beds, whereas clinics have up to 19 beds, and are further divided into general medical clinics and dental clinics. A midwifery home is the

place where a midwife practices.

Almost all hospitals and clinics in Japan, whether public or private, are run within the framework of the public medical insurance system. Medical fees are standardized for all services, including diagnosis, medications, treatments, operations, admissions, nursing and dietary treatments. Medical costs are therefore the same for the same service at any facilities. The cost of hospital beds varies according to their ranking, however, and if a patient chooses a higher ranked bed than that determined by their

Table 2-1 Medical Facilities by Type

Total number	165,451
■ Hospital	9,266
○ Psychiatric hospital	1,058
○ Tuberculosis sanitarium	3
○ General hospital	8,205
• Hospitals with long-term care wards	3,167
■ Medical clinics	92,824
○ With admission facilities	17,853
• Medical clinics with long term care wards	
■ General hospital	2,508
○ With no admission beds	74,971
■ Dental clinics	63,361
○ With admission beds	46
○ With no admission beds	63,315

N.B. As of October 1st, 2000

Source: Ministry of Health, Labour and Welfare

Table 2-2 Hospital Bed Numbers by Type

Total number	1,864,178
■ Hospital	1,647,253
○ Psychiatric beds	358,153
○ Infectious disease beds	2,396
○ Tuberculosis beds	22,631
○ General beds	1,264,073
• Long-term care beds	241,160
○ General hospital	1,387,779
■ Medical clinics	216,755
• Long-term care beds	22,786
■ Dental clinics	170

N.B. As of October 1st, 2000

Source: Ministry of Health, Labour and Welfare

Table 2-3 Number of Institutions and Beds by Operator

	Number of facilities						Number of beds			
	Hospitals		Medical clinics		Dental clinics		Hospitals		Medical clinics	
	Number	% total	Number	% total	Number	% total	Number	% total	Number	% total
Total number	9,266	100.0	92,824	100.0	63,361	100.0	1,647,253	100.0	216,755	100.0
National Government	359	3.9	581	0.6	1	0.0	144,649	8.8	2,344	1.1
Public organization	1,373	14.8	4,237	4.6	331	0.5	356,100	21.6	4,024	1.9
Social insurance organization	131	1.4	840	0.9	17	0.0	38,522	2.3	38	0.0
Healthcare corporation	5,387	58.1	24,031	25.9	7,310	11.5	795,089	48.3	96,953	44.7
Individual	1,173	12.7	53,646	57.8	55,378	87.4	101,620	6.2	111,110	51.3
Other	843	9.1	9,489	10.2	324	0.5	211,273	12.8	2,286	1.1

N.B. As of October 1st, 2000

Source: Ministry of Health, Labour and Welfare

insurance coverage, they are liable for the difference in cost.

4-2 Facilities and Beds

As of October 1st, 2000, there were 165,451 medical facilities in all of Japan, and 1,864,178 beds (see Tables 2-1, 2-2). The most common operators of hospitals were healthcare corporations, running 53,387 (58.1%), whereas individuals are more likely to operate medical clinics, with 53,646 (57.8%), and dental clinics with 55,378 (87.4%) (see Table 2-3).

Hospitals account for 1,647,253 beds and general medical clinics for 216,755. Healthcare corporations are responsible for 48.3% of hospital beds (795,089), whereas individuals are responsible for 51.3% of medical clinic beds (111,110).

The number of beds per 100,000 population (hospital only) is 995.9, but there is a considerable

gap between prefectures, with Kochi the highest at 1,960.4, and Saitama the lowest at 683.3⁷.

4-3 Medical and Related Professional Employees

As of October 10th, 2000, the total number of medical and related professional employees was 1,640,000, including 167,000 doctors (137,000 full-time), 9,000 dentists (8,000 full-time), 41,000 pharmacists, 525,000 nurses, and 224,000 assistant nurses (see Table 2-4). There are 99.7 professional employees per 100 hospital beds, including 10.2 doctors, 0.5 dentists, 2.5 pharmacists, 31.9 nurses, and 13.6 assistant nurses⁸.

4-4 State of Equipment

Technical advances in the field of medical equipment have been remarkable in recent years,

Table 2-4 Number of Professional Employees per 100 Beds and per Facility

Total	Hospitals ^{*1}			Medical clinics ^{*2}		Dental clinics ^{*2}	
	No. of employees	Per 100 beds	Per facilities	No. of employees	Per facilities	No. of employees	Per facilities
Doctors	1,641,418.5	99.7	177.3	751,092.0	8.2	310,989.3	5.0
Full-time	167,365.8	10.2	18.1	116,921.8	1.3	115.7	0.0
Part-time	137,487	8.4	14.9	97,153	1.1	86	0.0
Dentists	29,878.8	1.8	3.2	19,768.8	0.2	29.7	0.0
Full-time	8,950.7	0.5	1.0	1,865.2	0.0	86,980.3	1.4
Part-time	7,507	0.5	0.8	1,066	0.0	77,639	1.2
Pharmacists	1,443.7	0.1	0.2	799.2	0.0	9,341.3	0.1
Public health nurses	41,071	2.5	4.4	9,673	0.1	942	0.0
Midwives	2,012	0.1	0.2	6,238	0.1	-	-
Nurses	17,584	1.1	1.9	3,793	0.0	-	-
Assistant nurses	524,578	31.9	56.7	86,772	0.9	604	0.0
	223,633	13.6	24.2	149,445	1.6	456	0.0

N.B. *1 As of October 1st, 2000

*2 As of October 1st, 1999

Includes part-time doctors. Part-time doctors and dentists were converted to full-time equivalents (the proportion of the normal working hours of full-time doctors and dentists at the same institution). Other professions were not converted to full-time equivalents.

Source: Ministry of Health, Labour and Welfare

⁷ Ministry of Health, Labour and Welfare ed. (2002) *Heisei 14 nen ban Kousei Rodo Hakusho* [Annual Report on Health, Labour and Welfare 2002-2003], Gyosei. pp. 131-132, p. 184

⁸ *ibid.* p. 188

Table 2-5 Diagnostic Equipment in Hospitals (Multiple Counts)

	No. of hospitals	Rate possession (%)	No. machines
No. hospitals	9,286		—
Upper gastrointestinal endoscope	6,775	73.0	20,870
Bronchial endoscope	3,830	41.2	9,182
Colonoscope	5,669	61.0	11,646
Digital radiography systems	1,195	12.9	2,082
Digital angiography systems	2,554	27.5	3,223
CT scanner for total body	6,613	71.2	7,361
RI diagnostic unit	1,036	11.2	1,319
MRI	2,622	28.2	2,938
Single Photon Emission Computerized Tomography (SPECT)	755	8.1	1,003
Bone densitometry systems	3,064	33.0	3,154
Microsurgery equipment	981	10.6	2,297
Intraaortic Balloon Pump (IABP) equipment	765	8.2	1,274
Hyperthermia equipment	224	2.4	291
Linear accelerator (liniac), betatron, microtron	625	6.7	724
Hemodialysis equipment	2,218	23.9	39,992

N.B. As of October 1st, 1999

Source: Ministry of Health, Labour and Welfare

with the development and uptake of new and sophisticated diagnostic and therapeutic equipment (see Table 2-5). For example, more than 70 percent of hospitals have CT (computerized tomography) scanners for a whole body, and nearly 30 percent have magnetic resonance imaging (MRI) scanners, the next generation in diagnostic imaging.

In recent years, hospitals have expanded their rehabilitation facilities. The greatest increase has been in day care centers for the aged, with considerable increases also seen in psychiatric day care and night care facilities, as well as occupational therapy departments and psychiatric occupational therapy departments.⁹

4-5 Inpatient and Outpatient Medical Care

The average number of inpatients in Japanese hospitals each day was 1,401,399 for the year 2000.

Of these, 1,057,606 occupied general medical beds, 333,712 psychiatric beds, and 10,036 tuberculosis beds. The number of patients occupying long term care beds has risen sharply in recent years; it was 215,448 in 2000, a 54.5% increase over the previous year. The average number of outpatients seen in Japanese hospitals each day was 1,810,990 for the year 2000, of which 1,768,619 were general medical hospitals.

The number of inpatients in Japanese medical clinics on September 30, 1999 was 90,735. The number of outpatients seen in medical clinics for the month of September 1999 was 88,418,023, whereas 24,475,107 outpatients were seen in dental clinics over the same period.

The overall bed occupancy rate was 85.2%, with the highest by specialty that of 93.1% for psychiatric beds, followed by 83.8% for general

⁹ *ibid.* p. 189

medical beds. The average hospital stays by specialty were 30.4 days for psychiatric patients, 96.2 days for tuberculosis patients, and 30.4 days for

general medical patients. The longest average hospital stay for general medical patients (excluding long term care patients) for any prefecture was 30.6

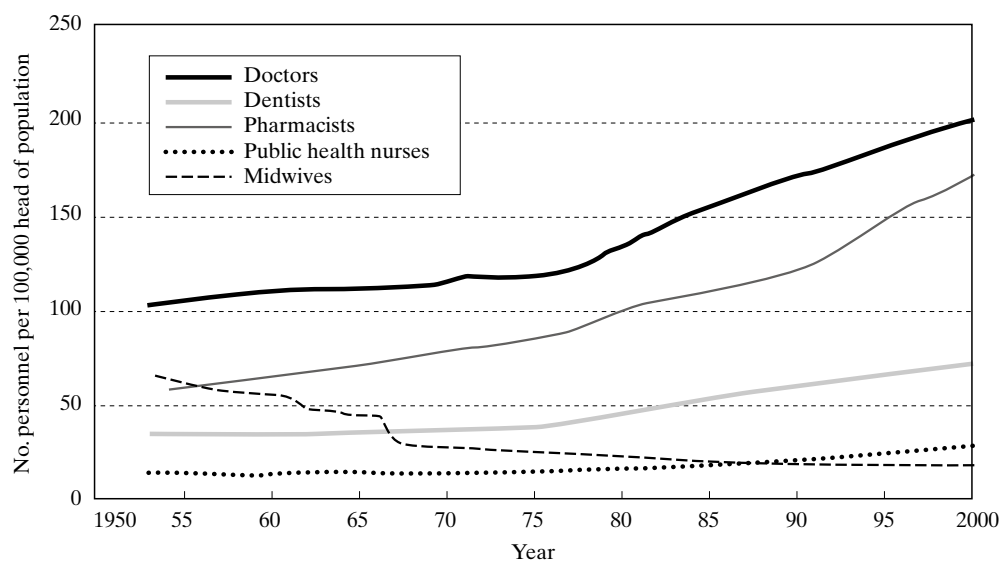
Figure 2-2 Summary of Education System for Medical and Allied Professional

	Compulsory education (9 years)				
Medical practitioner	Primary school (6 years)	Junior high school (3 years)	Senior high school (3 years)	University (6 years)	
Dentist	Primary school (6 years)	Junior high school (3 years)	Senior high school (3 years)	University (6 years)	
Pharmacist	Primary school (6 years)	Junior high school (3 years)	Senior high school (3 years)	University (4 years)	
Public health nurse /Midwife	Primary school (6 years)	Junior high school (3 years)	Senior high school (3 years)	University (4 years)	
				Junior college (3 years)	Specialist college/nursing academy (1 year)
				Specialist college/nursing academy (3 years)	Specialist college/nursing academy (1 year)
Nurse	Primary school (6 years)	Junior high school (3 years)	Senior high school (3 years)	University (4 years)	
				Junior college (3 years)	
				Specialist college/nursing academy (3 years)	
Assistant nurse	Primary school (6 years)	Junior high school (3 years)	Senior high school (3 years)		
				Specialist college/nursing academy (2 years)	

N.B. As of April 2004. There is a system whereby a nursing qualification can be obtained after becoming an assistant nurse, but this was omitted.

Source: Medical Professions Division, Health Policy Bureau, Ministry of Health, Labour and Welfare

Figure 2-3 Trends in the Medical Workforce



Source: Ministry of Health, Labour and Welfare

days for Saga, and the shortest 18.8 days for Nagano.¹⁰

4-6 Provision of Medical Services by National Institution

As of April 1st, 2002, the national institution administered by the Ministry of Health, Labour and Welfare comprise 5 national high-level medical centers (national centers), 65 national hospitals, 116 national sanitaria, and 13 leprosaria (Hansen's Disease sanitaria). A specialized network, the National Hospital Information Network System (HOSPnet), connects these institutions, the Ministry of Health, Labour and Welfare, and Regional Bureaus of Health and Welfare.

5. Medical Service Personnel

5-1 Overview

There is a high degree of specialization in providers of medical services, with more than 20 different professions and more likely to appear as the demand increases for further specialization. Almost all of these professions have a system of national certifications. As shown in Figure 2-2, medical service personnel undertake a course at a specialist training institution following graduation from senior high school. After graduation from the training institutions, candidates take a national qualification examination. On passing, they receive their license to practice and obtain their certification. Unlike many developing countries, in Japan public health nurses and midwives are highly ranked professionals who must complete a minimum of 4 years' further study after graduating from senior high school.

Medical service personnel need to undertake continuing education in order to keep up with the rapid rate of advancement in medical science. The

Japan Medical Association launched a system of continuing medical education for medical doctors in April 1989, and encourages its members to continue to learn and update their skills throughout their working life. The Ministry of Health, Labour and Welfare also supports continuing medical education by providing local medical centers for local doctors to attend educational activities. The expectation is that doctors training at these centers will collaborate with local public health facilities and medical institutions, leading to more efficient provision of medical services to the community¹¹. Continuing education for pharmacists is conducted in each occupational center and in each region by the Japan Pharmaceutical Association and other groups¹².

The number of medical service personnel in Japan rose sharply in the post-war period, in particular after the achievement of universal health insurance coverage. The numbers of medical doctors and nurses continue to rise (see Figure 2-3).

Table 2-6 shows a summary of the numbers of medical service personnel in Japan in the year 2000.

5-2 Medical Services Professionals

(1) Medical Practitioner

To become a medical practitioner, after graduating from senior high school one must complete a 6 year university medical course, and then pass a national qualification examination to obtain a license to practice medicine. After obtaining the national qualification, it is recommended that medical graduates take at least 2 years of clinical training at a university or designated hospitals, and in practice 9 out of 10 complete this clinical training. In recent years, the overspecialized system of medical training has undergone review. The emphasis has been shifted to primary care, with the aim of producing medical

¹⁰ *ibid.* p. 190

¹¹ *ibid.* p. 177

¹² *ibid.* p. 179

Table 2-6 Registered Health Service Providers and Ratio (per 100,000 population)

	Numbers	Ratio (per 100,000 population)
Medical practitioners	255,792	201.5
Dentists	90,857	71.6
Pharmacists	217,477	171.3
Public health nurses	36,781	29.0
Midwives	24,511	19.3
Nurses, assistant nurses	1,042,468	821.4

N.B. As of December 31st, 2000. Numbers are those employed in that profession, except for medical professionals, dentists and pharmacists.

Source: Ministry of Health, Labour and Welfare

Table 2-7 Medical Practitioners by Institution Type

	Numbers	Proportion of total (%)
Total	255,792	100.0
■ Employees of medical facilities	243,201	95.1
○ Hospital employees	154,588	60.4
○ Clinic employees	88,613	34.6
■ Employees of elderly care institutions	2,114	0.8
■ Employees other than medical institutions or elderly care institutions	8,154	3.2
■ Others	2,148	0.8
■ Indeterminate	175	0.1

N.B. As of December 31st, 2000. The term "medical facilities" refers to hospitals and clinics as defined in Clause 3 of the Medical Facilities Survey Regulations (1953 Ministry of Health and Welfare Directive No. 25). This excludes public health centers.

Source: Ministry of Health, Labour and Welfare

practitioners capable of treating patients in a holistic fashion. The postgraduate-2 year's clinical training will be made compulsory from April 2004.

As of the end of the year 2000, there were 255,792 medical practitioners in Japan. This corresponds to 201.5 doctors per 100,000 head of population, or 496 people per doctor. The number of doctors has risen steadily since the introduction of the present national examinations for medical practitioners in 1946¹³.

The overwhelming majority of medical practitioners, or 243,201 (95.1%), are employed by medical institutions (see Table 2-7). Of the medical practitioners working in medical institutions,

154,588 (60.4%) work in hospitals, and 88,613 (34.6%) work in clinics. The highest proportion of hospital medical personnel work in non-teaching hospitals (106,845, or 41.8%), although a considerable proportion do work in teaching hospitals (41,845, or 16.4%)¹⁴.

Considerable variation is seen between prefectures in the distribution of doctors working in medical institutions per 100,000 population with the highest in Tokyo (253.4), Kyoto (251.7) and Kochi (250.8), and the lowest in Saitama (117.3), Ibaragi (135.4) and Chiba (136.4). In general, the ratio of doctors to population tends to be higher in Western Japan and lower in the East and North¹⁵.

¹³ *ibid.* p. 170

¹⁴ *ibid.*

¹⁵ *ibid.* p. 171

(2) Dentists

To become a dental practitioner, after graduating from senior high school one must complete a 6 year university dental course, and then pass a national qualification examination to obtain a license to practice dentistry. To improve the skills of dental practitioners, a compulsory system of at least 1 year of clinical training after obtaining the national qualification will be introduced. Preparations are underway for the commencement of the dental clinical postgraduate training program in 2006, increasing the number of training institutions and upgrading the skills of the clinical supervisors¹⁶. The national examination for dentists is also undergoing a process of revision and improvement, and will include questions regarding medical ethics and social problems related to dental services.

As of the end of the year 2000, there were 90,857 dental practitioners in Japan. This corresponds to 71.6 dentists per 100,000 population, or 1,397 people per dentist¹⁷.

The overwhelming majority of dental practitioners, or 88,410 (97.3%), work in medical

facilities (see Table 2-8). Of these, the greatest proportion work in dental clinics, and most are in private practice¹⁸.

A large gap is seen between prefectures in the distribution of dentists working in medical facilities per 100,000 population with the highest in Tokyo (118.6), Tokushima (89.6) and Fukuoka (89.6), and the lowest in Fukui (43.3), Ishikawa (47.7) and Aomori (48.0)¹⁹.

(3) Pharmacists

To become a licensed pharmacist, after graduating from senior high school one must complete a 4 year university pharmacy course, and then pass a national pharmacy qualification examination. A compulsory year of work experience at a hospital or pharmacy after obtaining the national qualification was introduced in 1997. The Ministry of Health, Labour and Welfare is examining a proposal to increase the university pharmacy course to six years in response to advances in medical science and pharmaceutical development, and the proliferation of new pharmaceuticals²⁰.

Table 2-8 Number of Dental Practitioners by Institution

	Numbers	Proportion of total (%)
Total	90,857	100.0
■ Employees of medical facilities	88,410	97.3
○ Hospital employees	11,526	12.7
○ Clinic employees	76,884	84.6
■ Employees of elderly care institutions	6	0.0
■ Employees other than medical institutions or elderly care institutions	1,252	1.4
■ Others	1,137	1.3
■ Indeterminate	52	0.1

N.B. As of December 31st, 2000. The term "medical facilities" refers to hospitals and clinics as defined in Clause 3 of the Medical Facilities Survey Regulations (1953 Ministry of Health and Welfare Directive No. 25). This excludes public health centers.

Source: Ministry of Health, Labour and Welfare

¹⁶ *ibid.* p. 177

¹⁷ *ibid.* p. 171

¹⁸ *ibid.* p. 171

¹⁹ *ibid.* p. 172

²⁰ Ministry of Health, Labour and Welfare ed. (2002) *Heisei 14-nen ban Kosei Rodo Hakusho* [Annual Report on Health, Labour and Welfare 2002-2003], Gyosei. p. 127

As of the end of the year 2002, there were 217,477 pharmacists in Japan. This corresponds to 171.3 pharmacists per 100,000 population, or 584 people per pharmacist²¹.

The most common workplaces for pharmacists are pharmacies, accounting for 94,760 (43.6%), followed by 48,150 (22.1%) working in hospitals and clinics, and 44,803 (20.6%) in companies in the medical field²².

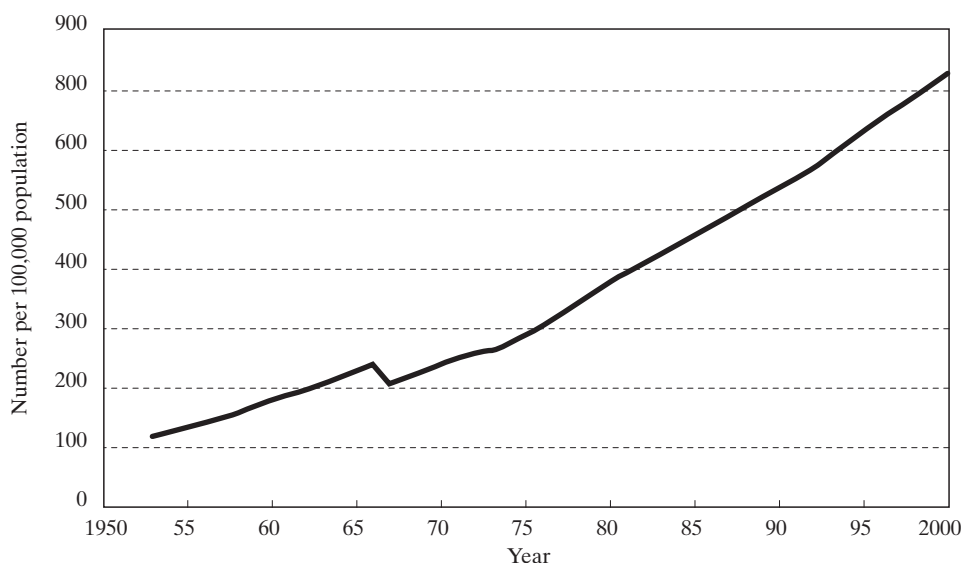
(4) Nursing Staff (Public Health Nurses, Midwives, Nurses and Assistant Nurses)²³

Nursing staff may hold a qualification in public health nursing, midwifery, nursing or assistant nursing. These qualifications can be acquired in a variety of ways, including the following: on completion of senior high school, graduate from a nursing school and become a nurse; after becoming an assistant nurse; do a further 2 years at a nursing

school and become a nurse; after becoming a nurse, complete further training at a public health nursing (midwifery) school and become a public health nurse (midwives); and gain a combined qualification in nursing, public health nursing and midwifery on completion of a 4 year university-based nursing course²⁴.

The number of nurses and midwives has risen steadily since the 1950's (see Figure 2-4). There were 36,781 public health nurses in Japan as of the end of the year 2000, only a slight increase on the 1950 figure (see Figure 2-3). Almost all public health nurses work in public health centers or municipal government (see Table 2-9). There are 29.0 public health nurses per 100,000 population (3,451 people per public health nurse), and recent modest increases in their numbers are unlikely to be sufficient to cope with the increasing demand for public health services associated with health and

Figure 2-4 Trends in Number of Nurses and Assistant Nurses (Nursing Assistants)



Source: Ministry of Health, Labour and Welfare

²¹ Health and Welfare Statistics Association (2002) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9., p. 172

²² *ibid.* p. 172

²³ After the “Law concerning Public Health Nurses, Midwives and Nurses” was revised in March 2003, gender neutral terms in Japanese are now used for public health nurses, midwives and nurses.

²⁴ Medical Laws and Regulations Research Group ed. (1999) *Zusetsu Nihon no Iryo* [Medical Services in Japan], Gyosei. p. 85

welfare programs for the elderly, and other changes in recent years²⁵.

As of the end of the year 2000, there were 24,511 working midwives in Japan. Their numbers have declined since the trend towards hospital birth, and away from home birth began around 1960. The present number is less than half of the 52,337 in 1960.

In accordance with the trend towards institutional delivery, the most common workplaces for midwives are hospitals (73.1%), followed by medical clinics (11.7%), and midwifery home (7.6%) (Table 2-9)²⁶. The largest single age group for midwives is the over 60's, but the number of new students has risen in recent years, increasing the proportion of younger

Table 2-9 Number of Public Health Nurses and Midwives by Workplace

	Numbers		Proportion of total (%)	
	Public health nurses	Midwives	Public health nurses	Midwives
Total	36,781	24,511	100.0	100.0
■ Public health centers	7,630	249	20.7	1.0
■ Midwifery home	-	1,858	-	7.6
■ Municipalities	20,646	-	56.1	-
■ Hospitals	1,770	17,914	4.8	73.1
■ Clinics	1,388	2,864	3.8	11.7
■ Home visiting nursing station	638	-	1.7	-
■ Elderly care institutions	52	-	0.1	-
■ Social welfare institution	627	30	1.7	0.1
■ Private businesses	1,672	-	4.5	-
■ Public health/midwifery schools or training centers	641	638	1.7	2.6
■ Others	1,717	958	4.7	3.9

N.B. As of December 31st, 2000

Source: Ministry of Health, Labour and Welfare

Table 2-10 Number of Nurses by Workplace

	Numbers	Proportion of total (%)
Total	1,042,468	100.0
■ Hospitals	736,646	70.7
■ Clinics	196,506	18.9
■ Home visiting nursing station	21,667	2.1
■ Elderly care institutions	26,749	2.6
■ Social welfare institution	31,363	3.0
■ Schools	1,265	0.1
■ Public health centers	1,323	0.1
■ Nursing schools	10,102	1.0
■ Others	16,847	1.6

N.B. As of 31 December 31st, 2000

Source: Ministry of Health, Labour and Welfare

²⁵ Health and Welfare Statistics Association (2002) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9., p. 173

²⁶ *ibid.*

age groups²⁷. The total of young working nurses and assistant nurses in Japan at the end of the year 2000 was 1,042,168. As shown in Table 2-10, the most common workplaces for nurses are hospitals (70.7%), followed by clinics (18.9%)²⁸.

As the working age population shrinks in proportion to the total population, we expect increasing difficulty in securing new professional graduates. Great emphasis is therefore being placed on preventing nurses leaving the workforce, and encouraging former nurses to re-enter the profession. As part of the program to stop nurses retiring, more childcare services are being provided within hospitals. Central and prefectural Nurse Centers were established in 1992, as centers for the promotion of former nurses re-entering the workforce. In the year 2000, 26,681 were re-employed as nurses and in the same year approximately 89,000 were registered in the Nurse Bank²⁹.

(5) Other Medical Services Personnel

With advances in medical science have come a number of new professions and specialties. Some of the more important ones will be introduced here.

The qualification of medical technologist was introduced in 1958. Under a medical practitioner's supervision, the medical technologist performs serological, hematological, biochemical and pathological investigations. The qualification of clinical technologist was introduced in 1970. In addition to the tests performed by medical technologist, the clinical technologist also performs physiological tests, such as electrocardiography, electroencephalography and respiratory function testing.

The radiological technologist performs diagnostic and therapeutic radiography under medical or dental practitioner's supervision. This profession was established in Japan in 1951.

Qualifications introduced to meet medical rehabilitation needs are those of the physiotherapist and occupational therapist (both established in 1965), orthoptist (1971), and the prosthetist and orthotist (1987). The clinical engineer (established in 1987) operates and maintains life-support equipment (respirators, hemodialysis equipment, etc.).

In the dental area are found the dental hygienist (established in 1948) and the dental technician (1955). The dental hygienist works under dental supervision, assisting in dental treatment and providing advice about dental health. The dental technician makes, repairs and adjusts dental prostheses and other appliances required for the treatment of specific patients, under dental supervision.

The qualification of emergency medical technician was established in 1991, to conduct emergency procedures (obtaining an airway, restoring a heartbeat, etc.) during emergency transport (see Chapter 10 "Emergency Medical Care" for details). Other paramedical professions include therapeutic massage, acupuncture and moxibustion (all legally recognized in 1947) and judo therapy (legally recognized in 1970).

Qualifications related to diet and nutrition include dietitians (established in 1947, licensed by the prefectural governor) and registered dietitians (registered by the Minister of Health, Labour and Welfare), and licensed chefs (licensed by the prefectural governor).

5-3 Issues on Medical Service Provision

Japan presently offers, under universal health insurance coverage, a public health and medical system with standards at the highest level in the world. As shown in Table 2-11, however, in comparison to other developed nations, Japan is experiencing a shortage of medical services

²⁷ Medical Laws and Regulations Research Group ed. (1999) *Zusetsu Nihon no Iryo* [Medical Services in Japan], Gyosei, p. 91

²⁸ Health and Welfare Statistics Association (2002) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9., p. 173

²⁹ *ibid.* p. 181

Table 2-11 Comparison of Medical Service Provision in Developed Countries

	Hospital beds per 1,000 population	No. doctors per 100 beds	No. nursing staff per 100 beds	Average length of hospital stay
Japan	13.1	12.5	43.5	31.8
Germany	9.3	37.6	99.8	12.0
France	8.5	35.2	69.7 (1997)	10.8 (1997)
England	4.2	40.7	120.0	9.8 (1996)
U.S.	3.7	71.6	221.0	7.5 (1996)

Source: Japanese figures from Ministry of Health and Welfare, overseas figures from OECD Health Data 2000

personnel, and soaring medical costs associated with lengthening hospital stays. In recent years, factors such as the low birth rate and aging population, advances in medical science, and attitudinal changes in the population have produced the following challenges:³⁰

- 1) In comparison to other developed nations, Japan has more hospital beds per capita, but medical service personnel for each bed are fewer, and the average hospital stay is longer.
- 2) Due to insufficient functional differentiation, accumulation of skills related to specialist treatments is difficult for each institution. The challenge is to achieve a concentration of skills as well as efficiency overall.
- 3) In the present situation, it is difficult for patients to choose a medical institution due to insufficient objective information. This leads to a lack of competition between institutions through patient choice.
- 4) There is an increasing level of demand for medical services that can be accessed with confidence, in particular in the areas of emergency medicine.

The Ministry of Health, Labour and Welfare has indicated that, in order for Japan to meet such a variety of challenges, and provide a high quality and efficient medical system, it is necessary to develop a comprehensive future blue-print that the entire population can share. To this end the “Shape of Medical Service Provision in the 21st Century” was

announced in September 2001, giving the schedule and details of programs to be implemented in the near future.

The “Shape of Medical Service Provision in the 21st Century” presents the following 3 aspects:

- 1) Respect for patient choices based on patient awareness and responsibility and provision of information
- 2) A system providing high quality and efficient medical care, able to respond to patient choices
- 3) Provision of a full range of regional medical services (within secondary medical region), implementation of medical safety and emergency medicine programs, and introduction of IT systems for information provision.

This blueprint shows detailed programs with numerical goals, and schedules have been produced for the achievement of the above 3 aims.

6. Medical Pharmaceuticals

6-1 Pharmaceutical Industry

In the 21st century, with remarkable advances in the life sciences, we will see the development of new medical treatments in the fields of reproductive medicine and nanotechnology, and revolutionary new medical pharmaceuticals based on genetic information (so-called “genome medicines”). The

³⁰ Ministry of Health, Labour and Welfare ed. (2002) *Heisei 14-nen ban Kosei Rodo Hakusho* [Annual Report on Health, Labour and Welfare 2002-2003], Gyosei. pp. 119-120

local pharmaceutical industry is expected to be a leading industry, and play a vital role in the economic development of Japan in the 21st century³¹.

The pharmaceutical market is undergoing a process of globalization on a massive scale, and the late 1980's saw a merger and acquisition (M&A) boom in Western countries. In recent years, medical reforms in many countries have triggered a further M&A boom. Each pharmaceutical company has undergone restructuring and retrenchments, increased productivity in research and development (R&D) and marketing, and the Japanese industry has been forced to undergo market rationalization, as well as mergers, acquisitions and capital investment with Western-based companies.

Global competition between companies in the field of research and development of new pharmaceuticals is also becoming ever fiercer. The Japanese drug discovery environment is not, however, internationally attractive. With this background in mind, Japanese pharmaceutical industry representatives and the government collaborated to produce the "Pharmaceutical Industry Vision" in August 2002, with the aims of improving the international competitiveness of the medical pharmaceutical industry, and making the Japanese pharmaceutical development environment more attractive. This document set out the present situation and challenges facing the industry, as well as a vision for the future. It then proposed the 5 year period commencing in 2002 for a concentrated effort in the promotion of innovation, and detailed an action plan for improvement of the environment for drug discovery. The future development of the Japanese pharmaceutical industry will require the steady implementation of this action plan³².

6-2 Special Considerations Related to Separation of Dispensary from Medical Practice

Japan is said to be the only developed country in the world where medical practice and dispensing are not generally separated³³. This anomaly dates back to the custom in the premodern era, the Edo Era, where traditional and Chinese medicine predominated, whereby physician/apothecaries earned their living by dispensing medicines. From this historical background, the concept that the cost of medications (the cost of medical care) is paid by the patient was firmly established even before the Edo Era, and in this respect Japan is very much different from developing countries today. A number of trial programs of separation of dispensary from medical practice have been attempted over the years. The number of prescriptions filled outside the hospital increased sharply in 1974, so this is counted as "year 1 of separation of dispensary from medical practice"³⁴. The proportion of prescriptions filled outside hospital has subsequently risen steadily, reaching 44.5% in 2001.

There remain a number of problems with effecting separation of prescribing and dispensing, in particular differences between regions are great, and because of the prevalence of "gate-front pharmacies" located next to hospitals or medical clinics, that concentrate on filling prescriptions from those institutions.

The merits for patients of the separation of dispensary from medical practice are improved safety through the appropriate use of medications, prevention of duplication and drug interactions, and advice from the pharmacist about the correct way to take medication. The ideal way to get the full benefit of this system is for the local family pharmacy to be allowed to dispense prescriptions from multiple hospitals and medical clinics,

³¹ *ibid.* p. 129

³² *ibid.* p. 130

³³ Health and Welfare Statistics Association (2002) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9., p. 238

³⁴ Amano, Hiroshi (2002) *Gaisetsu Kusuri no Rekishi* [Historical Summary of Medicines], Yakuji Nippo Sha. p. 177

maintain patient medication profiles, including over-the-counter drugs, and give detailed advice about taking medication. This is also known as the “focused pharmacy” system. To promote appropriate separation of dispensary from medical practice, the Ministry of Health, Labour and Welfare considers it necessary to strengthen the system of community pharmacies filling prescriptions, to obtain the understanding of the community and the cooperation of local service providers, and to upgrade the skills of the pharmacists themselves. A number of programs will be implemented to fulfill these objectives³⁵.

7. System for Collection and Dissemination of Health Information

7-1 Collection of Health Statistics

The detail in Japanese health statistics is unrivalled anywhere in the world. Japan has a long history of statistics collection, with family registers, Resident Register Book for Taxation and Tax Revenue Book dating back to the Nara Era (AD. 7c). Entering the Edo Era, “Buddhism sect reforming register book” was kept from 1671, and the first national population survey was conducted in 1721³⁶. In this way, a form of demographic statistics was collected in Japan even before the Meiji Era (1868).

A feature of Japanese health statistics is that they were commenced as a registration system, (notification of pregnancy, tuberculosis, etc.) not for the purpose of statistics collection, and efforts to utilize the benefits of the registration system produced a detailed collection of statistical information system. The first modern Population Census was not conducted until 1920; much later in Japan than in other western countries. Since then, a

full Population Census has been conducted every 5 years (with the exception of the immediate post-war period).

Various statistical surveys are conducted on a regular basis, from the “Designated Statistical Surveys” specified in the Statistics Law to “Approved Statistics” and “Notified Statistics.” Designated Statistical Surveys include the “Population Census of Japan,” as well as “Vital Statistics,” and health-related surveys including the “Comprehensive Survey of Living Conditions,” “Reports of Health Administration,” “Patient Survey,” “National Health Survey,” “Survey of Medical Facilities” and “Survey on Time Use and Leisure Activities.” The main Approved Statistical Surveys in the health field are the “Comprehensive Survey of Public Health” and “National Nutrition Survey.” Together these surveys provide detailed information regarding indices of public health and medical services in Japan.

7-2 Utilization of Communication Technologies

In recent years, it has become widely recognized that the provision of effective and high quality public health and medical services requires the utilization of up to date communication technologies. Remarkable advances have been reflected in the development, promotion and widespread uptake of medical information technology systems.

In December 2001, the Ministry of Health, Labour and Welfare announced the “Grand Design for Health Information,” outlining the roles of government and private enterprise in achieving the uptake of information technology across the public health and medical field within the 5 year period commencing in 2002. This grand design contained the following predictions, from the viewpoint of

³⁵ Health and Welfare Statistics Association (2002) in *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9., p. 238

³⁶ Yamaguchi, Kiichi (2000) “*Jinkou Shiryō to Jinkou Tokei* [Historical Materials and Statistics of Population]” Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], Baifukan Co., Ltd.

patients and the general population, of how utilization of information technology will change the way to deliver medical services in the 21st century.

- 1) Making it easy to choose, the appropriate medical institution to attend in advance, and information regarding medical services is readily available.
- 2) Waiting times will be reduced, easily understandable explanations will be given during the consultation, and the most appropriate treatment given based on the best and most recent medical evidence.
- 3) When at home, the burden of attending hospital is lessened, and medical information is readily obtained and easily understood.
- 4) In case of an emergency, prompt and appropriate emergency medical care is available, and no matter where or when there is a sudden change in the patient's condition the emergency medical service provider is able to contact the patient's family doctor.
- 5) The overall Japanese medical system offers an environment of ready access to high quality and accurate information, and patient can choose based on this information, where high quality and efficient medical services are offered.

Action plans were formulated to meet a number of specific goals, such as the promotion of electronic medical records (EMR) in order to active community-based medical services: "EMR to be introduced into more than 60% of hospitals with 400 or more beds and medical clinics by the year 2006"; and electronic reception accounts systems: "to be introduced into more than 70% of hospital reception desks by the year 2006." Strategic initiatives have been set in motion to achieve goals set in the action plan³⁷.

8. Finances in Medical Services

8-1 Trends in Medical Expenditure

The public health and medical system in Japan is based on universal health insurance coverage, where all Japanese people subscribe to either National Health Insurance or Public Health Insurance, and are able to receive any medical care at any time. This system, along with improvements in living conditions and nutrition levels associated with economic growth, has contributed to Japan achieving the highest life expectancy of any nation, and a high level of public health and medical services. The Japanese medical system is therefore well regarded internationally.

In recent years, however, the financial situation of the health insurance system has become extremely tight due to the rapidly aging population, to a degree unparalleled elsewhere in the world, increased medical costs contributed to in part by the cost of medical care for the elderly, and the economic downturn commencing in the 1990's. As shown in Figure 2-5, national health expenditure continues to climb, outstripping the growth of the national economy. National medical expenditure was ¥2,400 per capita in 1954, exceeding ¥100,000 by 1980, ¥200,000 by 1994, and reached ¥226,600 in 1996.

The increase in the cost of medical care for the elderly has been particularly dramatic, now accounting for one-third of national health expenditure, and 8% of the national income. If we look at the yearly rate of increase in the cost of medical care for the elderly, we can see just how precipitate the growth has been (see Table 2-12).

In the future, further increases in the cost of medical care for the elderly will be inevitable. If the growth rate in medical expenditure continues to outstrip increases in the national income, however, the burden on the supporting population will

³⁷ Ministry of Health, Labour and Welfare ed. (2002) *Heisei 14 nen ban Kousei Roudou Hakusho* [Annual Report on Health, Labour and Welfare 2002-2003], Gyosei. pp. 201-202

become excessive, particularly on the younger generations who will be responsible for most of the insurance premiums³⁸.

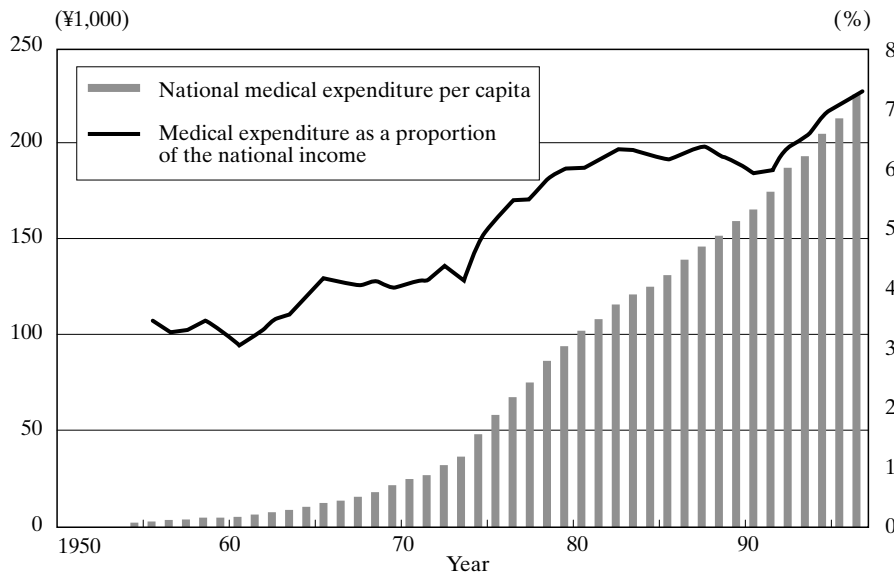
In considering the future of the medical system, the major challenges are to bring the growth rate in medical expenditure back to a reasonable level, and to equally share the increasing burden between generations in a fair manner.

8-2 Budget of Health Sector

(1) National Government Budget

As shown in Table 2-13, the Ministry of Health, Labour and Welfare budget for the 2002 financial year (FY) was ¥18,668.4 billion, or some 23% of the total national budget. Of this total, approximately ¥14,000 billion was set aside for

Figure 2-5 Trends in Per Capita Medical Expenditure and as a Proportion of the National Income



Source: National income from the Economic Planning Agency (December 1997 announcement)
 Total population from the Latest Demographic Statistics (2001/2002 edition), National Institute of Population and Social Security Research
 Medical expenditure from Ministry of Health, Labour and Welfare

Table 2-12 Yearly Growth Rate in Medical Expenditure (%)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
National medical expenditure	5.9	7.6	3.8	5.9	4.5	5.8	1.9	2.6	3.7	-1.9
Cost of medical care for the elderly	8.1	8.2	7.4	9.5	9.3	9.1	5.7	6.0	8.4	-5.1
National income	5.9	-0.1	0.0	0.9	1.1	2.6	0.8	-2.8	0.3	-0.3

Source: Ministry of Health, Labour and Welfare

³⁸ *ibid.*

social insurance expenditure. The budget for public health programs was ¥523.6 billion. Also in the field of public health administration, the Ministry of the Environment set aside ¥264.4 billion for planning for environmental management, and the establishment of a "Sound Material-Cycle Society" (budget for FY 2002), and the Ministry of Education set aside approximately ¥2.5 billion for planning for healthy childhood development, and planning in the area of child health and safety (budget for FY 2002).

(2) Regional and Local Government Budget

In Japan, for the budget of public health, in addition to the national budget, each regional and local government body sets its own budget. Basically, the finances of each prefecture and

municipality is different, but they can be roughly divided into the areas of expenditure on public health, public welfare, civil engineering, education, agriculture, forestry, fisheries and police. Of these, public health expenditure corresponds to the field of public health and medical services.

The total annual budget of all regional and local government bodies in Japan for FY 2002 was ¥97,616.4 billion, of which public health expenditure accounted for ¥6,519.7 billion, or 6.7% of the total (3.1% for prefectures, 9.9% for municipalities). Decentralization is also progressing in the field of public health and medical services, in accordance with the "Community Health Law" and other directives, and a handover of resources is progressing, albeit slowly.

Table 2-13 Major Items in Ministry of Health, Labour and Welfare Budgets

	FY 2002 (¥million)	FY 2001 (¥million)
● Daily life security payments	1,383,728	1,309,113
● Social welfare payments	1,721,755	1,694,410
● Social insurance payments	13,995,224	13,497,780
● Public health program expenditures	523,691	528,139
• Public health general expenditures	85,925	77,120
• Public health facilities expenditures	31,563	36,268
• Atomic bomb survivor health management allowances	155,449	156,789
• Equipment costs for Peace Memorial Halls for the Atomic Bomb Victims	2,940	3,892
• Tuberculosis medical costs	8,365	8,919
• Running costs for National Hospitals and Sanitaria	115,862	124,378
• Equipment costs for National Hospitals and Sanitaria	6,300	6,635
• Mental health expenditures	67,593	64,583
• Quarantine stations	8,054	8,180
• National leprosaria	41,640	41,374
● Unemployment program expenditures	487,235	429,093
● Other	556,729	583,542
General Accounts Budget Total, Ministry of Health, Labour and Welfare	18,668,363	18,042,077
General Accounts Budget Total	81,229,993	82,652,379

N.B.: The sum of the individual entries may not equal the total amount due to rounding off.

Source: Finance Division, Minister's Secretariat, Ministry of Health, Labour and Welfare

Part II Japan's Experiences in Public Health and Medical Services

Chapter 3

Maternal and Child Health

In 1950, Japan experienced a high infant mortality rate of 60.1 (per 1,000 live births), but this subsequently underwent a dramatic decrease, and by 2000 at 3.2 it was the lowest in the world (see Figure 3-1). Presently, the high infant mortality rate is still greater than 50 in more than 60 developing countries. There is a powerful desire on the part of developing countries to learn from the Japanese experience in maternal and child health, bringing about such a rapid improvement in the health standards after the end of the Second World War.

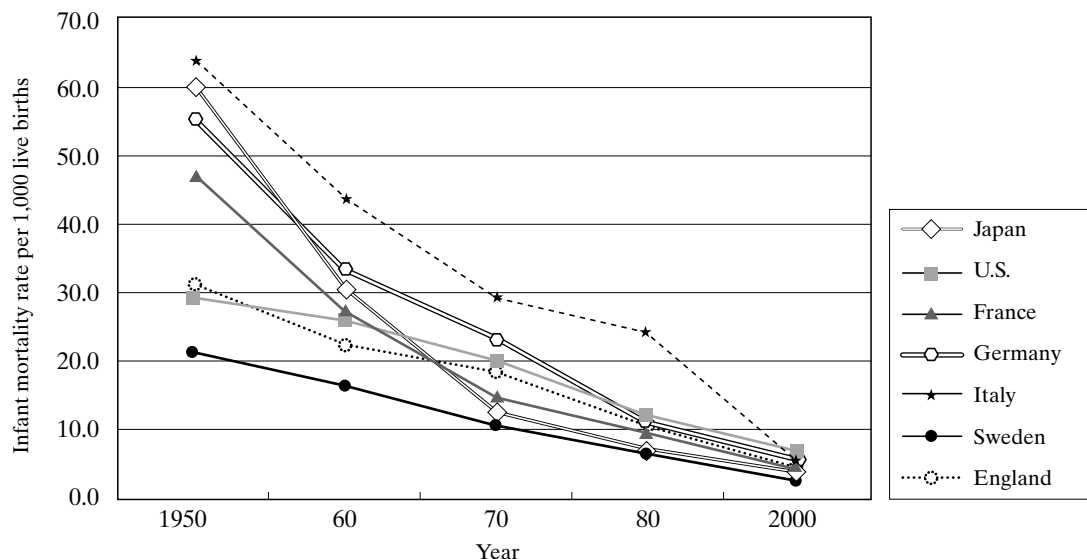
In this chapter, we will provide an overview of post-war Japanese initiatives in the field of maternal and child health, and discuss the programs that may be of use to developing countries.

1. Changes Over Time in Maternal and Child Health Measures

1-1 Pre-war Maternal and Child Health (1868~1944)

It is well known that many foreigners who visited Japan in the early Meiji Era (1868~) were full of praise for Japanese childrearing methods. For instance, E.S. Morse declared “Nowhere in the world have I seen a country that cares for its babies as much as Japan and I am certain that there are no babies in the world as good as Japanese babies,” and stated that the infant mortality rate of Tokyo was lower than that of Boston¹. The Japanese infant mortality rate at the start of the 20th century has

Figure 3-1 Trends in Infant Mortality Rate in a Number of Developed Countries (1950~2000)



Source: Mothers' Children's and Families' Health Education Group ed.

¹ Morse (1917)

been estimated at around 150, relatively low at that time for any country. One reason for this may be the existence in Japan of “*sanba*,” (traditional birth attendants) from the 1300's.

Although rather favorable in comparison to levels in other countries at the time, the infant mortality rate remained at about 150 until 1925, by no means a satisfactory level. There was a distinct lack of scientifically based knowledge concerning pregnancy and childbirth among the general populace, and a number of problems associated with women bearing large numbers of children, hard labor until immediately before giving birth, a lack of a proper system of checkups during pregnancy, and a lack of birth attendants with any specialized training. Problems after birth included a lack of proper neonatal care, malnutrition, diarrhea illnesses caused by poor hygiene, acute respiratory infections due to unhygienic living conditions, and a lack of parental knowledge and understanding. It must be stated, however, that the Meiji and Taisho Governments had their hands full with fighting acute infectious diseases, and did not have spare resources to divert to maternal and child health.

In particular, the situation in rural villages was all but unknown to the authorities, and it was only after the Ministry of Home Affairs set up the Health and Sanitation Research Council in 1916 that information was gathered from rural villages concerning infant mortality rates.

As the country went on a wartime footing and with strong backing from the military in accordance with the *Kenpei-Kenmin* (Healthy Soldier, Healthy People) concept, the Public Health Center Law and Maternal and Child Protection Law were promulgated in 1937, establishing the framework of maternal and child health administration. The Ministry of Health and Welfare was then established in 1938, including maternal and child health within the administrative system comprising the Ministry of Health and Welfare and public

health centers. In 1939 all infants underwent health checks in a mass screening program.

Codification of the profession of public health nurses in 1941 secured human resources in the field including maternal and child health. In 1942 the “Pregnant Mother's Handbook” system, the precursor of the “Maternal and Child Health Handbook,” was launched. Observance of the system of registration of pregnancies and health checks was strongly recommended, and various types of maternal and child health services were established. In 1934 a community organization, the “Imperial Gift Foundation Aiiku-kai,” was established, and began a program of Aiiku Groups (Married Women's Voluntary Groups for Mother-Child Health and Welfare) in 1936. This period is considered to be the incubation period for maternal and child health policy in Japan².

1-2 Post-war Phase of Introduction of Maternal and Child Health Measures (1945~1948)

In post-war Japan, maternal and child health was designated an important field of public health, under direction, and with the assistance of the General Headquarters (GHQ). In 1947, only 2 years after the end of the war, within the Ministry of Health and Welfare, a Children Bureau was established that in turn contained a Maternal and Child Health Section to administer maternal and child health matters. The Child Welfare Law was enacted that same year. The New Public Health Center Law was also enacted in 1947, firmly establishing the public health center as the central provider of maternal and child health services to the community.

With the enactment of the Eugenic Protection Law in 1948, abortion was legalized, reducing the number of dangerous illegal abortions, and contributing in large part to a decline in both maternal and infant mortality rates. The Preventive

² Nishiuchi, Masahiko and Boshi Hokenshi Kanko Iinkai (1988) *Nihon no Boshi Hoken to Moriyama Yutaka* [Maternal and Child Health in Japan and Moriyama Yutaka], Japan Family Planning Association, Inc.

Vaccination Law was enacted the same year, and an intensive vaccination campaign commenced. The “Pregnant Mother’s Handbook” system, launched during the war, was revised and the Mother and Child Handbook relaunched in 1948 (later renamed the Maternal and Child Health Handbook in 1966).

In this way, a number of laws and programs were announced in quick succession over the 3 years after the war ended. Although there have been some changes, these measures have continued as the basis of maternal and child health policy up until the present day.

1-3 Phase of Maturation of Maternal and Child Health Measures (1949~1979)

After the post-war food shortages and Baby Boom had passed, from 1948 onwards the program of health guidance for pregnant women and mothers with small children was intensified, based on the public health centers. Health education programs run by public health nurses and midwives, mainly conducted through home visits, played a major role in promoting infant health.

Rural areas suffered a lack of birthing facilities where women could give birth safely, and many villages had no midwives. Community organizations and local governments set up “Maternal and Child Health Centers” in these areas, allowing for the first time safe deliveries under midwife supervision. These Maternal and Child Health Centers also became the place for maternal education classes, regarding postnatal care and other maternal and child health topics. Recognizing the positive achievements of these centers, in 1958 the Ministry of Health and Welfare passed legislation to establish a network of Maternal and Child Health Centers throughout the country.

In 1961 a nationwide programs of Home Visit Neonatal Health Checks and Advice, and Three Year-old Health Checks were commenced. As the scope of maternal and child health programs progressively widened, the “Maternal and Child Health Law” was enacted in 1965. Whereas the recipients of maternal and child health services had

previously been pregnant women, infants and their mothers, the new law broadened this further to encompass women before they became pregnant, and included their health management in a comprehensive maternal and child health program.

Following the introduction of the Maternal and Child Health Law, a great deal of effort was put into research into various diseases, and the development of preventive measures. The 18 month old health check was introduced in 1977, and the importance of early detection and early treatment of childhood diseases through a series of health checks for the newborn and at 18 months and three years, was underlined. Testing for congenital metabolic abnormalities was introduced in the same year, followed by tests for cretinism (congenital hypothyroidism, 1979), neuroblastoma (1984), and congenital hyperadrenalism (1988), as well as a Vertical Hepatitis B Transmission Prevention Project (1985), and hearing and vision testing and screening for various conditions at the three year old health check.

Based on community organizations dating back to the pre-war period, such as the Aiiiku Groups, in 1968 the Ministry of Health and Welfare gave funding to local governments to support women volunteers acting as “Maternal and Child Health Promoters,” thus extending their activities throughout the nation. It is characteristic of Japan that the positive benefits of grassroots campaigns such as this are spread throughout the country with governmental assistance.

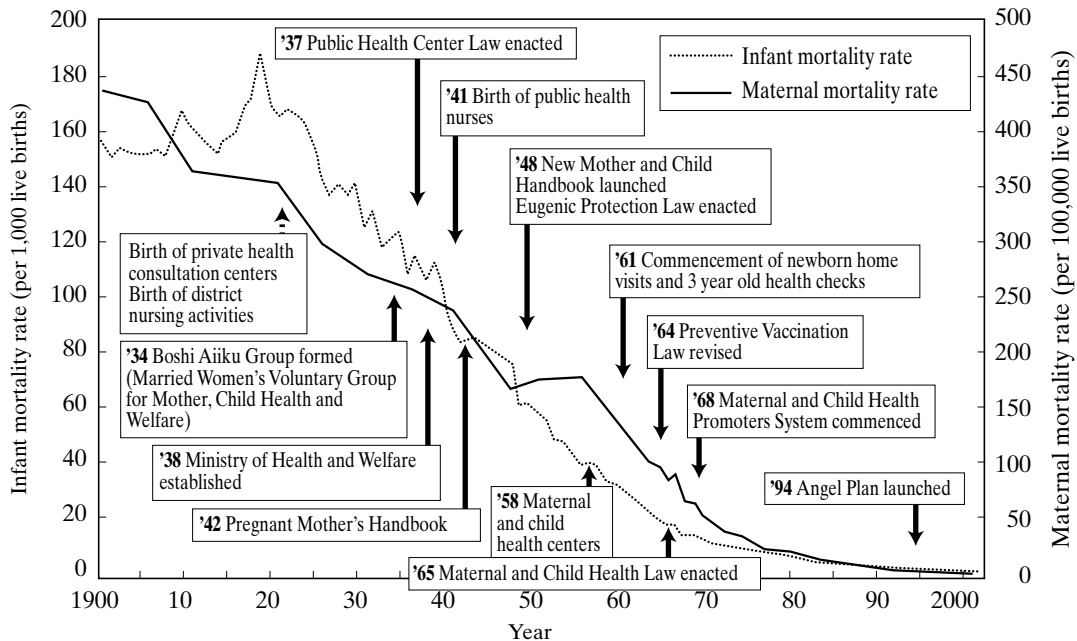
A building boom for medical institutions followed the introduction of universal health insurance coverage in 1961, providing easy access to medical care even for rural villages. As a result, the proportion of home delivery, as high as 95.4% in 1950, had halved by 1960, and was only 4% by 1970 (see Box 3-1).

1-4 Phase of Assistance in Childrearing (1980~present)

The major programs in maternal and child health were in place in almost all Japan by the early 1980’s (see Tables 3-1, 3-2), and the infant mortality

Table 3-1 History of Maternal and Child Health

Year	Infant mortality rate (per 1,000 live births)	Initiatives in maternal and child health	Topics in society, public health and medical services
1916	170.3		Formation of Health Care and Sanitation Council
1934	124.8	Formation of Imperial Gift Foundation Aiiku-kai	
1937	105.8		Public Health Center Law enacted
1938	114.4	Maternal and Child Protection Law enacted	
1940	90.0	Health checks and health advice for infants in accordance with National Physical Strength Law	
1942	85.5	Mother's Handbook System launched	
1945	—		End of World War II
1946	—		Japanese Constitution promulgated, epidemic of typhus fever, outbreaks of smallpox and cholera
1947	76.7	Children's Bureau established within Ministry of Health and Welfare, Child Welfare Law enacted	
1948		Mother and Child Handbooks issued, maternal and child health program outlined	Medical Services Law, Medical Services Personnel Law, Preventive Vaccination Law and Eugenic Protection Law enacted
1951		Support for care and education for children with disabilities, and issue of supportive devices	Complete revision of Tuberculosis Prevention Law; Japan joins World Health Organization (WHO)
1954		Ministry of Health and Welfare sets up community maternal and child health organizations	Programs launched to exterminate parasite eggs, mosquitoes and flies
1955	39.8		Morinaga Milk arsenic poisoning incident
1958		Maternal and child health centers established, medical aid program for premature babies	
1959		Support for care and education for children with tuberculosis	Outbreak of polio in Hachinohe City, Aomori Prefecture
1960	30.7		Pharmaceutical Affairs Law promulgated; Polio epidemic in more than 10 prefectures
1961	28.6	Introduction of 3 year old and neonatal home visit health checks; Emergency importation of polio vaccine and national program of immunization	Universal Health Insurance Coverage achieved
1962			Social Insurance Agency established; Thalidomide children born in Japan
1964	20.4	Preventive Vaccination Law revised (live polio vaccine legislated)	Infant mortality rate becomes less than that of U.S.
1965	18.5	Maternal and Child Health Law promulgated; National Children's Medical Center established	
1968	15.3	Maternal and Child Health Promoter system (919 municipalities nationwide)	Itai-Itai Disease (cadmium poisoning) recognized as pollution-related disease
1974	10.8	Research Program for the Treatment of Chronic Pediatric Diseases of Special Categories established	
1977	9.4	18 month-old health checks introduced; Mass screening for congenital metabolic diseases commenced	Average life expectancy becomes number one in world
1981			Infectious disease surveillance program commenced
1982			Law for Health and Medical Services for the Elderly enacted
1985	5.5	Vertical Hepatitis B Transmission Prevention Project commenced	United Nations International Women's Year
1989			AIDS Prevention Law enacted; "1.57 Shock" (declining birth rate)
1990			World Summit for Children (New York)
1991	4.4	Family Care Leave Law enacted	
1994	4.2	Angel Plan for assistance in childrearing	Community Health Law enacted; Long-term Care Insurance Law enacted
1997	3.7	Maternal and child health programs transferred to municipalities	
1999			Infectious Diseases Law implemented
2000	3.2	"Sukoyaka Family (Healthy and Happy Family)" Plan announced	

Figure 3-2 Infant Mortality, Maternal Mortality and Maternal and Child Health Initiatives

Source: Mothers' Children's and Families' Health Education Group ed. and Statistics and Information Department, Minister's Secretariat, Ministry of Health, Labour and Welfare

rate had fallen steadily (see Figure 3-1). Medical expenditures had also become relatively low in comparison with levels in other developed countries. The Japanese maternal and child health system, so close to the ideal in many ways, is looked at with envy by developing and developed countries alike. On the other hand, recent societal trends, such as the declining birth rate, and increased rates of nuclear families and urbanization, mean fewer opportunities to obtain advice about childrearing from people with experience. Stress related to childrearing has become a social problem, with increased levels of parental stress, a rise in the incidence of child abuse, and a greater financial burden associated with raising and educating children. Quantitative improvements in indicators of maternal and child health have just about reached the saturation point, but there is still a great deal of room for improvement in the emotional health of both parents and children.

To deal with changes in the environment that children grow up in, for instance the ever-declining birth rate and the increasing participation of women in the workforce, the Ministry of Health and

Welfare formulated the "Angel Plan," with the aim of producing a social environment conducive to worry-free childrearing. A "Five-Year Project on Urgent Day-care Measures etc." was mapped out in 1994 with the agreement of the Ministers of Finance and Home Affairs.

Based on the recognition that the existing maternal and child health system was unable to deal with the diversification of lifestyles associated with the above-mentioned changes, such as the increase in nuclear families and the increasing women's participation in the workforce, the basic direction for future childrearing support measures was worked out, through cooperation with agencies in fields other than public health, including child care, employment, education and housing.

The "Sukoyaka Family 21" (Healthy and Happy Family 21) program was announced in 2000, building on initiatives taken during the 20th century, to deal with challenges both pending and new. It is a national campaign, to be jointly promoted by all concerned agencies and organizations, showing the direction of initiatives in

the field of maternal and child health to be taken in the 21st century. The major initiatives are: 1) Strengthening health care measures and promoting health care education for adolescents; 2) Assuring safety and comfort during pregnancy and childbirth, and assistance for infertility treatments; 3) Maintenance and improvement of child health care and medical services standards; and 4) Promotion of the trouble-free emotional development of children and alleviation of anxiety related to childrearing.

2. Main Factors in Improvements in Maternal and Child Health

In the next pages, we will analyze the factors that contributed to the rapid post-war improvement in the level of maternal and child health in Japan, and present in detail those factors particularly characteristic to Japan.

2-1 Analysis of Factors in Raising the Level of Maternal and Child Health

It is of great interest to other countries just what the initiatives Japan took to achieve such rapid reductions in the maternal and infant mortality rates. These indicators are intimately related to a wide range of socio-economic factors, such as education and economic growth, so it is difficult to explain improvements in maternal and infant mortality rates only in terms of medical programs in the field of maternal and child health. A number of studies are in progress, but no definite conclusions have been reached. In this paper, we will present a number of earlier reports, and hope to provide material for future discussions.

Fujisaki (2003) offers three major factors in reducing the maternal mortality rate: 1) "Fundamental conditions": universal health insurance coverage, improvements in medical care, educational standards, and living standards; 2) "Specialized

promoting factors": maternal and child health facilities, promotion of institutional delivery, and advances in perinatal medical care; and 3) "Notable factors unique to (characteristic of) Japan": public health programs, community participation, the Maternal and Child Health Handbook system, enactment of the Mother's Body Protection Law (formerly Eugenic Protection Law). Of these, 1) and 2) can be considered universal requirements for reducing the maternal mortality rate any country. The "programs unique to Japan" (characteristic Japanese initiatives) outlined in 3) are considered to have contributed in part to the remarkable results achieved in such a short time in Japan, and it has been suggested that detailed consideration of these factors may be the key to extracting those aspects of the Japanese experience that will be applicable to developing countries.

A joint US/Japan study investigated factors related to infant mortality³. As shown in Figure 3-1, the infant mortality rate in Japan dropped below that in the U.S. during the 1960's, even though Japan was still much poorer economically at that time. Their analysis revealed the following reasons for this:

- i) Small degree of economic disparity: not only was there little gap between rich and poor in Japan, but the difference in maternal and child health standards between rural and metropolitan regions was also small. In particular the difference between urban and rural infant mortality rates began to decrease after 1965 and maternal and child health standards in rural regions caught up with the metropolitan regions in a short period (5 years)⁴.
- ii) Universal Health Insurance Coverage: with the introduction of the system of universal health insurance, it became easier for many women and children to obtain medical services. With the further introduction of the systems of "Yoiku-iryō" (medical and infant care

³ Kiely M, Hirayama, Wallace, Kessel, Nakamura, Kiely JL, Nora (1999)

⁴ Nakamura (10 March 2003), symposium address "How Can We Apply Japan's Experience in Developing Countries," at the international symposium "Concerning the Possibility of Applying Japan's Experience in Developing Countries"

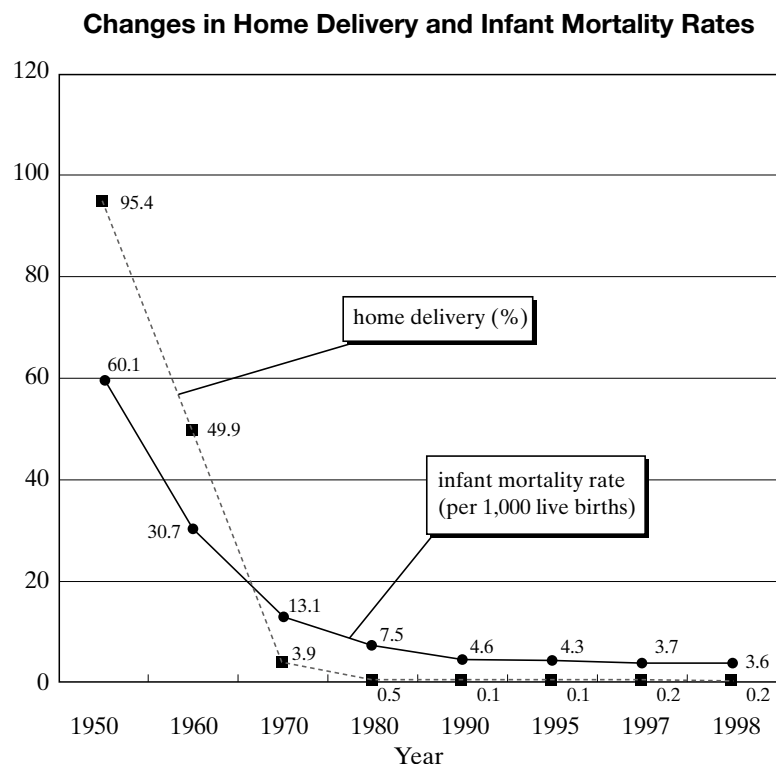
Box 3-1 Home Delivery and Infant Mortality Rate

Fujisaki's analysis (2003) identifies the promotion of institutional delivery as a "specialized promoting factor" contributing to the decline in the maternal mortality rate. Here we will see how this theory fits the available data.

We can see from the graph below that in 1950, the rate of home delivery was 95.4%, but by 1960 had halved, and by 1970 was only 4%. We can also see a rapid decline in the infant mortality rate over the same period. From these data, we can conclude that the move to institutional delivery (includes hospital, medical clinic, and maternity clinics) brought about a significant improvement in the Japanese infant mortality rate. One reason for the move to institutional delivery was a directive from the post-war GHQ, and another important factor was the introduction of universal health insurance coverage in 1961, leading to a rapid expansion of medical institutions, providing easy access to medical care even for rural villages.

It is overly simplistic to say, however, that institutional delivery is superior to home delivery. It is more reasonable to suggest that an appropriate system was not in place for home delivery in Japan, and the move to institutional delivery brought about an improvement in the standard of medical care, thereby lowering the infant mortality rate.

From the viewpoint of reproductive health, a pregnant woman should be able to select the place where she will give birth. The modern theory of international health care cooperation states that the goal is not for "a move to institutional delivery," but rather to "birth under the supervision of someone with specialized training."



Source: Proportion of home delivery from Mothers' Children's and Families' Health Education Group; infant mortality rates from the National Institute of Population and Social Security Research

services)⁵ and “*Ikusei-iryō*” (medical aid for children with potential disability)⁶, no cost is incurred by the parents for neonatal medical treatment, or surgery for congenital conditions, that would otherwise be extremely expensive. These systems are also considered to have contributed to the decline in the infant mortality rate.

- iii) Maternal and Child Health Handbook: there is no scientific evidence that the Maternal and Child Health Handbook system has directly contributed to the decline of the infant mortality rate in Japan. It is considered to have played a role, however, through improving parents' knowledge base concerning childrearing, improving communication between providers and consumers of medical services, provision of maternal and child health information, and making a record of the process of pregnancy, birth and child growth.
- iv) Health checks and screening tests: early detection and treatment of a variety of conditions has been aided by the comprehensive system of health checks and screening tests for pregnant women, new mothers, and children, including medical checks during pregnancy, maternity classes, neonatal mass screening for congenital metabolic diseases, and health checks for infants.

If we consider the above two studies, we see that despite their different subject matter, both maternal mortality rates and infant mortality rates come under the heading of maternal and child health, and both emphasize the same three areas, i.e. socioeconomic factors, technical factors unique to the field of maternal and child health, and approaches and activities characteristic to Japan. Points i) and ii) of Kiely et al. are included in

Fujisaki's 1) Fundamental conditions, point iv) is included in 2) Specialized promoting factors, and point iii) is included in 3) Notable factors characteristic of Japan.

Socioeconomic factors and technical factors related to the field of maternal and child health can both be considered common to Japan and other countries. In this paper, we will therefore focus on approaches and activities characteristic to Japan for further analysis and discussion. We will present the Japan's experience in the four factors identified by Fujisaki as “Notable factors unique to Japan,” public health activities, and community participation, use of the Maternal and Child Health Handbook, and the enactment of the Mother's Body Protection Law. We will also discuss maternal and child health centers and maternal and child health statistics, important subjects for developing countries, where Japanese advantages can be readily used in assistance to developing countries.

2-2 Public Health Initiatives—Activities in Women-only Professions

Maternal and child health activities were conducted in Japan from before the war mainly as a part of public health programs. In particular, the activities of women-only professions, such as practicing midwives and public health nurses, were instrumental in improving maternal and child health.

(1) Practicing Midwives

Among the activities of non-governmental groups, the contribution made by experienced practicing midwives, present in Japan since the Edo Era, ranks particularly highly. The Meiji Government regulated practicing midwives, providing educational opportunities, and worked to provide a grassroots

⁵ *Yoiku-iryō* (medical and infant aid program): a system whereby the gap payment for hospitalization and medical expenses is covered for low birth weight infants (<2,000 g) or neonates with certain medical conditions (Maternal and Child Health Law Article 20).

⁶ *Ikusei-iryō* (medical aid for children with potential disability): a system whereby children with conditions that are expected to improve with surgery or other medical treatment (e.g. conditions affecting limbs, kidneys or heart) can receive treatment at public expense at designated medical institutions (Child Welfare Law Article 20).

environment where women could give birth safely, before institutional delivery became popular. Post-war, the GHQ applied the American experience⁷, where there did not exist such a high quality practicing midwife system, and sought to abolish the system in Japan. Once they recognized the professionalism of Japanese practicing midwives, and their importance to society, the system was allowed to continue⁸. Subsequently, the Ministry of Health and Welfare re-educated midwives, and instituted a system of clinical training for the instruction of nurse midwives regarding public health activities. In particular, midwives were instructed to: 1) encourage the use of Maternal and Child Health Handbooks; 2) promote health checks at public health centers; 3) encourage institutional

delivery; and 4) measure urine protein, blood pressure and weight. Midwives who underwent this re-education were professionals with a good grasp of the health of mothers and children, as well as their economic circumstances. Midwives became very concerned at the post-war increase in the numbers of women undergoing repeated illegal abortions for unwanted pregnancies, as well as the later consequences of stillbirths, congenital abnormalities, and damage to the mothers' health. As a result, when the Family Planning Worker system began in 1952, many midwives, to protect the safety of women's bodies and with no concern for any possible threat to their profession, spread the message of family planning saying "rather than have an abortion, use contraception."

Box 3-2 Activities of Public Health Nurses—Takaho Village in Nagano Prefecture

An NHI public health nurse was first posted to Takaho-mura in Nagano Prefecture in 1944. At the time, this was an extremely poor village with a high infant mortality rate. The new public health nurse first set up a "Public Health Guidance Worker System" based on the Aiiku Group activities, actively involving local wives in public health activities, and thereby increasing independent awareness and knowledge of public health matters. After the war finished, she conducted infant health checks and antenatal and postnatal health checks, in collaboration with the new public health center and local doctors. She later earned accreditation as a Family Planning Worker, and worked to raise awareness of maternal and child health and family planning. She worked with decision makers who controlled the activities of married women, such as the mayor, local Buddhist priest, their husbands and mothers-in-law. She formed an "*Oshidori-kai* (Lovebirds Club)" for married couples, and provided members with health guidance. With the passage of the Eugenic Protection Law in 1948, induced abortion was legalized under certain conditions, and the number of abortions rose sharply in Takaho Village, reaching a peak of 118 procedures in 1953. Programs such as the *Oshidori-kai* and "Love Box" (for the distribution of condoms) were then successful, however, and the number of abortions was halved the next year to 56 procedures (1954), and fell further to 32 in 1955.

Source: Institute for International Cooperation, Japan International Cooperation Agency (2003) *Second Study on International Cooperation for Population and Development —New Insights from Japanese Experience*

⁷ At the time, the majority of births in the U.S. were in hospital, under the supervision of doctors and nurses. Midwives did not receive any formal training, however, were used only by low income earners in rural areas without medical services, and were not socially accepted as a profession. In Japan, midwives received a systematic education, and midwifery was considered a suitable profession for the daughters of prosperous families. In this era, more than 90% of babies were delivered at home, and midwives were extremely well regarded by society (Institute for International Cooperation, Japan International Cooperation Agency 2003).

⁸ Ohbayashi, Michiko (1989) *Josanpu no Sengo* [Midwives after WWII], Keiso Shobo

(2) Public Health Nurses Activities (also see Chapter 8)

The first incarnation of public health nurses in Japan was as volunteer district nurses, whose activities supported mothers and children in the 1920s. In the 1930s National Health Insurance (NHI) unions and local government bodies employed public health nurses to improve the health of community residents. As an example, the NHI public health nurse in Rokugo Village in Gunma Prefecture (population approx. 1,400) in 1945 performed the following variety of duties related to maternal and child health: antenatal health checks (assisted by specialist obstetrician 4 times/year), nutritional supplementation for pregnant women and new mothers (distribution of rice-koji (malted rice) and promotion of goat-keeping), infant health checks (assisted by village doctor twice/year), lactation and childrearing consultations (once/month), and home visits to all infants and pregnant women⁹. Subsequently, public health nurses were posted to public health centers, which were established in 1938. Many public health nurses provided maternal and child health services, based at public health centers, which were based on an intimate grasp of the needs of the community. Until around 1960, outreach activities involving home visits to all households in the area were the cornerstone of public health activities in rural villages, allowing public health nurses to provide services finely attuned to the needs of their local community. At that time, the social status of public health nurses was high, and they were well remunerated (for instance, some public health nurses in Shizuoka Prefecture were paid more than university

graduate teachers, and some were the next best paid after the village deputy mayor)¹⁰. These factors increased the sense of responsibility of public health nurses, and led to finding problems and solving them on their own initiative¹¹.

The field of maternal and child health started in Japan with private sector female medical services personnel recognizing what needed most to be done, and was included in public health initiatives once the systems of public health nurses and public health centers had been implemented. Also characteristic of Japanese initiatives in this area is the fact that practicing midwives and public health nurses set up programs based on outreach services that were finely attuned to the needs of their local community.

2-3 Participation of Community Groups

(1) Boshi Aiiku-Group (Married Women's Voluntary Groups for Mother-Child Health and Welfare) Activities

During and after the war, recognition grew that the protection of the health of mothers and children was an important challenge for the entire world, and in Japan a number of initiatives were launched with some governmental support. A typical example is the Imperial Gift Foundation Aiiku-kai, founded in the pre-war period, and its post-war successor, the Maternal and Child Health Promoter system.

The Imperial Gift Foundation Aiiku-kai was launched in 1934 with Imperial sponsorship, as a non-governmental organization to conduct programs for the health and welfare of mothers and children. The results of a nationwide survey of

⁹ Uchibori, Chiyoko (1985) “*Kokuho Hokenfu Katsudo* [Activities of Community Public Health Nurses]” *Hokenfu no Ayumi to Kosshu Eisei no Rekishi - Kosshu Eisei Jissen Siriizu 2* [The History of Community Public Health Nurses and Public Health - Series of Practice for Public Health], Oguri, Shiro, Kinoshita, Yasuko ed. Igakushoin

¹⁰ Moriguchi, Ikuko and Hyoui, Nobuyuki (1993) “*Sengo no Kosshu Eisei de Hokenfu no Hatashita Yakuwari to Primary Health Care - Kokuhaikyoryoku e no Tenbo wo Fumaete* [Accomplishment of Community Public Nurses after WWII and Primary Health Care—Considering the Prospect for International Cooperation], *Kosshu Eisei Kenkyu* [Public Health Research], Vol. 42

¹¹ Ohba, Miyoshi (2002) Second Study on International Cooperation for Population and Development, in Second meeting, June 26, 2002, from conference note.

Box 3-3 Ogyaa (Disabled Children's) Donation

There are a number of examples of mutual aid through charitable foundations in Japan. One is the “Ogyaa (Disabled Children's) Donation” that raises funds for the protection and welfare of children with physical and mental disabilities, and research into pediatric diseases.

In 1963, Dr. Chikae Tohya, an obstetrician and gynecologist practicing in Ohguchi City in Kagoshima Prefecture, heard of the plight of three sisters with severe disabilities living nearby. At that time, it was usual when children were born with disabilities for the families to shut them away from the outside world, but the mother of these three sisters, although poor, was not afraid to bring them out into the open, even taking them to see plays. Impressed by the mother's attitude, Dr. Tohya called on the Ministry of Health and Welfare to recommend an institution that could care for children such as these with severe disabilities, but at the time no such facilities existed.

Dr. Tohya put forward a proposal to the Japan Association for Maternal Welfare (now the Japan Association of Obstetricians and Gynecologists) for a charity to “share the happiness” with unfortunate children, asking for donations from mothers who have given birth to healthy children, and from the doctors and nurses present at the births, and in July 1964 the “Ogyaa Donation” was launched. Collection boxes were placed in maternity wards throughout the country, and money is donated by new mothers, obstetricians, midwives, and nurses. Around ¥140 million was collected during 2001, and by December of that year total donations had reached ¥4,479.3 million. This money has gone to research into childhood disabilities and to 907 institutions caring for disabled children all over the country. It is worthy of note that this mutual aid campaign spread throughout Japan before it became economically affluent.

During the “International Year of the Disabled” in 1981, this foundation was the subject of an article in the English language journal of the Japanese Organization for International Cooperation in Family Planning (JOICFP). The head of the Indonesian Office of the United Nations Children's Fund (UNICEF), Victor Solasara was impressed by the concept, and the following year launched the “Ogyaa Donation” under the aegis of the Indonesian Child Welfare Foundation. It is often said that improvements in maternal and child health, nutrition and the welfare of disabled children in developing countries will require the participation of each individual member of the population, but when individual efforts fail to produce any large scale changes, then initiatives such as the Ogyaa Donation can serve to broaden the scope of mutual aid activities, even in developing countries with serious gaps between rich and poor.

Source: Ogyaa Donation Foundation homepage (<http://www.ogyaa.or.jp/contents.htm>), Institute for International Cooperation, Japan International Cooperation Agency (2003) *Second Study on International Cooperation for Population and Development —New Insights from Japanese Experience* p. 87

children, mothers and education conducted soon after the launch of the Aiiku-kai revealed a particularly high infant mortality rate in farming and fishing villages. Their response was to involve entire villages, in the course of their everyday activities, in improving their understanding of maternal and child health issues, promote home-

based care, and thereby lower the infant mortality rate. This was the program of “Aiiku Groups” in “Model Aiiku Villages.”

In designated Aiiku Villages, Aiiku Groups were set up comprising female volunteers from the community, who underwent a course of training from a public health professional. They then

conducted awareness campaigns, visiting every household in the area, promoting and protecting the health of mothers and children. These Aiiku Group members were a valuable human resource, supporting the public health centers in community activities such as health consultations and group health checks. They were also able to identify local health problems, and initiate programs suiting the actual needs of the community, such as home help for families with large numbers of children, and the provision of child care during the busy season for farmers. Aiiku Groups held regular study groups, working to improve their knowledge and skills bases¹².

This program became an official program of the Ministry of Health and Welfare in 1939, and was further expanded in the form of the “Aiiku Designated Village Program.” Starting with five Aiiku Model Villages nationwide in 1936, the program was expanded in collaboration with municipalities, public health centers, and medical societies, and at its pre-war peak more than 1,200 Aiiku Model Villages were designated nationwide, in 35 prefectures, contributing to improvements in maternal and child health¹³. In Aiiku Groups activities, they were not only visited by the Ministry of Health and Welfare but also invited external specialists such as trainees from other prefectures and UNICEF staffs. These factors helped to build confidence in the residents of the regions and also strengthened the organization and deepened their awareness. Maternal and Child Health Promotion activities were led all by these activities.

In 1938 the “Nippon Aiiku Research Institute of Maternal-Child Health and Welfare” was established within the Aiiku-kai, and it has played a leading role in research in the field of maternal and child health, conducting

comprehensive and practical research into physical and emotional issues concerning women and children.

(2) Maternal and Child Health Promoters

“Maternal and Child Health Promoters” are volunteers involved in community-based maternal and child health activities. They are selected by the local mayor from popular married women with experience of childrearing, and participate in maternal and child health programs in their municipality in their capacity as Maternal and Child Health Promoters. Their duties may vary between municipalities, but in general they assist in infant health checks, conduct painstaking home visits to convince non-participants to undertake health checks, perform antenatal and postnatal home visits and provide advice and guidance regarding childrearing, investigations and other matters.

An example is Ishigaki City in Okinawa Prefecture, where in addition the Maternal and Child Health Promoters assist mothers and children in a number of ways, recruiting participants in “parent education classes,” conducting educational diet classes, and participating in government maternal and child health programs as civilian assistants. Other examples are regular study meetings held at the instigation of the local Maternal and Child Health Promoters, “Town Maternal and Child Health Promoter Liaison Meetings” linking multiple municipalities and independently seeking out training opportunities to improve skills¹⁴.

Activities of Maternal and Child Health Promoters, initially recruited as volunteers, became a state subsidized program under the Ministry of Health and Welfare in 1968, and they are now to be found nationwide.

¹² Boshi Aiiku-kai homepage (http://www.aiiku.or.jp/aiiku/enkaku/enkaku_a.htm)

¹³ Ministry of Health and Welfare (1988) *Hokenjo 50 Nenshi* [Fifty years' History of Public Health Center] Nihon Koshu Eisei Kyokai

¹⁴ Inafuku et al. supervising editor, Ogawa, Sumiko ed. (2002) “Epidemiological Transition and Administrative Measures Taken in Okinawa,” Cooperation by Video Pack Nippon, Produced by Okinawa International Centre, JICA.

Box 3-4 Expected Results of Mother's Handbook System

The following medical results were anticipated with the introduction of the Mother's Handbook system.

According to a survey conducted by the Tokyo University Medical School, the main causes of stillbirth were toxemia of pregnancy (approx. 20%), maceration at birth due to syphilis (approx. 19%), and malpresentation (approx. 10%), so there was urgent need of a program to reduce these three causes. In 1941, Dr. Mitsuo Seki of the Department of Obstetrics and Gynecology of the Tokyo University Medical School published his estimates of how many miscarriages, stillbirths and premature births could be prevented by the introduction of a Mother's Handbook system, registering pregnant women and conducting regular antenatal health checks, and dealing promptly with any abnormalities.

His findings were, "Early detection and treatment of toxemia of pregnancy will prevent 20,000 deaths, early detection of syphilis, the cause of macerated stillborn fetuses, a further 10,000, and moving from home delivery to institutional delivery will prevent a further 5,000 deaths due to malpresentation. In addition, 60,000 deaths in infancy are caused every year by congenital weakness due to prematurity, so careful monitoring during pregnancy should save another 20,000 lives. Miscarriages are difficult to put a figure to, but early detection and treatment of other causes should reduce stillbirths and deaths in infancy by 70,000 to 80,000 each year."

Source: Nishiuchi, Masahiko and Boshi Hokenshi Kankou Inkai (1988) *Nihon no Boshi Hoken to Moriyama Yutaka* [Maternal and Child Health in Japan and Moriyama Yutaka], Japan Family Planning Association, Inc.

2-4 Maternal and Child Health (MCH) Handbook System

The Maternal and Child Health Handbook System was commenced in Japan with the issue of the Mother's Handbook in 1942. This was developed by the Ministry of Health and Welfare, based on a handbook issued to pregnant women by the University of Hamburg¹⁵ in Germany as a response to serious population problems associated with miscarriages, stillbirths and premature births. To reduce the incidence of abnormal births, it was considered necessary to first be cognizant of all pregnant women, and then encourage them to have regular antenatal health checks. The Mother's Handbook System was proposed as a way of registering pregnant women (see Box 2-3).

It is characteristic of the MCH Handbook System that handbooks were not just issued, but it was the first system in the world to register all pregnant women¹⁶, and also provided antenatal checks and vaccinations free of charge to women in possession of a handbook¹⁷, and issued extra food and maternity goods. These easily understood merits for pregnant women helped to popularize the MCH Handbook System.

The first Mother's Handbook was rather simple, containing guidelines for pregnant women and new mothers, sections to record observations about the health of mother and child, and a section to record the details of the birth. These records of the progress of the pregnancy and the birth contained important information for the next

¹⁵ This Mother's Handbook was a system unique to the University of Hamburg, whereby pregnant women carried their own health record, and was not in official use.

¹⁶ Ohba, Miyoshi (2002) Second Study on International Cooperation for Population and Development, in Second meeting, June 26, 2002, from conference note.

¹⁷ Pre-war antenatal health checks were not free, and there was no vaccination service.

pregnancy and the birth¹⁸.

Reborn post-war in 1947 as the Mother and Child Handbook, the guidelines function was expanded to include not only antenatal and postnatal health advice, but also child raising tips. A further name change in 1965 saw the birth of the present Maternal and Child Health Handbook, that has now become a booklet of some 70 pages, with a different version produced by each local government authority. It comprises two parts, one common to all localities (medical records, notations by guardians, etc.), and an information section tailored to the particular circumstances of the region (administrative information, public health and childrearing information). The literacy level among Japanese mothers is high, so the handbook contains few pictures and diagrams, and has many pages for the parents to make notes.

2-5 Promulgation of “Mother’s Body Protection Law” (Formerly “Eugenic Protection Law”)

During the post-war period of chaos and poverty, few had an accurate knowledge of contraception, and in any case it was difficult to obtain contraceptive devices and products. This resulted in many unwanted pregnancies, and a rapid rise in the number of illegal abortions. Many women died from such unsafe procedures, or suffered from unfortunate consequences, leading to an extremely serious situation for women’s health¹⁹.

As a response to this situation, with the primary aim of protecting women’s bodies, the “Eugenic Protection Law” was implemented in September 1948. This law allowed women to have

an abortion by a medical specialist under certain conditions, and is thought to have contributed greatly to subsequent decreases in the infant and maternal mortality rates (see Chapter 4 “Family Planning” for details).

2-6 Provision of Maternity Clinics in Rural Townships

Although the post-war period saw a steady decline in the infant mortality rate, over the post-war decade no improvement was seen in the maternal mortality rate, 160.1 (per 100,000 live births) in 1947 and 178.8 in 1955. In comparison to the significant improvements seen in the 20 year period commencing in 1940 in Western countries (MMR for 1960: U.S. 37.1; France 51.6; Netherlands 39.4; Sweden 37.2)²⁰, Japan was left behind in this area²¹.

In 1954, the Ministry of Health and Welfare issued a directive, “Strengthening Health Guidance for Pregnant Women and New Mothers,” with the aims of reinforcing the various antenatal and postnatal programs, and promoting institutional delivery. As part of the promotion of institutional delivery, in 1958 the Ministry of Health and Welfare commenced a program of assistance for rural townships without maternity clinics or medical institutions to establish “Maternal and Child Health Centers.” These centers were warmly welcomed by pregnant women and mothers, as a place to give birth safely and hygienically, also as a worry-free environment to rest in after giving birth, thereby improving the health of the mothers and children of the village, and providing them emotional stability. Health guidance was also provided during the postnatal rest period²².

¹⁸ Nishiuchi, Masahiko and Boshi Hokenshi Kanko Inkai (1988) *Nihon no Boshi Hoken to Moriyama Yutaka* [Maternal and Child Health in Japan and Moriyama Yutaka], Japan Family Planning Association, Inc.

¹⁹ *ibid.*

²⁰ Boshi Eisei Kenkyukai ed. (2003a) *Boshi Hoken no Shunaru Tokei Heisei 14 Nendo* [Statistics of Maternal and Child Health 2002], Boshi Hoken Jigyodan.

²¹ Ministry of Health and Welfare (1988) *Hokenjo 50 Nenshi* [Fifty Years’ History of Public Health Center] Nihon Koshu Eisei Kyokai p. 1102, Ministry of Health and Welfare (1961) Annual Report on Health and Welfare, p. 188

²² Ministry of Health and Welfare (1988) *Hokenjo 50 Nenshi* [Fifty Years’ History of Public Health Center] Nihon Koshu Eisei Kyokai, and Nishiuchi, Boshi Hokenshi Kankou Inkai (1988) *Nihon no Boshi Hoken to Moriyama Yutaka* [Maternal and Child Health in Japan and Moriyama Yutaka], Japan Family Planning Association, Inc.

2-7 Maintenance of Maternal and Child Health Statistics

Through the implementation in 1872 of a modern family registration system, Japan began to collect something like modern population vital statistics, covering changes in population groups such as births, deaths, inflows and outflows. This was followed in 1899 by the introduction of official “Population Vital Statistics.” There were, however, a number of problems with the collation of births and deaths, and looked at in comparison to the scientific standards of the post-war maternal and child health statistics, they leave much to be desired.

In accordance with the philosophy of the post-war Maternal and Child Health Division Head, “To prevent and treat, we must first discover the cause, and for that we need accurate statistical information,” from that time maternal and child health statistics have been maintained and strengthened. The “Maternal and Child Health Statistics of Japan” have been published annually since the first issue in 1949, and have played a major role in policy formulation in the administration of maternal and child health²³.

3. Improvements in Maternal and Child Health in Developing Countries in the Light of Japanese Experience

3-1 Preconditions for the Application of Japanese Experience

The circumstances of maternal and child health in developing countries differ greatly from those in Japan. Developing countries face a number of fundamental problems in the field of public health and medical services, including shortages of maternal and child health personnel and a lack of equipment and facilities, so Japan’s experience cannot be applied unchanged in the field²⁴. In

particular in the area of maternal and child health, many traditional customs in relation to antenatal care and birth are still strongly adhered to, and any maternal and child health programs must respect the culture and customs.

On the global level, enough personnel must be available to provide the minimum level of maternal and child health services. In the history of the development of maternal and child health in Japan, a large part is due to the high quality of public health nurses and midwives working on the front line, and the fact that quantitative development at a uniform level was possible. If we consider that all basic maternal and child health services, such as antenatal care, care during birth, height and weight measurements, and vaccinations for children, are all individual health care services, then we realize that the provision of trained personnel to the community is of prime importance.

In Japan, at the community level maternal and child health activities developed in close collaboration with the Livelihood Improvement Movement, community education programs in the agricultural field, and community center activities. In this sense, in developing countries as well, it will be important to provide maternal and child health services and at the same time link up with other sectors. In Japan, the high level of literacy among parents, the clients of maternal and child health services, has been a big advantage from the viewpoint of health education. In developing countries, where the level of literacy among parents may not be as high, modifications, such as the use of illustrations in health education and awareness campaigns, should be considered.

As maternal and child health is so closely associated with the culture and traditions of the community, and socioeconomic standing, attempts should not be made to apply Japan’s experience directly. Rather hints should be gleaned from Japan’s experience, and used to develop new

²³ Ohbayashi, Michiko (1989) *Josanpu no Sengo* [Midwives in the Post-war Period], Keiso Shobo.

²⁴ Nakamura, Yasuhide (2001) “*Koshueisei ni Kokkyo ha Nai* [Public Health Knows No Borders],” *Hokenfu Zasshi* [Magazine for Community Public Health Nurses], Vol. 57, No. 4, pp. 304-306

strategies suited to the local situation.

With this premise in mind, out of the Japanese experience in maternal and child health we will provide some approaches that may be applicable to developing countries.

3-2 Promotion of Women-only Professions

In making improvements in maternal and child health, the personnel involved are important, and in order to respond closely to the needs of the community, the role of personnel positioned close to the residents is particularly important. In Japan, public health nurses and midwives, posted within the community, played this important role. In developing countries, public health nurses are active in the field of public health, ranked highly as a profession after doctors and medical assistants. Their numbers are severely limited, however, making outreach activities such as Japanese public health nurses performed before and immediately after the war difficult, and they cannot provide a service finely attuned to the needs of the community. On the other hand, health volunteers (or health workers), who work under public health nurses to provide health services directly to the community, cannot expect remuneration of the level received by Japanese public health nurses, and it is difficult to maintain a high degree of motivation in these circumstances.

In Japan, public health nurses and midwives worked in farming and fishing villages where long-established customs are strongly adhered to, and slowly changed through home visits and health education study groups the people's thinking in regards to antenatal and postnatal health checks, hygienic and safe births, neonatal care, and improved nutrition, growth and development of children. These activities contributed greatly to improvements in the level of maternal and child health. The activities of practicing midwives, working out of facilities such as birthing clinics, are

also worthy of note. The reason for their success is based on their philosophy as a profession, to "protect the lives of mother and child."

It is essential, and also difficult, to produce dedicated professionals such as these in developing countries. The concept of "a natural style of childbirth based on relationships between people and the importance of life" adopted by practicing midwives has also begun to attract attention, within the context of the Western type thinking that medically supervised childbirth is best, in the assistance field. The JICA technical assistance "Maternal and Child Health Project in the State of Ceara, Brazil" demonstrated the validity of the concept "Humanized childbirth, maximizing the ability to give birth and the ability to be born"²⁵.

A number of studies are presently under way analyzing the factors that determine which activities undertaken by public health nurses and nurse midwives are effective in improving maternal and child health outcomes. We anticipate that these studies will systematically and scientifically demonstrate the validity of the Japanese approach, including the "humanizing of childbirth." We further anticipate that their results will elucidate factors that will potentially improve maternal and child health on a global scale.

3-3 Encouragement of Community Participation

There are a number of points of similarity between community-based activities, dominated by women, such as the Aiku Groups and Maternal and Child Health Promoters, and the activities of health volunteers in developing countries. The Japanese track record, whereby government sets up an organization, and in the process the community residents become aware of their own needs, and initiate their own programs, should also be of interest to developing countries. The results of these activities are almost invariably only available

²⁵ Misago, Chizuru (June 11, 2003) Speech "Trends in Safe Motherhood and Future: Toward Establishing System for Safety Care," Jointly hosted by the Ministry of Foreign Affairs and UNICEF, 'Symposium on Maternal Health Care in Developing Countries.'

Box 3-5 “Projeto Luz” (Project of Light) —Humanizing Maternity Care in Brazil

In the poorer parts of Brazil, women must give birth without the help of a midwife, whereas among rich families there is a trend to opt for birth by Caesarian section, requiring the full range of medical services. Against this background, JICA ran a family planning/maternal and child health project, introducing the concept of “Humanizing Maternity Care,” in the State of Ceara, in the northeast of the country, from 1996 to 2001. With the aim of increasing the levels of awareness, knowledge and skills required to manage pregnancy and birth, personnel training was conducted at a variety of levels, including training for doctors, nurses, and assistant nurses to improve maternity services, and a “Reformer Training Course” to train community leaders to promote humanization of birth. Other activities included the introduction to participating institutions within the State of Ceara of a unified system of care through labor, delivery and the post-delivery period; the establishment of a “house to wait for birth,” to which women with high risk pregnancies, such as elderly primigravida, are admitted prior to giving birth; and the sale of low cost condoms for the prevention of AIDS and other sexually transmitted diseases.

This project was widely known as “Projeto Luz,” and provided opportunities for friendly interaction between Japanese midwives and medical services personnel from the local maternity facilities. The system developed in the state of Ceara spread to other states, and in November 2000 an “International Symposium of the Humanization of Maternity Care” was held, attracting delegates from 25 countries, and producing lively debate concerning the promotion of healthy birth. Following the completion of the project, a system was initiated whereby Brazilian obstetric nurses undergo long term training in Japanese maternity clinics, and learn firsthand from their Japanese counterparts about “Humanizing Maternity Care.” In Ceara State, the local participants in the project have set up a Non-governmental Organization (NGO) to continue “Humanizing Maternity Care” training activities. Their efforts are supported by the NGO “Ceara Support Group,” set up in Japan by former Japanese specialists.

In further recent developments, the Brazilian Ministry of Health issued a directive promoting maternity care by obstetric nurses, and the humanization of maternity care has spread to other Latin American countries.

Source: Misago, Chizuru (June 11, 2003) Speech “Trends in Safe Motherhood and Future: Toward Establishing System for Safety Care,” Jointly hosted by the Ministry of Foreign Affairs and UNICEF, ‘Symposium on Maternal Health Care in Developing Countries.’

Japan International Cooperation Agency (2002) Annual Evaluation Report 2002, JICA.

Haneda, Kiyoshi, Misago, Chizuru, Onuki, Daisuke, Umenai, Takusei (1999) “The Factors that Influence Infant Mortality Rate—the Case Study on Ceara State in Brazil,” *Kokusai Kyoryoku Kenkyu* [Research on International Cooperation]

Fujiwara, Miyuki (2002) “23rd International Nursing Research Report—From the Experience on Project of Light in Brazil,” Japanese Society for International Nursing News Letter No. 24 (Jan 1, 2002)
(<http://www.geocities.com/kokusai-kango/new24.htm>)

Fujimoto, Takuro (2002) “Many Cases of Caesarian Section in Brazil (Volume 1)—Reconsidering Natural Delivery—Significant Physical Response of Fetus and Mother’s Body,” *Jornal do Nikkei* (March 6, 2002)
(<http://www.nikkeishimbun.com.br/020306-72colonia.html>)

in the Japanese language, and in many cases the records are in the form of commemorative journals with a limited distribution. This has resulted in a lack of publicity, and scant awareness beyond Japan's borders of the results of these programs. Much effort will be required to put together in English a history of community participation in Japan.

3-4 Maternal and Child Health Handbook Program

Maternal and Child Health (MCH) Handbooks are already in use in a number of countries. South Korea and Thailand produced their own versions based on the Japanese Handbook. JICA projects in Indonesia and Mexico included cooperation in the development of MCH Handbooks. MCH Handbook systems are in development in Laos, Vietnam, Brazil, and Bangladesh, through cooperation with Japanese NGO's and universities. Each country has its own political and economic situation, and its own maternal and child health system, so it goes without saying that the circumstances of the

individual country need to be considered before an MCH Handbook can be introduced. We will therefore discuss some actual examples of countries that have successfully introduced MCH Handbook systems, and elicit some general principles for the introduction of MCH Handbooks to developing countries.

Firstly, it is important that the contents of the MCH Handbook are appropriate to the needs of families and the community. Translations from a Japanese Handbook were not used in the development of a MCH Handbook for Indonesia, but rather Indonesians developed a new Handbook in line with their own requirements. MCH Handbooks issued in the Mexican State of Vera Cruz include a picture of the father on the cover, and pages concerning fathers' health, in consideration of gender equality and male participation in childrearing. The Handbook is called "My Health Record" (in Spanish, Historia De Mi Salud), making the child the star of the show. It is only a matter of course that there are major differences between the MCH Handbooks developed in each country and the Japanese

Box 3-6 Maternal and Child Health Handbooks in Indonesia

Indonesian doctors studying in Japan were impressed by the Japanese Maternal and Child Health (MCH) Handbook, and in 1994 an Indonesian version of the MCH Handbook was developed in central Java. Between 1998 and 2003, a JICA project "A Health Handbook for Mothers and Children" was conducted in Indonesia, as a result of which an MCH Handbook program has been included in Indonesian government maternal and child health policy. Characteristic of the Indonesian MCH Handbook is that no translations from the Japanese Handbook were included, instead source material already available in Indonesia was used, and that Indonesian nationals were instrumental in developing and distributing their own version. In consideration of the multiracial Indonesian society, a different Handbook cover was produced for each state, giving a strong regional flavor.

The Indonesian MCH Handbook is a valuable tool for health education for mothers, and has proved useful not just for parents, but for public health center staff and health volunteers. The Handbook is also believed to have improved communications between maternal and child health personnel and parents. With the cooperation of not only JICA, but also the World Bank, international organizations such as the WHO, philanthropic organizations, and international NGO's, approximately 1.4 millions MCH Handbooks have been issued to mothers in 25 Indonesian States.

original. Future Handbooks developed in the various countries and regions should be based on vaccination records, antenatal health check records, growth charts, and health education pamphlets already in use. In this way, the new Handbook should automatically be responsive to the requirements of families and the community.

Secondly, before an MCH Handbook program can be introduced, enough personnel must be available to provide the minimum level of maternal and child health services on a nationwide basis. In Japan's experience in maternal and child health, not confined to just the MCH Handbook, community-based personnel have played a major role. In regions and countries where the provision of basic maternal and child health services, such as antenatal care, and care during birth, height and weight measurements, and vaccinations for children, is inadequate, then the provision of basic services must be addressed before an MCH Handbook can be introduced.

Thirdly, consideration must be given to the literacy level of the users, the parents. In countries and regions with low literacy rates, the development of a Handbook with a high proportion of pictures and illustrations will broaden its acceptance. At first, it was thought that an MCH Handbook could not be widely distributed if the literacy rate was below a certain level. Vaccination record cards do achieve a certain level of distribution, however, irrespective of literacy rates. From the Indonesian experience, if there is someone within the family who can read, then mothers will appreciate the value of the Handbook even if illiterate, and use it appropriately.

Fourthly, it is worthy of consideration that, in the Japanese experience the MCH Handbook was not merely issued, but was part of an overall program including registration and maternal and child health services.

3-5 Provision of Birthing Places and Improvements in their Quality

A worry-free environment is important for safe childbirth. Health centers or health posts are now provided in remote regions even in developing countries, but in many cases the facilities make one think, "I would not like to have a baby in a place like this." Some Rural Health Units (RHU, corresponding to Japanese public health centers) in the Philippines, through the efforts and improvisations of the unit head, have an air of cleanliness and warmth²⁶ even under the same restricted financial conditions.

In rural mountain villages in Japan in the 1960's, there were no birthing centers or medical institutions, and in some cases the absence of midwife meant home births without any supervision. In these regions, old traditions regarding childbirth as unclean and women as inferior are still held strongly, and these have long been detrimental to the health of women and children. It is not difficult to comprehend that the simple act of establishing maternal and child health centers, where women giving birth can concentrate on the matter at hand, under the supervision of professional midwives, was useful in reducing the maternal and infant mortality rates.

When Japanese maternal and child health centers were established, it was not just a matter of erecting a new building ("hardware"); rather there were innovations on the "software" side in producing a positive, cheerful atmosphere. Based on the above-mentioned concept of "humanized childbirth," research conducted at Japanese maternal and child health centers and maternity clinics should provide information that will assist in improving the quality of health centers and health posts in developing countries.

²⁶ Japan International Cooperation Agency (2001) "Evaluation on Specific Topic: Evaluation of Population and Health Sector in Philippines (draft)"

3-6 Maintenance of Maternal and Child Health Statistics

In order to improve maternal and child health, a thorough grasp of present problems and elucidation of their causes is needed, in turn requiring accurate statistical data. There are still few developing countries where it could be said sufficient effort is made to collate statistical data regarding maternal and child health indicators. Maternal and child health statistics were collected from Japan at a relatively early stage, and used in policy formulation. This experience should be of value to developing countries in formulating policy based on an accurate grasp of the present situation.

4. Conclusion

There are many examples in the field of maternal and child health where the wisdom of developing countries has been transferred to

developed countries. An example is the Columbian method of “kangaroo care” for low birth weight babies, the benefits of which have been confirmed scientifically in the U.S. This method is currently in use in Japanese neonatal care units.

Japan has also learned a great deal through the process of adapting the MCH handbook to developing countries in the light of Japan's experience. For example, during the half-century since the issue of the first Mother's Handbooks, no user surveys had been conducted in Japan. Through cooperation with developing countries in producing their own versions, the Ministry of Health and Welfare recognized the need for a user survey, and taking hints from the Indonesian questionnaire, conducted a similar survey in Japan. The reality that much can be learned from developing countries underlines the desirability of international cooperation.

Chapter 4

Family Planning

As a result the first two inter-governmental conferences concerning population issues, the World Population Conference held in Bucharest (1974), and the International Population Conference (1984) held ten years later in Mexico City, many developing countries concluded that a rapid population increase created a strain on resources, hampered economic development and hindered their affluence, leading them to introduce government-led family planning programs as a means of limiting population growth.

However, family planning programs are closely involved with personal lifestyles, and if they are introduced to control national population growth, they are often unable to achieve satisfactory results. Accordingly, at the International Conference on Population and Development (ICPD) in Cairo in 1994, reproductive health/reproductive rights¹ became the central concept. Government representatives from 179 countries adopted a “Program of Action” that strongly shifted the focus of population policy from the macro (national level) to the micro (individual level), from population policy driven by the government to the individual, in other words, individual women. The transition from family planning aimed at population control to a reproductive health/reproductive rights program has not been smooth, however, and many countries have not fulfilled the needs of women who want to use contraception or defer pregnancy.

The contraception prevalence rate in developing regions for all contraception methods is 59% on average, while it is 69% in advanced countries, with the difference continuing to shrink.

There still remain large differences between nations: 4%–40% in Sub-Saharan Africa (excluding South Africa), 5%–75% in South and Central Asia, 24%–75% in Southeast Asia. Even within the same country, differences between the affluent and poor strata have been pointed out as another problem².

Like many developing countries now, Japan was economically weak after the Second World War, and in addition to lagging behind dramatically in the fields of maternal and child health and public health, the population increased explosively. With almost no capital available, health workers and the people fully utilized their knowledge and ideas and made steady progress in family planning and maternal and child health. By combining the fields of family planning and maternal and child health, local residents, particularly women and mothers, received guidance from public health nurses and participated in community activities, with multi-dimensional activities expanding from maternal and child health to family planning, and then to community-based health.

Examples of the various experiences and strategies in the field of family planning in Japan include the fact that family planning was promoted as part of maternal and child health, with the fundamental concept that reproductive self-determination is an individual right. The experiences also include the involvement of community organizations through midwives and public health nurses, and close cooperation between bureaucracy and the community. These are considered meaningful examples of the shift from family planning aimed at controlling

¹ Health and rights relating to sex and reproduction. The situation where everyone has the right to determine the number and birth timing of their own children without being subject to social pressures such as convention, or mental or physical pressures.

² United Nations Population Fund (2002) State of World Population Report 2002.

population growth, to family planning based on the concept of reproductive health/reproductive rights, suitable for application by developing countries in implementing the Cairo "Program of Action."

For that reason, in this chapter we will focus on trends in Japanese initiatives in family planning, particularly after the Second World War, and then discuss the results and challenges arising from these initiatives. We will then summarize Japan's experiences that may be applicable to the challenges faced by developing countries. Furthermore, as examples of international cooperation in the family planning field using Japan's experience, in an appendix at the end of the chapter we will introduce the record of Integration Projects (IP) of the Japanese Organization for International Cooperation in Family Planning (JOICFP).

1. Trends in Family Planning

1-1 Pre-war and Wartime "Birth Control" (1920~1945)

After the First World War (1914~1918), from about 1920 in Japan, people started proclaiming the necessity of birth control (translated into Japanese as "restriction or regulation of the numbers of children"), and a birth control movement was born.

An economic depression followed the First World War, and as the labor movement started to gain prominence, socialists began to urge the need for birth control as part of a program to improve the life of workers. Furthermore, influenced by Margaret Sanger, the forerunner of the birth control movement, the birth control movement started among women's liberation movement members (e.g. Shizue Kato) aiming for health and happiness at the individual level. Although Sanger visited Japan from the USA in 1922, the Japanese government imposed an entry condition completely prohibiting activities promoting family planning. Despite this, reports in the newspapers and other

media had a strong impact in Japan at that time, and family planning became a popular topic in women's magazines. Shizue Kato and others founded the Japan Birth Control Research Association in Tokyo, and contraceptive methods such as the Ogino Rhythm Method (1924) and the Ota Ring (1932) were developed. In 1932, Shizue Kato also underwent training for 3 months at the Sanger Clinic in New York, and after returning to Japan established a birth control clinic in Tokyo.

The rise of militarism in the 1930s led to a policy of "Fukoku Kyohei," or enhancing the wealth and military strength of the country, that called for population increase. The birth control movement was accordingly suppressed as a philosophy contrary to the national interest, and the birth control clinic was closed in 1938. In 1941, the government prohibited contraception, lowered the marriage age, and promoted an average of five children per married couple.

1-2 From Post-war Baby Boom to Promulgation of the "Eugenic Protection Law" (1945~1948)

Following the end of the war in 1945, Japan's population increased sharply due to the demobilization of the armed forces, repatriation from former colonies, leading to a Baby Boom in the 3 years from 1947 to 1949. (From 1945 to 1955, the population increased from 72,150,000 to 90,780,000, while the average annual population increase was at 3.1% in 1950.) Amidst the post-war devastation, living conditions in Japan were extremely poor, with unavoidable shortages of clothing, food and shelter. At that time, there was a lack of accurate knowledge about contraception, and no contraceptive devices available, so there were many unwanted pregnancies. The old Penal Code promulgated in 1880 penal code on abortion crimes³, forcing women to undergo illegal abortions. Many women died, or suffered from complications, as a result of illegal abortions performed under very poor conditions.

³ Abortion is still applicable as a crime now.

In this situation, a movement of diet politicians arose to protect women from dangerous illegal abortions, and in 1948 the Eugenic Protection Law was promulgated, permitting abortion by a medical specialist under specified conditions. In 1949, the Eugenic Protection Law was amended to add “economic reasons” to the conditions for widening the indications for induced abortions. In the same year, the manufacture and sale of contraceptive pharmaceuticals, previously prohibited, was permitted.

1-3 From Rapid Increase in Abortion to the Widespread Use of Family Planning (1949~1959)

Following the 1949 amendments, further revisions to the Eugenic Protection Law in 1952 allowed abortions to be performed in accordance with the judgment of the supervising doctor, without having to wait for the hitherto complicated evaluation by the official institution. As a result, the number of abortions increased markedly from 1949 to 1955, with the number of applications for induced abortion reaching a historical high of 1,170,000 in 1955.

In response to this situation, a “Cabinet Decision Regarding Popularization of Family Planning” was issued in 1951, stating that “Induced abortion is necessary in some cases from the viewpoint of protecting the mother’s body, but the current high frequency of induced abortions is not good for the mother, so a changeover to family planning is desirable.” The government then began to address family planning in earnest. Following this Cabinet Decision, the Eugenic Protection Law was again amended in 1952, making it mandatory to provide a “Eugenic Protection Counseling Center” in all public health centers throughout Japan, and a system of family planning workers was established, comprising

former midwives, public health nurses and general nurses. Training sessions were held in each prefecture for accreditation as family planning workers that provide family planning counseling as well. In addition to such human development programs, family planning promotion activities were also commenced centered on the Eugenic Protection Counseling Center. This can be said to be the start of Japanese government initiatives in the field of family planning. In many prefectures, however, the infrastructure was not ready and preparation was delayed, so in the four years from 1952-1955 the foundations were laid for later activities, and activity began in earnest in the latter half of 1955⁴.

In October 1955, the Fifth International Conference on Planned Parenthood sponsored by the International Planned Parenthood Federation was held in Tokyo. It was attended by about 500 people from Japan and overseas, including representatives from 16 countries. It was the first international conference to be held in post-war Japan, and was reported extensively by the mass media at the time. This Conference provided a strong stimulus to the family planning movement in Japan, and was the catalyst for a variety of movements concerning family planning.

First, organizations involved in family planning in Japan linked up to prepare for the conference, and in 1954 the Family Planning Federation of Japan was formed, and has since fulfilled the function of the family planning organization representing Japan⁵. Furthermore, this conference promoted cooperation between the government and the private sector, producing strong results as both parties complemented each other’s functions. At the international conference, many doctors, midwives, health workers and

⁴ Kon, Yasuo (2000) “*Waga Kuni no Kazoku Keikaku Undo no Ayumi* [The History of Family Planning Movement in Japan],” *Kazoku Keikaku Binran 2000 - Shoshi Korei Shakai to Ripro Health* [Handbook on Family Planning 2000 - Low Birthrate, Aging Population, and Reproductive Health], Japan Family Planning Association, Inc.

⁵ The Japan Family Planning Promotion Association (described in more detail later) is a representative body belonging to the Family Planning Federation.

Table 4-1 History of Family Planning

Year	Policy, Movement, etc.	Societal Trends
1876	Introduction of Malthus's "Population Theory" to Japan	
1880	Old Penal Code enacted (abortion made a crime)	
1914		· Commencement of First World War
1918		· Armistice ends First World War
1922	Margaret Sanger visits Japan. Family planning movement flourishes.	
1923		· Kanto Daishinsai (Great Kanto Earthquake). Enter age of pressure to limit population growth
1937	Promulgation of Public Health Center Law	
1938	Promulgation of Maternal and Child Protection Law Establishment of Ministry of Health and Welfare	
1939		· Commencement of Second World War
1940	Promulgation of National Physical Strength Law	
1941	Promulgation of National Eugenic Law Population policy establishment regulations decided	· Enter period of "Give Birth and Multiply"
1942	Public health nurse system commenced Mother's Handbook System commenced	
1945		· Japan defeated in the Second World War
1947	Maternal and Child Health Handbook replaces Pregnant Mother's Handbook	· First Baby Boom (1947-49)
1948	Promulgation and enactment of Eugenic Protection Law Population Association of Japan established	
1949	Eugenic Protection Law amended (Some abortions permitted for economic reasons) Cabinet creates "Council on Population Committee"	
1950	National Institute of Public Health commences system of "Family Planning Model Villages" (~1957) Cabinet "Council on Population Committee" abolished Mainichi Newspaper Population Problems Research Council starts "National Family Planning Public Opinion Poll" (thereafter conducted annually)	· United Nations Children's Fund (UNICEF) provides material assistance (~64)
1951	"Cabinet Decision Concerning Extension of Family Planning" announced	
1952	"Family Planning Extension Guidelines" announced Eugenic Protection Law amended (creation of Eugenic Protection Consultation Clinics, creation of Family Planning Worker System) New Life Movement started by business group	· Government launches population policy
1953	Institute for Research on Population Problems established as an advisory group to the Minister of Health and Welfare Institute for Research on Population Problems announces "Proposal concerning Quantitative Population Adjustments"	
1954	Japan Family Planning Promotion Association (now the Japan Family Planning Association) established Family Planning Federation of Japan formed Japan invited as representative of developing countries to World Population Conference in Rome (Aug-Sept)	
1955	IPPF Fifth International Conference on Planned Parenthood held (October, Tokyo) Special measures to allow sale of contraceptives by family planning workers. "Family Planning Special Project" commenced for low-income earners (cost of contraceptives paid by government) "Home Life Research Association" formed	· Number of abortions peaks nationally
1956	"Family Planning Research Committee" created First Annual Family Planning National Conference held	· Economic White Paper "It's not post-war any more"
1959	Institute of Research on Population Problems publishes first "Population White Paper" Family Planning moves from Public Health Department to Children's Department, integrated into maternal and child welfare policy	
1960	Ikeda Cabinet formed. "National Income Doubling Plan" Institutional delivery exceed 50% of all births	· Around 1960, the contraception prevalence rate reached 43%, and overtook abortion rate · Institutional delivery exceed 50% of all births · Against a background of a shortage of young labor and the depopulation of rural villages, the "No need for family planning" theory emerged, and family planning policy rapidly weakened and was entrusted to the private sector
1968	Japanese Organization for International Cooperation in Family Planning (JOICFP) established	
1972	Second Asian Population Convention (Tokyo)	
1973	Population Problem Cooperation Association formed.	
1974	Ota Ring (IUD) approved globally	
1977	Two new types of IUD approved.	
1994	International Conference on Population and Development held (Cairo)	
1996	Eugenic Protection Law revised, becomes Mother's Body Protection Law	
1999	Low-dosage oral contraceptive (Pill) approved	
2000	Institute for Research on Population Problems eliminated in reorganization of government ministries and departments	
2002	Family Planning Federation of Japan disbanded (Absorbed into Japan Family Planning Association)	

community activists interested in family planning gathered from all over Japan for enthusiastic lectures and discussions. As a result, in 1956 the First National Conference for Family Planning Promotion was organized and sponsored jointly by the Ministry of Health and Welfare and the Family Planning Federation of Japan, since which time the conference has been held once a year. The Family Planning Federation of Japan represents Japan's family planning bodies on the International Planned Parenthood Federation, and also participated in the World Population Conference held in Rome in 1954.

The family planning program launched under government leadership since 1952 started to develop from the second half of 1955 as described above. As a result of this, the abortion rate began to decline after peaking in 1955 when the family planning program was undertaken in earnest (see Figure 4-1).

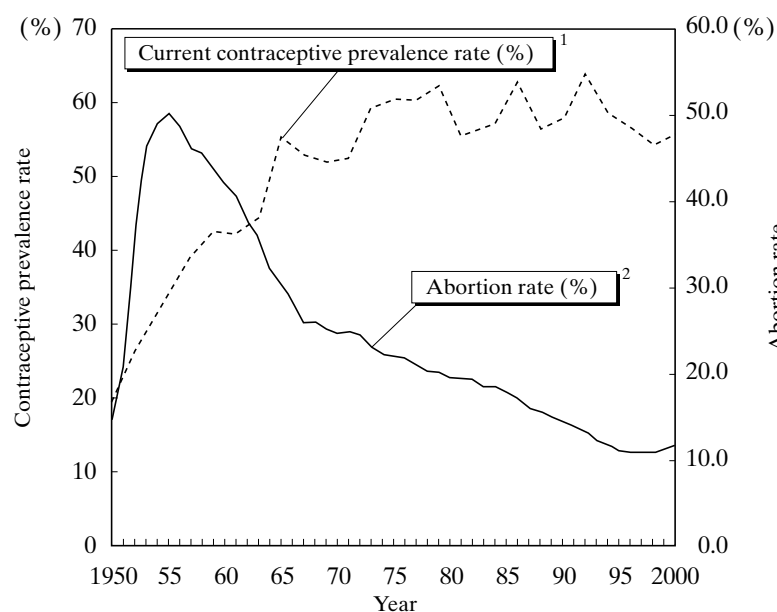
1-4 The Popularity of Family Planning and Present Challenges (1960~present)

(1) Spread of Family Planning and the Start of Reproductive Health/Reproductive Rights

As a result of the above mentioned activities, the contraceptive prevalence rate reached 43% around 1960, overtaking the abortion rate, and Japan's initiatives in the field of family planning began to show definite results (see Figure 4-1).

The Ikeda Cabinet was formed in 1960 and the "National Income Doubling Policy" was proposed. As the government gave first priority to the economy and began to focus on strengthening export-related industries, it rapidly lost enthusiasm for family planning policy. Furthermore, when a shortage of young workers emerged around 1965 accompanying Japan's rapid economic development, the "No need for family planning" theory started spreading among the business world and mayors of towns and villages, stating that there was no need for the administration

Figure 4-1 Contraceptive Prevalence Rate and Abortion Rate



N.B.:1) The current contraceptive prevalence rate is the ratio of females using contraceptives at the time of the survey to the total respondents to the survey, which targeted married women under the age of 50.

2) The abortion rate is the number of abortions per thousand women between the ages of 15 and 49 (according to the Maternal Health Protection statistics).

Data: Population Problems Research Council of the Mainichi Newspaper, Statistics and Information Department, Cabinet Secretariat, Ministry of Health, Labour and Welfare.

Source: National Institute of Population and Social Security Research

to promote “family planning” that might lead to “population reduction.”

When males left rural villages to look for cash income in the cities, their wives were burdened with the farm management in addition to housework and child-raising. If they became pregnant during the farming season, it was a large drain on the household income, so abortions were unavoidable. For public health nurses and midwives working in rural villages, contraception guidance was therefore a pressing problem that could not be divorced from their other duties.

As a result, since the government's family planning policy was largely weakened, the officials provided contraception consultation and guidance when necessary as part of maternal and child health guidance. The main family planning activities shifted toward activities by non-governmental organizations. In 1977, “family planning special consultation services” (genetic counseling) were entrusted to the Japan Family Planning Association as a new project for the Ministry of Health and Welfare. In 1984 a budget was allotted for an Adolescent Counseling Project as part of the “Healthy Motherhood Promotion Project,” and the Japan Family Planning Association began to train adolescent counselors, thus creating a national network that continues to the present.

In the light of the low birth rate and the above mentioned socioeconomic changes, proposed amendments to the Eugenic Protection Law to apply stricter conditions for abortions were repeatedly submitted to the diet (1972~73 and 1982~83), citing such reasons as “the indications for abortions are too broad” and “the low birth rate is a problem.” Advocacy campaigns led by the Family Planning Federation of Japan have opposed these amendments on the grounds that it was illogical to

severely restrict abortions when family planning guidance and services were inadequate. The indications for abortions in the Eugenic Protection Law have therefore remained unchanged⁶.

From around this time, even in Japan, women began to assert that if the Eugenic Protection Law was going to be amended, then it was about time that the law as a whole should be reviewed from a woman's perspective. Similar women's movements developed at a global level after the Program of Action received international approval at the International Conference on Population and Development held in Cairo in 1994⁷. Reproductive health/reproductive rights became the central concept there, and the focus of population policy shifted sharply from the macro (national level) to the micro (personal). The main driver of population policy shifted from governments to individuals, namely women, and family planning assumed significance, not for population control, but as a part of reproductive health/reproductive rights, i.e. the right of people (especially women) to make their own decisions concerning pregnancy and childbirth⁸.

(2) Current Challenges

While Japan has achieved a certain level of results in the field of family planning as described above, from the viewpoint of reproductive health/reproductive rights, many challenges still remain to be tackled as described below.

In Japan, condoms are overwhelmingly utilized as the most popular contraceptive method (see Box 4-4, Table 4-2), with the current range of alternatives still limited. (For example, the low-dosage oral contraceptive pill was finally approved in June 1999, the copper-coated IUD approved in July

⁶ The concept of eugenic protection enshrined in the Eugenic Protection Law has attracted criticism from the time it was promulgated. In 1996 the law was extensively revised, eliminating all eugenic concepts, and renamed the “Mother's Body Protection Law.”

⁷ Muramatsu, Minoru (2002) “*Sengono Kajo Jinko to Sanji Seigen* [Surplus Population and Family Planning after WWII]” Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], pp. 905-910, Baifukan Co., Ltd.

⁸ Institute for International Cooperation, Japan International Cooperation Agency (2003) “Second Study on International Cooperation for Population and Development - New Insights from Japanese Experience” Japan International Cooperation Agency.

1999, and the female condom was approved in November 1999, but usage has been slow.) Despite the fact that the emergency contraception pill is an effective method for preventing undesired pregnancy, it still has not been approved.

The number of abortions is increasing in the under-twenty age group, as are sexually transmitted diseases (STDs), necessitating new reproductive health/reproductive rights policies for youth (see Box 4-2). In general, there has been little public discussion of reproductive health/reproductive rights, and the concept is not widely known.

Challenges that still need to be tackled include the right to sexual self-determination, sex education for youth, and gender-free education.

Between 1947 and 2002, life cycles of Japanese women have changed, so that their average life expectancy has increased from 53.96 to 85.23 years, and the average number of children they bear has declined from 4.54 to 1.32 children. In order to deal with such changes, it is necessary to understand each individual's needs concerning reproductive health/reproductive rights, and enhance the system to deal with these needs.

Table 4-2 Main Methods of Contraception Used in Japan (Mainichi Newspaper Survey) ¹⁾

	1st (1950)	5th (1959)	9th (1967)	11th (1971)	14th (1977)	17th (1984)	20th (1990)	22nd (1994)	24th (1998)	25th (2000)
Condoms	35.6	58.3	65.2	72.7	78.9	80.4	73.9	77.7	77.8	75.3
Ogino Rhythm Method	27.4	40.4	37.4	32.9	27.0	11.8	7.3	7.1	8.4	6.5
IUD, Pill	—	—	6.1	9.6	12.4	8.5	5.7	4.3	4.2	4.2
Sterilization	—	6.3	3.6	3.9	5.3	10.5	9.8	7.0	5.9	6.4
Douching, withdrawal ²⁾ , spermicidal jellies, diaphragm, contraceptive sponge	55.0	43.0	26.4	21.0	15.2	6.0	9.0	8.6	9.3	27.5
Basal temperature rhythm method	—	6.1	—	—	—	8.4	8.0	6.8	8.2	9.8
Other, no reply	15.0	5.3	4.2	4.3	3.2	5.4	2.5	3.1	2.6	2.4

N.B.:1) The figures for the 1st to 14th surveys are the proportion of women with contraceptive experience, whereas for the 17th–25th surveys they are proportion of women currently using contraception. Multiple answers were permitted, so totals may exceed 100%.

2) Includes tablets.

Source: Population Problems Research Council of the Mainichi Newspaper (2000)

Box 4-1 Condoms are the Most Popular Form of Contraception in Japan—Why are Condoms So Popular?

Most foreigners are surprised if you tell them that the use of condoms accounts for 75% of all contraception in Japan. The condom is not only a contraceptive method, but also an indispensable method of preventing sexually transmitted diseases. Many overseas countries are working very hard to improve condom usage rates to prevent sexually transmitted diseases such as HIV/AIDS. For this reason, overseas workers in the field of reproductive health/reproductive rights are interested in the situation in Japan and want to know the secret behind this high level of condom usage. It is thought that a number of factors, such as special conditions in the militaristic period starting in the Meiji Era, have combined to contribute to the high level of condom usage rate of 75% in Japan. Here we will put forward some possible reasons based on Japan's family planning experience.

1) Familiarity

During war in the militaristic era, the Japanese Government issued condoms to the armed forces to prevent sexually transmitted diseases and promoted their use, so men were familiar with using

condoms. Much effort was put into producing high quality condoms, and the production technology is now at the top level globally (thickness 0.02 mm).

2) Lack of Choice

After the end of WWII, when people considered family planning with the aim of reviving the economy and improving lifestyles, the only choices were illegal abortions and condoms. From the latter part of the 1960s to the 1970s, the Pill (oral contraceptive) and IUD were in common use in various foreign countries, and there were moves toward obtaining approval for the Pill in Japan. The government expressed concerns about the Pill's side-effects and the possible effect on sexual morals, however, and withheld approval. The low-dosage contraceptive pill was finally approved in 1999.

3) Easy to Use, Easy to Obtain

In 1952, when the government commenced its family planning project, the main contraceptive methods were condoms, the Ogino Rhythm Method and the diaphragm. Of these, the condom is simple and easy to use on the spur of the moment, and unlike the contraceptive pill, the sperm is seen to be caught in a sac, providing visible reassurance. The condom was also popular because it was comparatively cheap (and was distributed free to low-income earners) and could be obtained without needing to consult a doctor.

When the family planning movement started, various initiatives were introduced to make condoms easy to obtain. Women's community groups cooperated with family planning workers to sell and distribute condoms (circular condom boxes known as a "Love Box"), and family planning workers made home visits to provide guidance and sales. Industry groups had family planning networks, and condoms were available by mail order and from pharmacies. They later became easy to obtain through door-to-door sales, vending machines, and convenience stores.

4) Market Forces

When the system of family planning workers selling condoms was approved, the profit margin from distributing condoms became an incentive for family planning workers. Once people had to pay to obtain condoms, they became more critical in their evaluations, leading to the development and marketing of high quality condoms to meet the demands of consumers. (In many developing countries, cheap condoms are distributed free in family planning programs as assistance materials.)

5) Improved Image of Condoms

In Japan, condoms have been used for preventing transmission of sexually transmitted diseases since before the war. In other countries as well, condoms now have a stronger image as a means of preventing transmission of sexually transmitted diseases than as a contraceptive method, making it difficult to popularize them as a contraceptive method. In Japan's case, it is believed that the promotion of condoms as a means of family planning, by trusted family planning workers such as midwives and public health nurses, has been useful in promoting the image of condoms as a contraceptive method. Condoms have also been attractively packaged (like chocolate), are of high quality, come in different styles and quantities (1 dozen, 40, etc.), and are manufactured to meet the demands of consumers and family planning workers.

[Challenges concerning condoms]

In Japan, condoms are often used together with the Ogino Rhythm Method, and abortions are

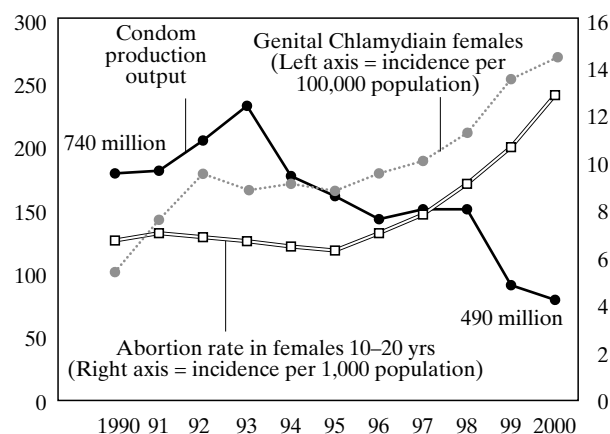
still frequently required to deal with the failures. Studies show that fears by gynecologists that their incomes will be reduced if the numbers of abortions decline have hindered the spread of modern contraceptive methods in Japan⁹. Condoms are easy to obtain and easy to use, so as in various foreign countries, there is little demand for them at family planning clinics or counseling facilities. In Japan these facilities are almost non-existent.

Box 4-2 Reproductive Health and Reproductive Rights among the Japanese Youth

Since the mid-1990s, unprotected sexual intercourse has increased sharply among the younger generation in Japan. According to the “Survey of Youth Sexual Activity” conducted by the Japanese Association for Sex Education almost every 6 years from 1974 to 1999, the first sexual intercourse experience is consistently happening earlier for senior high school students and university students, with the number of sexually active female university students in particular exceeding 50% in the 1999 survey (The Japanese Association for Sex Education home page). In contrast, the number of condoms sold has declined since 1993. Compared with other developed countries, where unwanted pregnancies and sexually transmitted diseases are declining among youths, the numbers are increasing in Japan. For example, since 1996 the incidence of sexually transmitted diseases such as chlamydia and gonorrhea, and the abortion rate, has increased in the 10–20 age groups, with the abortion rate doubling in the past 5 years (see the graph below).

It is therefore a matter of some urgency that the rates of unwanted pregnancies, abortions, and sexually transmitted diseases among Japanese youth are reduced. In order to bring about rapid improvements in these problems, it will be necessary to provide adequate facilities and personnel to provide services (including counseling) that are easily accessible to young people, and also provide education in reproductive health/reproductive rights that provides awareness of the self-determination right to give birth/not give birth, and to improve the social environment to achieve this.

Annual Change in the Abortion Rate, Incidence of Chlamydia and Condom Production Output in Japan



Source: Kihara, Masahiro (2003) “Discussion: The Current Situation and Prospect of the Spread of HIV/AIDS in Asia-Pacific Region,” International Medical Center of Japan, Center for AIDS Research Development (<http://www.acc.go.jp/kenkyu/ekigaku/2003ekigaku/001.htm>)

⁹ Coleman (1983)

2. Main Participants in Family Planning

As described above, the peak of Japanese initiatives in family planning was between 1955 and 1960. The most important characteristic of these initiatives was cooperation between the government and the community, inspired by the Fifth International Conference on Planned Parenthood held in Tokyo in October 1955. In this section, we will mainly introduce the various initiatives during that period, of the government and the community.

2-1 Government Initiatives in Family Planning

(1) Government Initiatives—from the Viewpoint of Protecting the Mother's Body

The following are examples of specific initiatives by government administrative bodies in family planning: (1) The 1949 amendments to the Eugenic Protection Law provided for Eugenic Protection Clinics to be set up at health centers to provide birth control guidance (although this system in fact saw very little use at all); (2) In May 1949, the manufacture and sale of contraceptive pharmaceuticals, that were previously prohibited, was approved; (3) Following a Cabinet resolution in 1951, the Eugenic Protection Law was again amended in 1952, making it mandatory to provide "Eugenic Protection Clinics" in all public health centers throughout Japan, and midwives, public health nurses and nurses created a system of Family Planning Workers, who spread awareness of family planning; (4) In 1955 the Eugenic Protection Law was further amended, allowing Family Planning Workers to sell contraceptive devices and

medicines. (5) From the latter part of 1956, a Family Planning Special Program provided individual guidance and contraceptives at public expense to low-income earners (households on welfare, and borderline cases)¹².

Concerning these government initiatives, Muramatsu wrote that "What is noticeable about this sort of government programs is that from the start they tried to downplay as much as possible the significance of population policy, and pushed public health and maternal health protection to the forefront. From the end of the war to the 1950s, public debate was overwhelmingly about "population," but Muramatsu points out that the government chose "health" as the foundation for its ideology, as an approach that was unlikely to attract criticism¹³.

(2) Debate about Population Problems

At that time, Japanese Government initiatives were mainly concerned with "Maternal Health Protection," but the nature of the population problem was often debated. In simple terms, we will introduce below the debate over the population problem within Japan. In the "Proposal concerning New Basic Government Population Policy" submitted in 1946, some interesting points were made, such as "Birth control should be done of one's free will," and "abortions and sterilization require careful consideration." The important points were, however: (1) In order for the population carrying capacity to recover¹⁴, factors such as international trade, reconstruction of domestic industry, adoption of full employment policies, and overseas migration must be considered; and (2) Adjustment of the population itself is necessary, producing a need for legislative

¹² Muramatsu, Minoru (2002) "*Sengono Kajo Jinko to Sanji Seigen* [Surplus Population and Family Planning after WWII]" Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], pp. 905-910, Baifukan Co., Ltd. and Kon, Yasuo (2000) "*Waga Kuni no Kazoku Keikaku Undo no Ayumi* [The History of Family Planning Movement in Japan]," *Kazoku Keikaku Binran 2000 - Shoshi Korei Shakai to Ripro Health* [Handbook on Family Planning 2000 - Low Birthrate, Aging Population, and Reproductive Health], Japan Family Planning Association, Inc.

¹³ Muramatsu, Minoru (2002) "*Sengono Kajo Jinko to Sanji Seigen* [Surplus Population and Family Planning after WWII]" Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], pp. 905-910, Baifukan Co., Ltd.

¹⁴ The industrial, land and resource capacities required to support a certain population.

maintenance of popularization of family planning. Since not much could be expected from item (1), item (2) was considered more important.

In 1949, the “Institute for Research on Population Problems” was established by the Cabinet. Its basic recommendations were contained in the “Recommendations for a New Basic Population Policy,” which contained not only recommendations for population control, but also for increasing the population carrying capacity.

In 1953, the “Institute for Research on Population Problems” was made an advisory body to the Minister of Health and Welfare, and in 1954 delivered its “Recommendations Concerning Quantitative Population Control.” These stated that from the viewpoint of the population problem, it was necessary to strongly promote family planning. As a result, at the National Health Managers Conference in 1954, the Minister for Health and Welfare, Takamaru Kusaba, stated in his opening speech that family planning popularization should be pushed strongly in view of the population problem. Debate then arose as to whether it should be “family planning for the purpose of solving the population problem” or “family planning to protect the maternal health,” and this question also became the center of debate at the Fifth Annual International Planned Parenthood Convention in 1955. As a result of these debates, a national consensus was formed that “family planning should be promoted as part of maternal and child welfare, with population problems regarded as completely separate.” In 1959, family planning was transferred within the Ministry of Health and Welfare to the “Maternal and Child Health Department, Children’s Bureau,” a move that can be considered symbolic of this policy decision¹⁵.

However, in 1960, with the release of the Income-doubling Plan, interest in family planning suddenly faded.

(3) Research and Educational Activities by Public Research Organizations

In 1949, the National Institute of Public Health designated 3 villages as “Model Villages for Family Planning,” and guidance in family planning and birth control commenced in 1950. The objective of these activities was to halt the sharp increase in the number of abortions and eliminate potential damage to maternal health. Specialists from the Institute of Public Health visited the villages regularly, and working in coordination with the local public health nurses and midwives, they conducted education sessions to groups and home visits to provide individual guidance. This program was an experiment to determine which birth control methods suited Japan, and see how many abortions could thereby be avoided, through providing actual guidance to the Model Villages and then applying the effective methods on a national scale. Using modern terminology, such a scheme would be called an operation research method. The selection of (1) a village in rice-growing country, (2) a village in a dry-field farming region, and (3) a fishing village, as the 3 Model Villages illustrates this.

Actual guidance was conducted in the following 3 stages: (1) Firstly, education for the overall people in the community; (2) Selection of people wanting to use birth control from the general population, and providing them with group education; and (3) Providing periodic individual guidance to each couple. Method (1) is effective in gaining the understanding of people surrounding the woman, such as village leaders, husbands, and parents-in-law. Method (2) instills confidence along the lines of “We can do it too,” arising from the group dynamics. Method (3) is indispensable for dealing with problems of family planning and contraception requiring sensitive and private handling.

Based on the idea that lasting effects cannot be achieved simply by piecemeal peddling of

¹⁵ Muramatsu, Minoru (2002) “*Sengono Kajo Jinko to Sanji Seigen* [Surplus Population and Family Planning after WWII]” Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], pp. 905-910, Baifukan Co., Ltd.

technology, an effort was made to have people understand what family planning involved, and why it is necessary. People were convinced by the argument that “Many abortions are performed in this village, adversely affecting the woman’s health, and family planning is necessary to prevent this.” “Protecting the health of the mother” became the keyword of the family planning movement.

The Model Village experiments continued for 7 years from 1950. As a result, the contraceptive prevalence rate increased and the birth rate (per thousand population) declined from 26.7 before guidance started, to 14.6 in the third year, reaching as low as 13.6 in the final year. The decline in the overall birth rate for Japan during the same period is considered to be mainly due to abortions, whereas in the Model Villages, due to family planning, the birth rate declined while the number of abortions fell.

Due to the success of the Model Villages for Family Planning, various corporations started family planning guidance for their employees. After a basic survey, contact was made with Wives Associations, labor supervisors, and labor unions. Actual guidance commenced covering a wide range of activities, including lectures, discussion meetings and film shows, and advertising through pamphlets and newspapers, then progressing to guidance for small groups, and finally to individual guidance. Methods utilizing experiences from the Model Villages, such as employing midwives, were used to institute a system of regular home visits. Apart from a reduction in abortions, these programs achieved additional benefits for the corporations, because an increase in the number of employees’ children would necessitate higher family allowances and the preparation of larger company housing.

A well-known example of a leader in corporate initiatives in family planning is the Joban Coalfield Co. in Fukushima Prefecture, which started its involvement in 1952. Dr. Hideo Hayashi of the Obstetrics and Gynecology Department of the Joban Coalfield Hospital, wanted to protect women from the complications that commonly resulted from abortions, and he also strongly believed in the

need for family happiness, so he started providing guidance from a doctor’s standpoint. From 1953, with the cooperation of three specialists from the National Institute of Public Health, that had provided guidance for the Model Villages, a model zone (716 households, population 3,632) was established within the coalfield, and guidance was started in earnest. A local midwife was employed for home visit guidance. The program focused on independent participation by women, and guidance was requested by 94% (352 people) of women in the model zone who thought that birth control was desirable. This shows the high level of interest held by women at that time.

Japan was invited to represent developing countries at the First International Conference on Population held in Rome in 1954 Reports on the Model Villages for Planned Childbirth and the abovementioned case of the Joban Coalfield attracted strong interest.

(4) Popularization Activities Mainly by Practicing Midwives

As mentioned above, the 1952 amendment of the Eugenic Protection Law established the family planning worker system. After careful consideration by the Ministry of Health and Welfare as to who should be appointed as family planning workers, midwives were added to public health nurses and nurses. Births at that time mainly occurred at home, so there were midwives in each community who were trusted by the mothers. Midwives were a good choice for the popularization of family planning, as it is “something directly involving the women’s bodies, and there are no provisions for the use of models or oral explanations.” Midwives were the persons most concerned about the health of the mother at that time, and they took the initiative in taking the accreditation course and becoming Family Planning Workers. A system was gradually established whereby the midwife would instruct mothers individually on how to use a contraceptive device, and the public health nurse would provide health education to groups, at the same time imparting

Box 4-3 Real-life Activities of Family Planning Workers

The example of Fumie Kikuchi, a practicing midwife in Tokyo. “In childbirth after the war, unexpected things would occur like an unusual delivery of the placenta or postpartum hemorrhaging. I tended to interpret it as probably being the result of an earlier curettage. This was because I knew that before the war, curettage was performed as a treatment for infertility. I was struck with it and realized that controlling pregnancy is the first priority. I attended to learn about family planning in the first lecture in 1952. Once I got my qualification, I soon bought slides, a projector and condoms, etc., and provided guidance for groups of 3-5 women whose homebirths I had supervised. It was easy to gather people here, but it was difficult to gather borderline people (welfare recipients) who were booked through the public health center. It was often said, ‘The four islands of Japan are filled with children; quick and careless manufacturing is a problem. Quality rather than quantity,’ just like being ejected from a machine.”

The example of Sakiko Kubota, who was a family planning worker with the New Life Movement at Nippon Kokan (steel company). Twenty midwives were employed as consultants. They underwent training for 3 months from the start of 1953, and then provided counseling for the families of employees at the Kawasaki plant for 1 year. The results were good after the 12 month test period, so the following year we split up and went to different companies. I was in charge of the Asano Dock in East Kanagawa. At the start, it wasn't easy; before getting to discussion of family planning, I'd have to spend time discussing personal and lifestyle problems. Initially, there was strong resistance from the employees, with them saying things like, “I don't want you to come to my house,” or “I don't want anyone to know that you're visiting, so don't leave your bicycle in front of the house.” In order to first get people together without resistance, I conducted cooking and all sorts of other classes, created housewife groups in each district, decided on committees with leadership potential, and then started individual consultations using them as my point of contact. Once a year, I would hold a thank-you party for the committee members in the factory gymnasium. In the Keihin District alone, about a thousand housewife committee members gathered. The counselors also gathered once a year, at a health resort in Izu. Newspapers labeled this movement as being in the “pioneer spirit,” and the Iwanami Movie Company made a movie called “Japan is Full.”

The example of Misao Nagata who worked as a midwife from 1930 at Mikkabi-cho, Inasa-gun, Shizuoka Prefecture. From around 1952, most people were aware of the term “birth control” from newspapers and magazines, but didn't know about actual methods of birth control, and contraceptive devices were difficult to obtain. It was an era when pregnancy commonly led to abortion. Nagata personally appealed for the necessity of family planning. Housewives whose babies Nagata had delivered visited the Nagata Maternity Clinic to access contraceptive information and techniques. Yoshiko Ohishi, who started a birthing center in the same town in 1946, spoke to the people who gathered there about matters such as the effects of abortion and the establishment of pregnancy. After she obtained the family planning worker qualification in 1952, in the evenings she visited gatherings of supporters in each small hamlet for talks, taking with her rather thick condoms, and various types of diaphragms, borrowed from the pharmacist. This guidance was provided to women of childbearing age, but family planning is not possible without male cooperation. Guidance through the Wakakusa-kai was aimed at men, and mothers-in-law who control agricultural families. I also visited fire brigades, manufacturing companies, bus companies and mines, etc., to impart accurate information about sex and the birth cycle (e.g. half of puerperal fever is caused by neglect of the mother's health because of

men's tyrannical demands). Because we were instructed in use of the diaphragm at training classes, more wives were recommended to use a diaphragm than condoms, but the wives were often averse to using a diaphragm that was like a rubber membrane stretched across a round rim of piano wire. There was even someone who said, "If I insert that thing, it'll go deep inside my stomach." The usage rate failed to grow nationally for the following reasons: women had to be measured to fit the appropriate size, diaphragms could not be used suddenly if needed, and cleaning them after use was troublesome. Proper use of condoms was not properly understood either, however, and instruction was required about the correct method of application and removal, and handling afterward (there were many problems, such as those who washed condoms for reuse, or threw them away in rivers, and condoms thrown into toilets that ended up in fields together with the night soil).

Sources: Nishiuchi, Masahiko and Mother and Child Health History Publication Committee (1988) *Nihon no Boshi Hoken to Moriyama Yutaka* [Maternal and Child Health in Japan and Moriyama Yutaka], Japan Family Planning Association, Inc., and Ohbayashi, Michiko (1989) *Josanpu no Sengo* [About Midwives after the WWII] Keiso Shobo pp. 208-221

accurate knowledge and information about family planning and mother and child health. It is said that (such an effective mutual collaboration between midwives and public health nurses made throughout Japan was one of the keys to the success of the family planning movement in the post-war period in Japan. Family planning promotion activities throughout Japan combining both of these aspects was an important key to the success of family planning in Japan's post-war period. Despite the fact that the income of midwives as a profession would fall if the number of births declined due to family planning guidance, they vigorously conducted activities, closely coordinated with the local community, due to a strong sense of purpose to protect women from abortions, and gradually achieved good results.

In 1955, sale of contraceptives by family planning workers was approved, so it became common to sell condoms at the time of consultation. At that time, as it was usual for men to buy condoms at the pharmacist, women were embarrassed about buying them. The new system delivered contraceptives to individuals upon request. Midwives retained the profit margin on the

condoms as instruction fees, providing increased incentive for instruction.

2-2 Private Sector's Initiatives in Family Planning

(1) Activities of Non-governmental Organizations Immediately After the Second World War

After 1950, more than 20 family planning associations were established as public bodies, but their principles and views varied greatly, similar to the rivalry of local barons. To improve this situation, the Family Planning Federation of Japan was formally inaugurated in April 1954 as an umbrella organization to oversee all these groups, with the aim of increasing lobbying power towards the government and overseas. Around the same period, in 1952, family planning activists established the International Planned Parenthood Federation (IPPF). In October 1955, the IPPF held its Fifth International Conference on Planned Parenthood. The Family Planning Federation of Japan worked to host the Convention in Japan, where it was highly successful¹⁶.

¹⁶ Kon, Yasuo (2000) "Waga Kuni no Kazoku Keikaku Undo no Ayumi [The History of Family Planning Movement in Japan]," *Kazoku Keikaku Binran 2000 - Shoshi Korei Shakai to Ripro Health* [Handbook on Family Planning 2000 - Low Birthrate, Aging Population, and Reproductive Health], Japan Family Planning Association, Inc.

(2) Japan Family Planning Promotion Association Initiatives

Representative of public initiatives were the activities of the Japan Family Planning Extension Association, which was established in 1954 and changed its name to the Japan Family Planning Association in 1962. The Japan Family Planning Extension Association was created in 1954 by Mr. Chojiro Kunii (now deceased), and from that time continued to cooperate with the government and experts in this field to promote family planning in Japan in the post-war period. The Association's policy is to "promote a humanistic family planning movement while aiming for economic independence through its own efforts"; to cooperate with the government in family planning initiatives by

utilizing its own strengths as a non-governmental organization; to provide information about family planning; to train family planning workers; to develop and promote education material; to provide contraceptives; to provide midwives with low cost condoms through special contracts with condom makers; and to develop local organizations.

The Japan Family Planning Extension Association poured its efforts into training of public health nurses and midwives involved in family planning, creating various types of training projects. The Japan Family Planning Extension Association First Annual National Conference was held in 1956 in association with the Ministry of Health and Welfare and the Family Planning Federation of Japan, and has been held every year

Box 4-4 Public Information and Awareness Campaigns by the Japan Family Planning Extension Association

Soon after its creation, the Japan Family Planning Extension Association issued its own monthly publication called the "Family Planning Newspaper" (changing its name to "Family and Health" in 1982). This aimed to popularize family planning and increase awareness, and was distributed to municipalities, organizations and individuals, providing family planning information and increasing knowledge and awareness. In addition the staff visited practicing midwives and others in community organizations, public health centers and municipalities that were promoting family planning, conducting seminars and conferences with local residents to advance the family planning movement. They also distributed contraceptives (mainly condoms) at special prices based on special contracts with condom manufacturers, providing services as part of the awareness campaign¹⁷. Educational materials for the use of family planning workers in promoting their work were developed based on feedback from their experiences with families. Specialists helped with these research and text development activities, and family planning programs were conducted with constant cooperation with administrators, academics and the private sector. The wide range of educational materials produced over many years includes textbooks, pamphlets, educational materials for distribution, panels, audiovisual materials, and items for health guidance and health checks. These educational materials were introduced in catalogs distributed each year to municipalities and interested parties.

In 1978, the Medical Committee (with Seiichi Matsumoto as chairman) was established, with the aim of improving the quality of training activities and information and educational materials, under the guidance of professionals including Committee members.

¹⁷ Compared to clinic-based family planning promotion activities in various countries, this method of providing contraceptives to the community was regarded as highly original by Dr. Malcolm Potts, head of the medical section of the International Planned Parenthood Federation, who monitored family planning in Japan in the 1970s and promoted internationally "Community-Based Distribution of Contraceptives," modeled on Japan's experience.

since, providing lectures about family planning and maternal and child health, presenting awards to persons of merit, and contributing to boosting the vigor of the national movement.

A major contribution of the Japan Family Planning Extension Association was its significant impact on policy formulation by providing a link between government, academics and the private sector. In 1955, the Association created the Family Planning Study Group. At the time of its creation, the Committee included representatives from the Ministry of Health and Welfare, the National Institute of Public Health (NIPH), public health center directors and regional government administrators. At the monthly meetings, there was enthusiastic debate about the theoretical construction and interpretation of family planning and population problems, as well as the popularization of family planning, focusing on effective strategies and tactics. A wide range of topics were discussed, including grass-roots community participation, development of community organizations, particularly mothers' organizations, and the effective use of midwives and public health nurses (group instruction by public health nurses, individual instruction by midwives). There was also discussion concerning the training curriculum, and the transfer of projects to towns, cities and villages. Discussions here were reflected in policy at the national and local government levels.

(3) New Life Movement by Corporations

While family planning workers provided guidance locally, the "New Life Movement" to spread family planning among industry started in 1952 (see Box 4-5). This initiative spread rapidly, because family planning guidance could be easily provided to corporate employees gathered as a group. It was taken up by those involved in shipbuilding, coal, electricity, telecommunications, chemical manufacturing, paper manufacturing, national railways, Nippon Telegraph and Telephone Public Corporation, transportation companies, police and firefighters. It was painstakingly explained that the objective of this

project was not to reduce the family allowance paid to company employees, but to improve the health and welfare of the individual and family.

(4) Other Initiatives

In December 1934, the "Imperial Gift Foundation Aiiku-kai" was established as an Imperial initiative to improve health and welfare for mothers and children. In Japan at that time, neither the Ministry of Health and Welfare nor public health centers were yet in existence, so the Aiiku Survey Society was first established to conduct scientific research into maternal and child health issues. These early surveys showed that the infant mortality rate in Japan was extremely high (125 deaths per 1,000 births in 1934), particularly in farming and fishing villages.

In an attempt to reduce the infant mortality rate, Aiiku-Groups (Married Women's Voluntary Groups for Mother-Child Health and Welfare) were established to tackle the problem at the village level. These were set up so that one group covered a primary school zone or old village area, with one member of each group covering about 10 households, and subgroups allocated to village sections or neighborhoods. The main activity involved each member visiting homes to hold discussion meetings (subgroup leader meetings and subgroup member meetings). Prior to the war, there were more than 1,200 designated model Aiiku villages in 46 prefectures nationwide, and after the war the Aiiku movement was linked with the maternal and child health program by the Ministry of Health and Welfare, contributing to strengthening of local organizations concerned with maternal and child health.

Family planning was also taken up by the mass media. The Mainichi Newspaper established the Population Problem Research Council in July, 1949, and from 1950 onward conducted a "National Family Planning Survey," as a rule every 2 years. It was unprecedented for a general newspaper company to set up an organization devoted to surveying population problems, and the resulting surveys have provided valuable data that is without

Box 4-5 Family Planning Movement by Corporate Programs

In addition to government family planning projects focused on cities, towns and villages, from about 1952 family planning promotion by businesses became common. From around 1951, the so-called “New Life Movement,” based on the three pillars of family planning, household budgeting and family morals, started with guidance and support from the Institute for Research on Population Problems (established in 1933 as a half-public, half-private sector research organization). Funding for this program was supplemented by instruction fees from companies. Complementing the Livelihood Improvement Movement of the Ministry of Agriculture and Forestry focusing on agricultural villages, the Institute for Research on Population Problems focused on companies. In 1955, the wives of directors of major companies started up a “Family Living Research Association,” contributing to the corporate family planning movement. A central aim of the New Life Movement was planned parenthood through popularization of family planning, but at the same time they aimed to empower women in the household. Their ultimate aims were for happy household management through management of household finances, encouragement of saving, promotion of health and hygiene in the home, childcare and education for children, improved education and for life to be culturally enriched. Through this movement, many Japanese housewives developed the custom of keeping the household accounts.

The trigger for this movement was when the personnel manager of Nippon Kokan consulted the Ministry of Health and Welfare about labor practices and employee welfare, and met the director and staff of the National Institute of Population Problems. Representing the Institute for Research on Population Problems, the Institute conducted a 2 year trial of the New Life Movement using Nippon Kokan as a model. Based on the trial results, the New Life Movement formally started at the Nippon Kokan Kawasaki Steelmaking Plant from 1953. A Family Page was provided in the company newspaper to improve dissemination of information, and group guidance was provided by a family planning worker to groups each comprising five households, centered in company housing. The family planning worker would then visit each household to provide individual guidance in contraceptive methods. Individual consultation also provided the benefit of being able to purchase cheap contraceptives that the company had obtained in bulk. As a result, after only one year, the following remarkable results were reported: the family planning prevalence rate had jumped from 40.7% to 70.8%, the birth rate had declined by 47%, and the abortion rate declined by 79%. Before guidance, condoms were overwhelmingly the most common form of contraception, but as a result of individual consultations, the proportion of female-centered methods such as spermicidal jellies and the diaphragm had increased markedly. Following this success, aiming at a target of 100 companies and 1 million people, centered in major corporations and government corporations, employees in shipbuilding, coal, electricity, chemical manufacturing, paper manufacturing, national railways, private rail companies, Nippon Telegraph and Telephone Public Corporation, transport companies, police and firefighters also participated. At the peak, a record 55 companies and 1.24 million people participated in the project.

For companies, the New Life Movement produced great economic benefits. The lower birth rate meant a reduction in family allowance and childbirth costs, reduced company housing costs, and also reduced medical allowances. These savings were channeled into the activities of the New Life Movement. There were also numerous side-benefits, such as reduced employee absenteeism, improved family health management, and fewer accidents, and relations were strengthened between

company employees. However, as societal demands related to population changed, the movement faded, until in 1971 only 8 companies remained involved in the Kanto Region, and in 1982 the last company, a transportation company, discontinued the movement, marking the end of the New Life Movement.

Sources: Nishiuchi, Masahiko and Boshi Hokenshi Kanko Iinkai (1988) *Nihon no Boshi Hoken to Moriyama Yutaka* [Maternal and Child Health in Japan and Moriyama Yutaka], Japan Family Planning Association, Inc.

Kubo, Hidefumi (1997) *Nihon no Kazoku Keikakushi - Meiji/Taisho/Showa* [History of Family Planning in Japan; Meiji/Taisho/Showa Era], Japan Family Planning Association, Inc.

Population Association of Japan ed. (2002) *Jinkou Dai Jiten* [Encyclopedia of Population], Baifukan Co., Ltd.

parallel globally for the length of time covered. According to the first survey, the proportion of “persons currently using contraception” was 19.5%, and the proportion of “people who have never used contraception” was 63.6%¹⁸.

3. Family Planning in Developing Countries in the Light of Japan's Experience

3-1 Factors in the Outcomes of Family Planning Measures in Japan

After the government became seriously involved in the family planning program in 1952, private sector and businesses became involved in a wide range of initiatives, with results improving each year. As the contraceptive prevalence rate rapidly increased, the abortion rate sharply declined, so that in the 1960s the contraceptive prevalence rate reached 43%, overtaking the abortion rate. After reaching the highest peak at 1.17 million in 1955, the number of abortions declined every year thereafter, and the contraceptive prevalence rate increased (see Figure 4-1).

After the hardships of the Second World War, lifestyle and health needs increased for the Japanese

people as a whole, and with cooperation from the government, non-governmental organizations, specialists and community organizations, the constructive efforts of those involved in family planning created a synergistic effect to achieve such good results in only a decade. Next, we will consider whether the main factors contributing to the success of family planning in Japan are applicable to developing countries.

(1) Approach Emphasizing the Existence of Needs and the Individual

From the end of the Second World War until the start of the family planning project in 1952, many people with unwanted pregnancies had induced abortions out of sheer necessity, and the number of these people suggested a strong demand by individuals in society to control the size of their families. Abortions also had serious adverse consequences for women's bodies, so there was a strong undercurrent of demand for birth control from the additional viewpoint of protecting women from physical harm. This formed the backdrop for moves to reduce the number of abortions through family planning, not as a means for population control, but in order to stop the harm caused to the health of mothers and children by abortions.

¹⁸ Kubo, Hidefumi (1997) *Nihon no Kazoku Keikakushi - Meiji/Taisho/Showa* [History of Family Planning in Japan; Meiji/Taisho/Showa Era], Japan Family Planning Association, Inc.

Emphasis was placed on the perspective of the individual, and with the adoption of “the health of the individual and human happiness” as its philosophical basis, family planning was promoted as part of maternal and child health, and public health. This approach was appreciated by most people in the community, and family planning activities spread rapidly. At the same time, based on the concept that “the individual reflects the community, so the community can assist the individual,” the view was put into practice that involvement and action by the local community was also essential, since the benefits of protecting the health of the individual extended into the community as well, and it was necessary to improve the public health standards of the entire community.

The situation today in developing countries, with low levels of contraception use, is that their governments lack a coherent family planning philosophy, and end up vacillating between a “population policy” and “protecting the health of mothers and children.” Choosing the route of protecting the health of mothers and children, Japan stressed the health and happiness of the individual, a philosophy for family planning that met with general public acceptance. In light of Japan’s experience, in an area such as family planning that is so closely tied to an individual’s life choices, the key to success may well be an approach that addresses issues through the community as a whole with local resident participation, but at the same time emphasizes on the particular needs of the individual.

(2) Establishment of System of Cooperation between Government, Academia and the Private Sector

One factor that can be cited as contributing to the success of family planning in Japan was the efficient division of responsibilities that took place

between government, academia, and the private sector (NGOs and practicing midwives), producing an efficient system of cooperation. In Japan, a private sector agency, the Japan Family Planning Association (an NGO), played both a pacesetter role and a coordinating role, thus enabling effective cooperation between government, academia, and private sector organizations. While the government devised policies and put infrastructure and systems in place on the ground, professional bodies provided specialist information based on research and surveys they conducted. They also provided guidance and constantly developed new techniques. Being closest to the public on the other hand, local governments and public health centers served as links to NGOs and other private sector groups, who for their part acted as end providers of family planning services to the public. This system was a major force in the growth and continuation of a family planning industry¹⁹.

(3) Use of Midwives, Public Health Nurses and General Nurses, Trusted by the Public, as Family Planning Workers

Family planning guidance, an issue concerning people’s personal sex lives, was nevertheless implemented smoothly in Japan by employing as family planning workers health services personnel who were already trusted by the public. For many years midwives and public health nurses alike had performed work that involved raising the general level of health of the residents in their local community, so they were well acquainted with people’s personal lives, and had come to be deeply trusted by the local residents, who accordingly felt comfortable with them. Since it was these same practicing midwives and public health nurses who were assigned the task of providing family planning guidance in the local community, family planning met with acceptance by Japanese people and became an entrenched feature of their lives. Since

¹⁹ Institute for International Cooperation, Japan International Cooperation Agency (2003) “Second Study on International Cooperation for Population and Development - New Insights from Japanese Experience” Japan International Cooperation Agency.

family planning is an issue with a deep connection to an individual's personal life, the personnel assigned to provide family planning guidance must enjoy the people's trust.

(4) Active Non-government Organizations and Community Groups

During the post-war period when abortions were banned, many women suffered from health problems resulting from unlawful abortions. With the aim of remedying this situation, non-governmental organizations were founded to promote family planning, along with other community groups aiming to improve maternal and child health. Leading organizations of this kind included the Family Planning Federation of Japan, the Japan Family Planning Association (JFPA), and the National Institute of Population and Social Security Research. The JFPA made a particularly large contribution, mapping out a path for the family planning movement in Japan, developing methods to expand the wider use of family planning. From the 1960s onwards, the JFPA served as the entity formally charged by the government with the task of implementing family planning guidance. JFPA initiatives applicable to developing countries are listed below:

- It set up a study group that served as an umbrella organization bringing together government, academia and the private sector; it laid out a direction as well as promotion strategies for family planning in Japan; and it assisted with government policy formulation. This sort of coordinating role is perfectly suited to an NGO, which does not have vested interests.
- It made full use of the network of practicing midwives and public health centers around the country. For example, while communicating government and global trends to those frontline workers, it would also gather data from those workers and convey it back to the government, thereby playing a central role in the collection and dissemination of information. This data served as important raw

material when the government came to determine its policies.

- It provided technical and practical support for lectures by family planning workers.
- It prepared educational materials for lectures, and audiovisual teaching materials for information, education and communication activities.
- It supplied contraceptive devices and pharmaceuticals for sale using the "social marketing" method. (This method is discussed below.)

As this list of activities demonstrates, the campaign to increase the use of family planning required a high level of expertise. Since the government could not simply force people to use family planning by legislation or decree, the process would require both an expansion of the relevant non-governmental organizations and their active involvement.

Initiatives taken by Japanese industry to meet the challenge of family planning (such as the New Life Movement) were without parallel in the world. Some aspects of these measures may be instructive for developing countries where companies and businesses play a central role in people's lives.

Family planning, embraced by Japanese society for its part in protecting the health of mothers and children, was also an issue of deep concern to women, and therefore found a natural audience in local women's groups in Japan. Existing maternal and child health organizations (such as the Aikku-kai) had also been tackling family planning program in earnest, with the guidance and the cooperation of public health nurses, and contributed greatly to the success of family planning programs in Japan.

(5) Importance of Information, Education and Awareness

For the purpose of expanding the use of family planning in Japan, extensive education activities were conducted, imparting information and knowledge to the community. These activities altered community awareness, leading to a decline

in the abortion rate and an increase in the contraception prevalence rate.

(6) Introduction of the Contraceptive “Social Marketing” Method

In Japan, special contracts were signed with the manufacturers of contraceptive devices (and medicines) for bulk purchases at cheap prices by NGOs that were promoting family planning. These organizations were then able to provide these devices at wholesale prices to family planning workers around the country, who could in turn offer safe yet inexpensive products to local residents at the same time as they handed out family planning materials. This arrangement had two advantages: it provided family planning workers with a financial incentive to promote family planning, and it made it easy for members of the general public to gain access to contraceptive devices and drugs. In addition, by buying stocks of contraceptive devices (mainly condoms) at inexpensive prices and selling them, the NGOs administering this system could gain their own source of revenue, thereby enabling them to conduct their own self-supporting operations as NGOs.

This method corresponds to the concept of “social marketing,” now being applied to assistance programs, and provides hints on how this method can be utilized in developing countries. For the public health systems in developing countries which espouse “free medical treatment” but whose services do not in fact function properly, owing to a shortage of funds and other factors, some lessons can be derived from this “social marketing” method employed in Japan.

3-2 Lessons Learned from Problems Encountered—the Importance of Reproductive Health and Reproductive Rights

As a result of initiatives in the field of family planning, the contraception usage rate in Japan began to rise from around 1960, and abortion rates fell considerably. The contraception prevalence rate failed to grow much beyond the 50-60% level, however, and the abortion rate among young people has showed signs of increasing. Condoms are easy to obtain, and by far the most popular method of contraception in Japan. In the case of condom failure, it is still acceptable to have an abortion. This is because in the chaotic conditions that arose in Japan immediately following the war, people tended to address any health-related issue after it occurred and not before. There were also few opportunities during that period to pursue any significant discussion of family planning from the viewpoint of reproductive health, the debate then prevailing being a choice between “Population control? Or protection of the maternal health?” This was one of the causes of the leveling off in the contraception prevalence rate, as well as the increase in abortion rates among young people. This experience demonstrates the need to promote further public discussion of family planning issues and the importance of a comprehensive approach to family planning that matches each individual’s needs from the viewpoint of reproductive health and rights. Such an approach would suit a woman’s life choices from cradle to grave, and encompass an expansion of available contraceptive options, individual counseling, and publicity campaigns and education.

Appendix. Family Planning/ Prevention of Parasitic Diseases Integration Project (IP)

With the aim of introducing “humanistic family planning,” including social marketing methods as well as self-supporting and sustainable family planning programs based on community participation, since 1974 the Japanese Organization for International Cooperation in Family Planning (‘JOICFP’) has been conducting an integrated family planning/parasite control project (Integration Project, or ‘IP’). This IP has run for more than twenty years in many countries, principally in Asia, based on Japan’s experience in family planning and parasitic disease control programs.

IP activities have been embraced by the people in these countries. These programs have raised people’s interest in health issues and their attitudes towards improving their lives, and have also brought about advances in parasite control, improved nutrition, and family planning. Time and again these IP programs have demonstrated that they can develop into “community development movement,” embracing maternal and child health, preventive medicine activities, and lead to improvements in sanitation and living standards. For that reason we will now discuss this IP in more detail, as an example of how Japan’s experience has been put to good use. We will present an overview of this IP and its background, and then the experience in Nepal as a concrete illustration of its operations in the field.

1. Background

People living in rural areas comprise 70-80% of the population of developing countries. In rural communities, religion and traditions continue to exert a strong influence, and the level of education is generally low. In addition, the villagers’ lives are poor, and infant mortality is high. It is difficult to

persuade people who live in such farming communities of the need for family planning, and to get them to put it into practice. It is accordingly important to gain people’s understanding and trust, by adding another element to family planning that wins people’s trust and encourages them to adopt it willingly.

So what sort of elements can be added to family planning? The idea was raised of combining it with maternal and child health programs, that have a natural connection to family planning. Maternal and child health has a number of its own issues, such as antenatal and postnatal guidance, immunizations, feeding and nutritional guidance, and guidance in mothering skills. Another factor was that many developing countries had few doctors, public health nurses, or midwives, and was also lacking in relevant infrastructure, such as clinics. In these circumstances it would have been difficult to use maternal and child health programs as an opening to implement family planning. JOICFP therefore realized that it needed to come up with a program that did not require doctors, complicated technology, or sophisticated medical facilities; that would deliver fast results that local communities would welcome; and that could be combined with family planning. It was at this point that JOICFP turned its attention to parasite control.

Parasites such as roundworms and hookworms afflict some 70-80% of rural populations in developing countries, and cause a variety of illnesses. If family planning workers brought with them some knowledge of parasite control that they could use to treat families and children in particular, the results would be almost instantaneous. Once that happened, housewives and their families would approach the family planning workers to show their appreciation,

Box 4-6 Why Parasite Control is an Appropriate Partner for Family Planning

- 1 It can be implemented on a small budget without the need for sophisticated technology or expensive equipment.
- 2 The medicines are effective and safe.
- 3 Parasite eggs can be seen with a microscope, and the worms that are expelled following treatment can be seen with the naked eye. People can see results immediately for themselves.
- 4 Parasites often infect children, causing their parents much concern.
- 5 Parasite testing and treatment can serve as effective tools in hygiene education.
- 6 By getting villagers to appreciate that they won't be able to improve their health through parasite control activities unless the whole community plays a part, people can be encouraged to become involved in such collective activities.
- 7 Parasite control can build relationships of trust with the people living in the community. This in turn allows workers to earn people's understanding and cooperation when it comes to a personally sensitive issue like family planning.
- 8 Parasite control includes such activities as mass parasite control examination and treatment, enhanced hygiene education, and community organization. This experience can be translated into preventive medicine and primary health activities.
- 9 In developing countries that lack a strong government parasite control policy, Japan's experience of encouraging the private sector in taking a lead role can be of particular use.

thereby laying the basis for a relationship of trust. If the villagers came to trust the family planning workers in this way, would they not then also naturally become receptive to the workers' promotion of family planning ideas? These factors lead to the concept of integrating family planning with parasite control. The success of JOICFP's world-first "collective parasite control campaigns" were made possible by the full use of Japan's post-war experience, where government, academic and private sector organizations joined forces in parasite control initiatives, with significant community participation.

2. Outline of the Integration Project (IP)

A steering committee is established as the IP's highest policy-making organ to oversee each

individual project. The steering committee has a tripartite structure, comprising government-related agencies²⁰, academics and specialists, and non-governmental organizations (usually the family planning association from the country in question). The committee selects field sites, secures funds, material resources, and facilities, and plans logistics. It is also responsible for the training of personnel such as field workers and laboratory technicians, and the project managers responsible for implementation of the program both at the central base and out in the community. The steering committee also produces and distributes teaching materials, liaises and coordinates with governments, universities, and relevant domestic organizations, and conducts negotiations with the responsible organizations at the Japanese end. The training of project personnel, in particular, is essential for

²⁰ The purpose of involving government officials is to get them to know the experimental process from the start, earn government support, and make it easy to get the project adopted as a government program, the ultimate objective.

Box 4-7 Application of Japan's Experience in Integration Projects

The following aspects of the above-mentioned Japanese experience described earlier were put to good use in this IP:

- **Approach of Placing the Emphasis on the Individual**

Based on the experience in Japan that family planning must be something people really feel is necessary if it is to become widely accepted, health of people is emphasized and activities that meet people's needs are developed instead of family planning for the purpose of population control.

- **Building a System of Cooperation between Government, Academia and the Private Sector**

Japan's experience was that government, academia and the private sector best contribute their respective strengths when each played its own particular role under an umbrella of cooperation. Japan established such a system of cooperation by having tripartite cooperation which experience was applied on the IP steering committee.

- **Appointing Staff Trusted by the Local Community**

In order to make family planning more widespread based on its experience, Japan knew that it was first necessary to build a relationship of trust between the community and public health and family planning workers. JOICFP aimed to do this by first embarking upon parasite control, a program that would produce fast results and be easy for people to understand.

- **Making Effective Use of Local Community Groups; Promoting Community Participation (In Particular by Women)**

Based on Japan's experience, public health activities (including family planning) have maximum effect when the local residents themselves (and the local women in particular) are responsible for the relevant activities. Along with the appointment of public health workers from among the local population, people were encouraged to set up their own community organizations and to develop public health projects for which they themselves were responsible, based on their needs. As much as possible, JOICFP encouraged women to take part in that process, and devised means that made it easier for women to participate.

- **Emphasis on Information, Education and Communication**

JOICFP aimed to increase awareness and knowledge in the community, and achieve sustainability in the activities it helped to launch. It therefore did not simply dispense drugs, but instead placed priority on health education, enabling local people to learn about public health issues through parasite control activities.

- **Charging for Drugs and Services**

Japan learned that charging for drugs both strengthened the sustainability of programs and raised community awareness and the sense of ownership of public health programs. In keeping with that experience, JOICFP charged for drugs and community health services.

achieving progress with project activities.

The IP steering committee normally selects two field sites in each country. The criteria by which field sites are selected are as follows:

- 1) Geographic criteria: one site must be a farming village on the outskirts of the capital. Both sites should have inadequate family planning programs. The public health situation of the region must also be poor, with high levels of roundworm and hookworm infestation. The sites must have good transport and communication links, however. A suitable population for a field site is around 10,000 to 30,000.
- 2) Personnel criteria: the region of the field site must have public health workers, family planning workers and health outreach workers, and there must be people with authority such as government officials, educators and religious leaders who can be counted on to provide cooperation with projects.
- 3) Base facilities: clinics or health posts are needed to advance the project.

These IPs tend to follow a basic pattern. First, parasite control activities are initiated, in order to gain the local people's understanding of the importance of public health issues, as well as their trust in the community health workers. Second, once that has been achieved, local residents are encouraged to organize community public health activities for which they themselves are responsible. Finally, family planning and maternal and child health activities are then gradually incorporated into the initial community projects. So that the public health activities are "owned" by the community, JOICFP both fosters and draws on the full potential of community organizations, and it selects and trains local residents to lead community health projects.

Because family planning and maternal and child health are issues of particular importance to women, JOICFP came up with ways to boost their participation, for example by placing as many women representatives as possible in community

organizations, and by employing women as public health workers. In addition, in order to secure the sustainability of community health activities, as a general rule JOICFP charged for medications and parasite control examinations. (Another expected benefit from charging for medicines and services is an increased awareness and sense of ownership of the programs by the local residents.)

These programs were developed initially based on Japan's experience, so it will sometimes be necessary to make appropriate modifications in order to suit local conditions. Following a trial period using the Japanese model, strategies may need to be modified in the light of preliminary results. Sharing information and exchanging ideas with colleagues with similar experiences is very useful in facilitating progress in an IP. To that end, international conferences, where information is exchanged on each country's particular IP experiences, are held on a regular basis, inviting principally members from the steering committee of participating countries. These conferences assist in the efficient advancement of field projects, as well as in resolving particular problems.

3. Example in Nepal: Integrated Project of Family Planning, Nutrition and Parasite Control—the Development from Parasite Control to Reproductive Health/Reproductive Rights

(1) A Summary of the Project, and Japan's Experience

The Nepalese maternal mortality rate is around seventy times greater than that of Japan, making Nepal one of the few countries where the average life expectancy at birth is shorter for females than for males. In the 1970s the Nepalese government promoted family planning with the aim of controlling the country's population increase, but in 1976 Nepal's contraception prevalence rate was just 2.9% for married people, and 69% of which had undergone sterilization operations. In light of this situation, in 1979, with the financial assistance

of the United Nations Population Fund (UNFPA) and in cooperation with the Nepal Family Planning Association, JOICFP decided to promote family planning and mother and child health projects in village communities that lacked medical services.

The projects began as an integrated project (IP) of family planning and parasite control, after which activities were gradually developed and the target communities expanded. With the particular aim of promoting family planning and maternal and child health with participation by local residents, members of the local community were encouraged to form their own organizations. Public health workers and local residents were also given training, after which they went out on regular rounds to provide guidance and services to the villages where the family planning and maternal and child health care projects were to be implemented.

As a result, under the lead of local residents in 26 villages without medical services, simple public health facilities (called "primary health care posts") were established to provide guidance in primary health care and to dispense basic drugs for payment. In addition, meeting a long-standing wish of local residents and thanks to a grass-roots grant-in-aid from the Japanese Embassy, birthing centers were built in Kavre District (the Panchkhal Family Health Center, 1997) and in Sunsari District (the Itahari Family Health Center, 2000), that are now providing safe childbirth services for local women. Midwives from Japanese Overseas Cooperation Volunteers have also been playing an active role with local workers, providing technical assistance for the centers' midwifery services.

Based on the experience in Japan, the following approaches were adopted in this IP in Nepal:

- Approach emphasizing the individual: integrating family planning with collective parasite control, "individual health and happiness" was adopted as the guiding principle for family planning.
- Building a system of cooperation between government, academia and the private sector:

by forming a steering committee at the outset of the project comprised of government officials, private sector agencies and specialists, JOICFP created a system for advancing projects based on cooperation between the three sectors.

- Building up relationships of trust with the community: through the favorable impression that the parasite control activities had on the local people, a relationship of trust was built up between them and the family planning workers.
- Making the best use of community organizations and promoting participation by the local population (women in particular): JOICFP boosted involvement by women by forming mothers' clubs in each village covered by the project. In addition, while building materials (such as cement and tin) used in the construction of the elementary community health centers were covered by project funds, the land, construction costs and labor involved were all provided by the villagers. This strengthened the local community's self-help efforts and its sense of ownership in the project.
- Emphasis on information, education and communication: from the field office located in the center of the Panchkhal Project region, public health workers went out on rounds to nearby villages, where they provided medical services as well as practical information and educational guidance. A simplified version of Japan's Maternal and Child Health Handbook was developed and distributed widely to female volunteers so that they could use the handbook as maternal and child health teaching materials that used photographs to explain information.
- Dispensing medicines for payment: the sustainability of the activities was boosted by devising ways to help pay for their cost, such as charging for medications dispensed and midwifery services provided.

We will now examine in detail how the project in Nepal has developed, based on these approaches.

(2) The State of Family Planning and Maternal and Child Health at the Start of the Nepal Project

In 1979, when JOICFP began its joint project with the Nepal Family Planning Association, it targeted three villages (Panchkhal, Bhagawatti and Baruwa) in the Panchkhal Region, with a population of around 9,000, in Kavre District, a mountainous region 40 kilometers east of the capital Kathmandu. Nepalese women at that time married young, commenced bearing children at a young age, gave birth to many children, had dangerous abortions, and were undernourished and overworked. In addition, owing to factors such as poverty and a lack of public health services and education, the average life expectancy at birth was shorter for females than males, and the maternal mortality rate was one of the highest in the world.

(3) Project Development Process—From Parasite Control to Integrated Project (IP) with Family Planning

1) Gaining Understanding and Trust Through Parasite Control Activities

The rate of parasite infestation in Nepal was extremely high at 90%. The project activities began with a collective parasite control program, at first targeting school-children. Children in the project community were gathered together and tested as a group for parasitic infestation, and anthelmintics were given to any child who was found to have worm eggs. The villagers, who were initially embarrassed to present a stool sample for examination, also slowly came to understand the worth of this particular project. It was then noticed that in order to prevent re-infection, there was a need for the villagers to have access to suitable communal sites for drawing water, for environmental sanitation improvements such as building toilets in schools, and for reforming the hygiene habits of

individuals. Understanding of the importance of family planning and maternal and child health spread, and trust in the community health workers slowly strengthened.

2) From Parasite Control Activities to the Community Initiated Self-supporting Public Health Activities

Parasite control therefore functioned as a basis for forming public health committees in each of the villages that in turn developed into activities whereby the local residents constructed their own simple public health facility, or “primary health care post.” All the buildings were basic, usually just two rooms. So that the activities would be self-supporting and sustainable in the long term, only cement and sheets of tin for the roof were supplied by the project—land, construction costs and labor were all provided by the villagers working together. Public health workers would be needed to manage these facilities, so people from the village who had completed senior high school were given two months of community health education and training, after which two of them were appointed to manage each center. Because these workers would be handling maternal and child health and family planning issues, JOICFP looked for women candidates for the community health worker positions. There were few women in the villages with the requisite level of scholastic attainment, however, so men came to be trained as public health workers. Consideration was given to ensure that the health posts would meet the needs of women by appointing female villagers as volunteers to assist the workers. Furthermore, although the members of the villages’ public health committees were also exclusively men, a path was opened for women to become involved through the formation of mothers’ clubs in each village, and the appointment of club representatives to the public health committees. These health posts raised income to meet IP activity costs by charging for medications.

These had been purchased at wholesale prices, allowing the health posts to sell them to local

residents at a market discount of around 20 percent. The health posts offered private consultations on contraceptive devices, and also provided basic medical services. In addition to those day-to-day activities, each month the village would be visited by a nurse and a midwife from the project's field office. Working together with the public health worker and a female volunteer, this visiting team would check the health of infants, pregnant women, and nursing mothers, and also provided guidance on family planning. Although the project was initially launched in three villages, demand for its programs arose from villages in the surrounding area, and by 1993 the IP had been extended to fifteen villages (a total population of 60,000), with a primary health care post established in each village. In the three villages where the project was first begun, the number of toilets increased from one in 20 buildings to one in five, and the rate of parasite infection in the Project region had fallen from 90% to 46%.

3) Spread of Activities to Other Villages

Based on the experience gained in the Panchkhal Villages, in 1993 the project was launched in the Sunsari District, 550 kilometers east of Kathmandu. Under this project, a team comprising a nurse and midwife would go out on regular rounds, where they would provide guidance, offer basic medical treatment, and dispense medicines. Women volunteers in the project region were organized into community groups, and by helping with reception duties and measuring infants' vital statistics, these local volunteers worked in concert with the public health workers. This program had been in operation only five months when it was expanded into five villages in the neighboring Morang District. Considerable effort was also put into campaigns to improve nutrition. In order to redress a lack of balance in people's diets, each village was supplied with large pots and frying pans, and on their regular visit the team of health workers would provide nutrition education as well as conduct cooking sessions, using vegetables and rice contributed by the local women.

Although initially these women were rather reluctant to apply new methods of cooking, as their children came to enjoy the food, the sessions became popular, and at several villages these developed into meals programs for children.

4) Start of Midwifery Activities

In 1988, a Family Health Center was established in Panchkhal with the support of a grassroots grant-in-aid from the Japanese Embassy. The center housed both a field office and a maternity clinic, which had been the dream of the villagers for many years. The Center had a grand debut, with the opening ceremony attended by more than 100 people, including the Japanese Ambassador, the President and the Director General of the Nepal Family Planning Association, and members of public health committees and representatives of mothers' clubs from the fifteen villages.

Although small-scale midwife projects had commenced in 1996, project midwives received further training in Japan to upgrade their skills. The use of an emergency vehicle was arranged, and in cooperation with hospitals, hygienic and safe midwifery services were launched, operating 24 hours a day. Besides providing midwifery services on fee charging services to help fund expenses, the center undertook a variety of activities, including lectures on safe childbirth for villagers, the collection of maternal and child health data, and supplying medicines at cost to the elementary public health post in each village. Workers from the center also visited villages to provide guidance and supervision, and coordinated projects between the fifteen villages. It lived up to its name as a center for protecting the health of mothers and children in the Panchkhal Region. As a result of twelve days' live-in training given to 75 traditional midwives recruited from the project region, there has been an increase in the early detection of at risk pregnancies, more and more pregnant women and nursing mothers have undergone health checks, and there have been almost no cases of infant or maternal deaths in the project region. In addition, in order to meet the costs of giving birth at the project family health

center in the Panchkhal Project, village women have started to form pools to save the money

needed (on average the fee per delivery at this center is ¥2,000.)

Chapter 5 Infectious Diseases Control

(Tuberculosis, Parasitic Disease, Immunization Programs)

The number of deaths from infectious diseases reached 11,120,000 worldwide in the year 2002, accounting for some 20% of all deaths¹. For example, every year 8 million people contract tuberculosis (TB), and 2 million die from this disease. The incidence of TB is rising sharply in Africa due to the spread of HIV/AIDS². Although there are quite a large number of people infected with parasites and its disease burden is high, parasitic disease control tends not to have a high priority due to relatively lower mortality rate than other infectious diseases. These infectious diseases are not just a problem for the health of the individual, but a major obstacle to the economic and social development of developing countries, and infectious diseases control is one of the core issues of Poverty Reduction Strategy Paper. Moreover, infectious diseases in developing countries can no longer be ignored in developed countries after the progress of globalization.

Infectious diseases such as cholera and TB were the greatest health problems in Japan; however, during the short period from the end of the World War II to present, Japan has successfully reduced morbidity and mortality from infectious diseases to a great extent through policy formulation by central and provincial governments and activities of private organizations. Using the lessons from its own experience, Japan has expanded its cooperation programs of infectious disease control in a number of countries. Japan has strengthened its commitment strategically, in particular, the “Hashimoto Initiative” in 1998 having commenced the promotion of parasitic

disease control based on Japan’s experience, and the “Okinawa Infectious Disease Initiative (IDI)” with commitment of US\$3 billion over a 5 year period.

In this chapter, first a historic overview of infectious diseases control activities in Japan will be introduced. Then we will study what can be applicable to developing countries among Japan’s experience by reviewing TB and parasitic diseases control programs in which Japan was particularly innovative. We will also review activities in the area of immunization programs, an essential part of infectious disease control. Two appendices discuss activities in Japan for the control of HIV/AIDS, a major challenge in many developing countries, and the actions taken regarding Hansen’s Disease (leprosy) that caused much regret and soul-searching.

1. Trends in Infectious Disease Control

1-1 Acute Infectious Disease Control Phase (1868~1919)

Epidemics of acute infectious diseases, including cholera, bubonic plague, and smallpox, brought from overseas were frequent as the trade with countries abroad was initiated after Japan opened the country to the world in Meiji Era (1868~1912). The damages of epidemics prevail nationwide as the movement of people and goods within the country also increased³. The greatest challenge of this era was acute infectious diseases control.

As a part of the immunization program, the

¹ WHO (2003)

² *ibid.* (2002)

³ Kawakami, Takeshi (1965) *Gendai Nihon Iryoshi - Kaigyosei no Henesen* [Japan’s History of Modern Medical Care - History of System of Medical Practitioners] Keiso Shobo.

Table 5-1 Cholera Patients and Deaths

Year	No. of patients		No. of deaths	
	Number	Per 100,000 population	Number	Per 100,000 population
1877	13,816	38.5	8,027	22.4
1878	902	2.5	275	0.8
1879	162,637	446.0	105,786	290.1
1880	1,580	4.3	618	1.7
1881	9,387	25.4	6,237	16.9
1882	51,631	138.6	33,784	90.7
1883	669	1.8	434	1.2
1884	904	2.4	417	1.1
1885	13,824	36.1	9,329	24.3
1886	155,923	404.6	108,405	281.3
1887	1,228	3.2	654	1.7
1888	810	2.1	410	1.1
1889	751	1.9	431	1.1
1890	46,019	115.3	35,227	88.3
1891	11,142	27.7	7,760	19.3
1892	874	2.2	497	1.2
1893	633	1.5	364	0.9
1894	546	1.3	341	0.8
1895	55,144	132.7	40,154	96.6

Source: Number of cholera patients and deaths from Kawakami, Takeshi (1965) p. 131. Rate per 100,000 population calculated from estimated population on January 1 each year according to the Statistics Bureau of the Prime Minister's Agency.

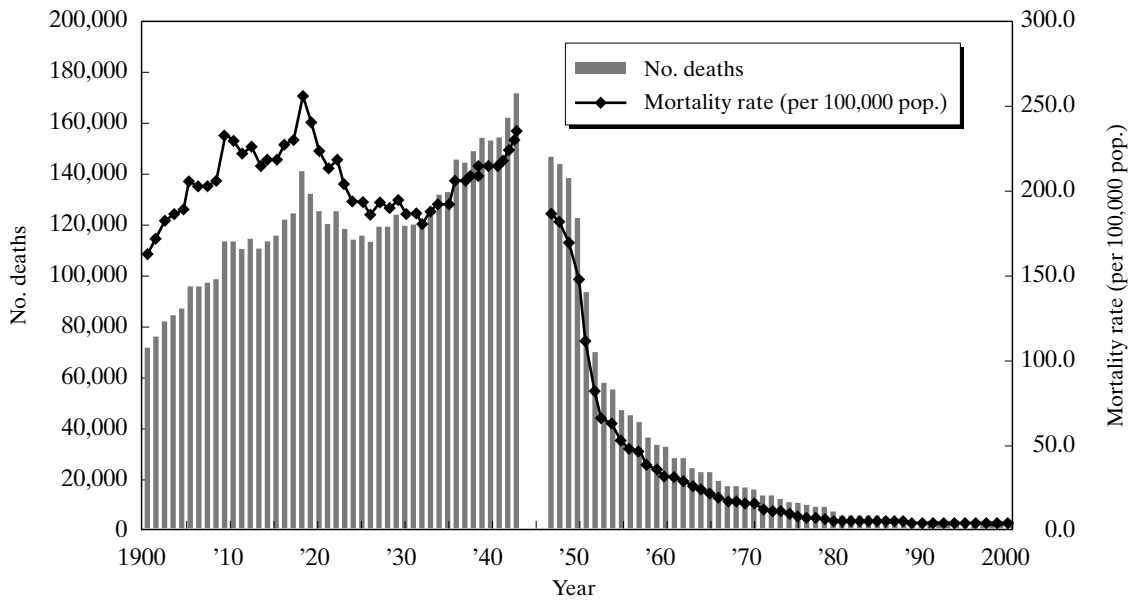
Meiji government set up a Vaccination Center at the 'Daigaku-Higashiko' (literally means 'University East Building' and later the University of Tokyo) in 1870, and promulgated the 'Vaccination Regulations' in 1874. In 1876, the 'Vaccination Regulations' were repealed, and replaced with the 'Medical Vaccination Regulations' and the 'Smallpox Prevention Regulations'. As a part of cholera control, the "Guide to Cholera Prevention" was issued in 1877, followed by the "Provisional Regulations for the Prevention of Cholera" in 1879. The "Central Sanitary Bureau" was also established in 1879 as an advisory body for cholera control. Emergency measures were instituted including the establishment of quarantine hospitals beginning with the "Cholera Quarantine Hospital" (1879, headquarters in Tokyo). All of these measures did not have much success, however, with the death toll

in the cholera epidemic of 1879 exceeding 100,000 (see Table 5-1).

In 1880, the "Infectious Disease Prevention Regulations" were issued as a comprehensive preventive code, making it mandatory to report six infectious diseases: cholera, typhoid fever, dysentery, diphtheria, epidemic louse-borne typhus, and smallpox. This regulation resulted in the establishment of a continuously working prevention program and enabled rapid response when necessary. However, cholera outbreaks occurred every few years until the end of the 19th century.

In 1879, the national government introduced "Municipal Public Health Committees," publicly elected by the local residents as community-based epidemic prevention organizations to deal with a lack of finances and personnel. This was a revolutionary concept for the time, mobilizing

Figure 5-1 Tuberculosis Deaths



Source: Research Institute of Tuberculosis website (<http://jata.or.jp>)

government and citizens working together to solve public health problems⁴. As the centralization advanced, however, local public health systems underwent radical reform after local administrative structures were extensively reformed in 1885. The Department of Police took charge of public health administration at the local level, and the Municipal Public Health Committee system was abolished. The Department of Police had been responsible for public health administration until the end of the World War II in 1945.

Programs against cholera and other acute infectious diseases having showed some success, in 1916 the Ministry for Home Affairs established the “Health and Sanitation Research Committee.” It was revealed for the first time by the nationwide surveys this committee conducted that disease burdens of chronic infectious diseases such as TB, infant mortality, and problems with the physiques and health of the populace were markedly more serious than in other countries.

TB spread throughout the country as the young workers, particularly women, drawn from rural areas into the cities hoped to find jobs in the

industrial revolution, and then spread infections in their hometowns after they were laid off when they became infected with disease in poor working and living conditions. Communal living conditions, such as in the armed forces and school dormitories, also increased TB infections. Having spread across the country in this way, TB was referred to as the “national scourge.” Mortality from TB continued to climb after 1912, peaking at 140,000, or a mortality rate of 257.01 (per 100,000 population), in 1918 (see Figure 5-1). Although Dr. Robert Koch identified the tubercle bacillus in 1882, at that time there was no effective treatment but build-up of physical strength by rest, nutrition and clean air.

In response to the wide spread of TB, the first intervention taken by the Ministry of Home Affairs was the “Regulations for the Prevention of Pulmonary Tuberculosis” issued in 1904. The directions by the regulations were quite simple such as instructing public institutions e.g. hospitals and hotels, to disinfect rooms used by TB patients, hospitals not to place TB patients in the same room with patients of other diseases, and public facilities e.g. schools and government offices, to provide

⁴ *ibid.* p. 133-134

spittoons. However, they were effective in increasing public awareness of TB⁵. Afterwards the “Factory Hygiene Data” compiled by the detailed survey of the health status and working and living conditions of workers in mines and factories in 1910 revealed the TB infection route from mines and factories to rural villages. This result urged the government to enact the “Law Regarding the Establishment and Government Assistance of Pulmonary Tuberculosis Sanitaria” in 1914. Furthermore, the “Tuberculosis Control Law” was enacted in 1919, with measures such as the prohibiting TB patients who were potential sources of infection from working, and forcing public institutions to establish TB sanatoria. Fundamental measures for the control of chronic infectious diseases were established during this period⁶.

1-2 Chronic Infectious Disease Control Phase (1920~1944)

TB remained a major national challenge during this period. The armed forces that relied on the recruitment in rural villages were concerned that the spread of TB in villages might lead to a deterioration of military strength. The military initiated a TB preventive program nationwide since they deemed it necessary to institute a strong strategy involving the entire population in the fight against TB in terms of the “*Kenpei-Kenmin* (Healthy Soldier, Healthy People)” concept. In the absence of an effective treatment for TB at that time, the strategy depended heavily on early detection, notification, and quarantine after all.

Although the “Tuberculosis Control Law” was enacted in 1919, Japan did not engage fully in anti-TB programs until the submission of a report by the Health and Sanitation Research Committee in 1934. Based on this report, in 1937 the Tuberculosis

Prevention Law was revised, public health centers were established, the registration system of TB patients was adopted, and the number of sanatoria was increased.

A non-profit foundation representing the collaboration of governments, academia, and the private sector, the “Japan Anti-Tuberculosis Association” (JATA), was established in 1939 with an Imperial household initiative, merging the Japan Tuberculosis Prevention Association, a non-government organization formed in 1913. JATA remains today the central organization in tuberculosis control programs in Japan. Also in 1939, the administration of the TB prevention was strengthened with the establishment of a Tuberculosis Division within the Prevention Bureau of the Ministry of Health and Welfare. Japan promoted build-up of physical strength of the people with the emphasis on TB control for the young by enactment of the National Physical Strength Law in 1940.

1-3 Post WWII Acute and Chronic Infectious Disease Control Phase (1945~1960)

1) Epidemic Louse-borne Typhus During the Period of Disorder after WWII

During the period immediately following the end of the World War II, the living standard of the people drastically got worse. This led to epidemic outbreaks of louse-borne typhus at that time. Over 32,000 cases were reported in the year 1946, and this led to a lice extermination program that was strongly supported by the General Headquarters of the occupying forces (GHQ). In 1946 an average of 10 supervisors for insect and rodent pest extermination were posted in each of 205 cities and at the same time, 10,000 community-based “Extermination Groups” were organized⁷. These

⁵ Murakami, Yoichiro (1996) *20 Seiki no Nihon (9) Iryo - Korei Shakai he Mukatte* [20 Century's Japan (9) - Medical Services - Toward Aging Society] Yomiuri Shimbun Sha. p. 50.

⁶ Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku 2003* [Simple Hygiene and Public Health 2003] Nanko do.

⁷ Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Years' History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai.

Table 5-2 History of Infectious Disease Control

1897	Enactment of Communicable Disease Prevention Law (8 target diseases: cholera, dysentery, typhoid fever, smallpox, epidemic louse-borne typhus, scarlet fever, diphtheria, and bubonic plague)
1910	Enactment of Vaccination Law
1919	Enactment of Tuberculosis Control Law and Trachoma Prevention Law
1932	Enactment of Parasitic Disease Prevention Law
1939	Establishment of Japan Anti-Tuberculosis Association
1947	Establishment of Institute of Public Health (now National Institute of Infectious Diseases)
1948	Enactment of Immunization Law (vaccinations against 12 diseases)
1951	Revision of Tuberculosis Prevention Law completely
1959	Support for care and education for children with tuberculosis, outbreak of polio in Hachinohe, Aomori Prefecture
1961	Emergency importation of polio vaccines and nationwide immunization program
1964	Revision of Immunization Law (live polio vaccine legislated)
1981	Infectious disease surveillance program commenced
1983	Trachoma Prevention Law repealed
1987	Commencement of Tuberculosis and Infectious Diseases On-line Surveillance System
1994	Tuberculosis Control Law revised
1998	Enactment of Laws Regarding Tuberculosis Control and Medical Treatment of Infectious Diseases (Infectious Disease Prevention Laws repealed)
1999	Tuberculosis State of Emergency declared
2001	Revision of Immunization Law

insect and rodent pest extermination programs were incorporated into community-based health organization activities, and expanded nationwide as “No Mosquitoes and Flies Program” launched in 1949. The use of DDT⁸, introduced by the GHQ, led to a marked reduction in fly and mosquito numbers. As a result of the use of insecticides and the activities of community volunteers, the incidence of acute infectious diseases associated with poor hygiene was rapidly reduced.

2) Trachoma and Parasitic Diseases

Although the Trachoma Prevention Law was promulgated in 1919, trachoma was still endemic after World War II. The prevalence was 214.3 (per 100,000 population) in 1949. Particularly in some fishing and farming villages, prevalence between 10 and 50% were not uncommon⁹. Since 1947, the date

of October 10 every year has been designated as “Sight Day,” when the Ministry of Health and Welfare, prefectural governments and other organizations have cooperated in presenting activities on eye hygiene and trachoma prevention. The Trachoma Prevention Law had undergone several revisions since 1947, increasing the level of subsidy for medical costs from the national and prefectural governments. In 1954, notification of trachoma cases by medical practitioners to their local public health center manager became mandatory.

Parasitic diseases also spread throughout the country, affecting the health of the populace. Rural villages used urine for fertilizer, and this recycling system served to recirculate parasite eggs among people. An improved urine-separating toilet did not get popular in spite of the national government promotion since the pre-World War II era.

⁸ The manufacture of DDT is now banned due to residual toxicity and adverse effects to human health.

⁹ Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Years’ History, Ministry of Health and Welfare (descriptive version)] Kosei Mondai Kenkyukai.

The Ministry of Health and Welfare then promoted a system of regular mass screening and deworming, as well as a prevention awareness program. Community organizations such as the Tokyo Association of Parasite Control played a big role in these parasitic disease control activities. Mass deworming programs were conducted at schools and workplaces, aiding in a dramatic reduction in the incidence of roundworm prevalence within ten years after the end of WWII.

3) Tuberculosis

TB control was reinforced comprehensively by a sweeping revision of the Tuberculosis Prevention Law in 1951 to systematize activities into health checkups, immunization, subsidy for TB treatment, registration of TB patients, home visit by public health nurse and so on¹⁰. The Ministry of Health and Welfare conducted the first National Tuberculosis Survey in 1953, and found more severe endemic status than expected. In order to improve this situation, “Guidelines for Strengthening of Tuberculosis Control Measures” were issued in 1954, and further revisions to the Tuberculosis Prevention Law were made in 1955. Developments in medical science for TB treatment, particularly the development of chemotherapeutics, had a big impact on TB control¹¹. With the advent of effective anti-TB drugs, TB was transformed from a fatal to a curable disease¹².

The national government established the Institute of Public Health (now the National Institute of Infectious Diseases) in 1947 to deal with the spread of infectious diseases, in particular TB, typhoid fever and dysentery. This institute, a testing and research institute under the jurisdiction of the Ministry of Health and Welfare, has conducted basic and applied research into infectious diseases,

and has played a leading role in infectious disease control programs.

Through these nationwide actions, the mortality rate from TB dropped sharply, and “cerebrovascular disease” became the highest mortality rate in 1951. This time in Japanese history is considered a transition period that lifestyle-related diseases and malignant neoplasm (cancer) replaced infectious diseases as major health problems.

1-4 Decline of Infectious Disease Phase (1961~1979)

The mortality rate of TB dropped sharply as was described before, and the notification rate has also fallen steadily since the 1970's. In 1975, the notification of TB fell below 100 per 100,000 population for the first time, and the mortality rate of TB dropped below 10 per 100,000 population. At this time, Japan moved from a high to a moderate TB burden country¹³. As a result, the emphasis on TB control also changed from a program aimed nationwide to a program concentrated in areas with a high notification. The improvements of sanitary conditions and nutrition brought by high economic growth led to the decline of the incidence rate of other infectious diseases and people became less concerned about them.

The national government directed prefectural and designated municipal governments to establish “Prefectural and Municipal Public Health Institutes” to improve public health at communities in 1964. It was aimed to establish scientific and technical institutions of local public health administration for research, inspections and food testing in addition to collection, analysis, and dissemination of public health information.

¹⁰ *ibid.*

¹¹ *ibid.*

¹² Murakami, Yoichiro (1996) *20 Seiki no Nihon (9) Iryo - Korei Shakai he Mukatte* [20 Century's Japan (9) - Medical Services - Toward Aging Society] Yomiuri Shimbun Sha. pp. 103-108

¹³ Shimao, Tadao (1996) *Wagakuni no Kekkaku Taisaku* [Tuberculosis Control in Japan] JAATA BOOKS No. 9, Japan Anti-Tuberculosis Association

1-5 Emerging and Re-emerging Disease Phase (1980~present)

The notification rate of TB remains still high in Japan compared with other developed countries even though TB is not referred to as the 'national disease' anymore due to the drop of its notification as it used to be¹⁴. The number of newly notified TB cases increased slightly in 1997 due to the trend since late 1980's that had increase of cases in the aged and small TB outbreaks in the susceptible young that were born after TB became less common. In 1999 the Ministry of Health and Welfare announced a "Tuberculosis State of Emergency," and instituted a series of programs based on the Tuberculosis Prevention Law, including promoting campaigns to increase public awareness of TB as a reemerging infectious disease, and strengthening the system of health checks, also expanding the system of specialized TB treatment centered on National TB Sanatoria.

The first official report concerning HIV was issued by the Centers for Disease Control and Prevention (CDC) of USA in 1981. In Japan, it was the first step in HIV/AIDS control that an "AIDS Taskforce" was established within the Ministry of Health and Welfare in 1983 to discuss the possible contamination with HIV in non-heat treated blood products imported from the U.S. Until the use of heat-treated blood products was regulated in 1985, a number of people contracted HIV from contaminated blood products. Notwithstanding the arguments put forward by various parties, it is undeniable that the delayed response by the national government increased the number of HIV infections (see Appendix 1).

Since 1990's, the threat of emerging diseases has come to be recognized even in developed countries. Cases of Ebola Hemorrhagic Fever brought from endemic area, outbreaks of Legionella that entered hot springs and water systems, Methicillin Resistant Staphylococcus Aureus

(MRSA) infections spread within hospitals, and food poisonings with the enterohemorrhagic E. coli group (O-157) have been observed globally. Most recently, the severe acute respiratory syndrome (SARS) attracted worldwide attention in 2003.

2. Tuberculosis Control Measures

TB remains a major health problem in many developing countries. The public health approaches, which were adopted by Japan and could reduce the incidence and mortality rate from TB rapidly, should therefore be of interest to these developing countries today. In this session, we will introduce the main TB control activities in Japan for the 10-year period commencing in 1946, and discuss which of them may be applicable in developing countries.

According to Ishikawa (1999), five factors contributed to the rapid reduction of TB after WWII in Japan: 1) increased level of national herd immunity due to the high prevalence before and during the WWII; 2) improved social environment and living standards (improvements in economy, nutrition, dwellings, education, social security, health insurance, and administrative structures); 3) improved public health infrastructure (increased numbers of medical institutions, establishment of public health centers, and improved skill base of medical services personnel); 4) strong government commitment to TB control (passing and enacting laws, budget allocation); and 5) promotion of community participation (establishment of Japan Anti-Tuberculosis Association, organization of patient support groups, educational activities by publication and broadcasting). Shimao (1996) stated that the lessons learned from Japan's TB control initiatives are: 1) commitment of the national government to conducting TB control measures; 2) training of personnel; 3) participation and cooperation of the community; 4) importance

¹⁴ Ishikawa, Nobukatsu (1999) *Nihon no Kekkaku Taisaku ni Manabumono* [Lesson from Japan's Tuberculosis Control] Public Health, Vol. 58, No. 8. pp. 26-27.

of technical developments; and 5) importance of international cooperation. Of these, the particularly emphasized points are 1), 3) and 4).

In this section, we will examine the present state of TB control programs in developing countries based on the analysis stated above. We will introduce four reference features as Japan conducted TB control when TB prevailed in the country: 1) strong governmental commitment (passing and enacting laws, budget allocation); 2) public health approach; 3) private sector participation; and 4) activities of TB specialists.

2-1 Main Tuberculosis Control Activities

2-1-1 Strong Governmental Commitment

(1) Legislation

TB control was strongly promoted in Japan during the World War II under the leadership of government. The strong governmental commitment can be seen in the legislation process in the relevant laws. The first legislation concerning TB was the 1919 "Tuberculosis Control Law." In the post-WWII period, "Regulations for Notification of Infectious Diseases" were issued in 1947, based on a directive from the General Headquarters of the occupying forces (GHQ) that was keen on tuberculosis control. These Regulations introduced the mandatory reporting of TB patients by medical practitioners to the local public health center within 24 hours after diagnosis. The Immunization Law enacted in 1948 made it compulsory for everyone aged less than 30 to undergo yearly tuberculin skin test, and BCG vaccination based on the test result. In 1951, the Tuberculosis Prevention Law underwent a complete revision, setting in place a comprehensive TB control program.

The revised Tuberculosis Control Law aimed to establish systematic TB prevention measures, and contained regulations for regular health checks, patient registration, infection control, patient

guidance, and medical treatment. It included specifically to: 1) widen eligibility for regular health checks (e.g. workers, school students, people in institution and other places living in groups, residents in areas with high rates of TB); 2) provide BCG vaccination annually to eligible people under the age of 30, or persons living in groups previously regulated under the Immunization Law; 3) to give home visits by public health nurses to TB patients according to the registration that public health centers made from notifications by local doctors; 4) to establish a system whereby the government bore part of the costs of treatment to encourage appropriate TB treatment; and 5) to promote the establishment and expansion of national, public and non-profit TB sanatoria. Ishikawa (1999) applauded this Law as legislation Japan can be proud of, and pointed out the following epoch-making three points: 1) a nationwide network of services (implementation of TB control) was set up, and the responsibilities of the national and local governments were specified; 2) subsidies were provided for preventive and therapeutic activities; and 3) TB treatment was integrated with general medical services.

TB treatment spending grew at this time to reach ¥64.1 billion in 1955, more than a quarter of the total health budget of ¥238.8 billion. The medical expense in hospital for TB was ¥48.8 billion, more than half of those in total¹⁵. These figures show us just how serious a TB problem was at the time as well as how much effort the country as a whole put into controlling this disease.

(2) Adoption and Spread of Screening and Treatment Guidelines

The Japan Anti-Tuberculosis Association (JATA) has played a leading role in TB control, and the government adopted the TB control guidelines produced by JATA, "Mass Screening for Tuberculosis" (1951), and "Therapeutic Guidelines for Tuberculosis" (1961). The screening and

¹⁵ Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Years' History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai. p. 609.

treatment programs in these guidelines were also used as the standard for health insurance, improving the quality of screening and treatment for TB nationwide.

(3) Thorough Investigation of the Actual Situation

Information collected from the system of patient registration at the public health centers, and monitoring activities by public health nurses, are analyzed by the public health centers to understand an accurate picture of the level of TB in the community. Treatment results are also evaluated, and used to improve future treatment regimens and control measures.

Since 1953, National Tuberculosis Surveys have been conducted every five years till 1973, and the results concerning the high notification of TB, and the symptoms of patients with TB, etc., have led to improvements in subsequent TB control programs. The results of these epidemiological surveys analyzed by the Tuberculosis Prevention Research Association, a specialized research institution, have been used to guide political decisions, such as making health checks and immunizations free (1957), and the change of TB control from a nationwide program for high TB burden situation to a more focused approach when Japan became a moderate TB burden country.

2-1-2 Public Health Approach

(1) Collaboration between Public Health Centers and Private Medical Institutions

After the “Tuberculosis Control Law” revision in 1951, the collaboration system between private medical institutions, including general practitioners, as service providers and health centres as specialized institutions for registration and management of patients as well as supervision of diagnosis and treatment was established.

The point of interest here is the involvement of

private general practitioners and their medical institutions into the prevention, diagnosis and treatment of TB. It was the time before the introduction of Universal National Health Insurance, when mostly doctors could consult patients without any standard of medical fee at private medical institutions. Moreover the quality of medical treatment was extremely varied, and did not have much trust from the populace¹⁶. It can be said that the situation at that time in Japan was similar to that in some developing countries now. In making use of private medical institutions, the Ministry of Health and Welfare sought to ensure the quality of the services, and increase the motivation of the people to have medical services. “Tuberculosis Advisory Committees” (comprising TB specialists, representatives from the Japanese Medical Association, and public health center directors) were organized in public health centers to monitor the quality of TB diagnosis and treatment at the private medical institutions. The Committees could successfully improve the skills in private medical institutions and encourage patients to have access to services through the system whereby subsidies for diagnosis and treatment could be withheld when the quality of diagnosis or treatment did not reach a certain standard. Hence, the collaboration system with wide use of private medical institutions and supervision by public health centers can be unique to Japan¹⁷.

(2) Community Activities by Public Health Nurses

Another characteristic of Japanese TB control programs was that, based on patient registrations, public health nurses working at public health centers have primary responsibility for the management of the TB patients. Receiving notifications from doctors, the public health center made patient management cards (Visible Card). Then public health nurses managed patients by

¹⁶ *ibid.*

¹⁷ Ishikawa, Nobukatsu (1999) *Nihon no Kekkaku Taisaku ni Manabumono* [Lesson from Japan’s Tuberculosis Control] Public Health, Vol. 58, No. 8.

recording the details of their treatment through home visits until the treatment was completed and the risk of recurrence was not observed. This one-on-one monitoring system by public health nurses to all patients was similar in concept to the present DOTS (Directly Observed Treatment, Short-course) strategy. It was also a reliable and inexpensive strategy, and at the same time a revolutionary system as well, that suited a time when medical institutions were in short supply, and the level of public awareness for TB was not high. In Okinawa Prefecture under American occupation after WWII, public health nurses were permitted to perform some medical functions (see Chapter 8 “Community-based Health Systems”), and conducted one-to-one monitoring of home-based TB patients, through identification, registration, and treatment. This method was unique to Okinawa where medical practitioners were extremely scarce, and it was most effective in reducing dropouts from treatment, and in preventing the spread of TB to other family members (see Boxes 5-2, 5-3).

2-1-3 Private Sector Participation

(1) Activities of Private Organizations

In setting up TB control programs, the government placed considerable emphasis on private sector participation from the beginning, and fostered non-governmental organizations and community groups to utilize them as operational groups.

In particular, the “Japan Anti-Tuberculosis Association” (JATA) was organized in collaboration with public and private sectors and academia, and has been at the forefront of TB control in Japan. The “Women’s Anti-Tuberculosis Association” that expanded nationwide as community organizations played an important role too. In Okinawa, each community on the whole participated in TB control initiatives under the supervision of public health nurses (see Chapter 8 “Community-based Health Systems”). Here we will introduce some of the more notable community-based activities.

1) Japan Anti-Tuberculosis Association

The Japan Anti-Tuberculosis Association (JATA) was established in 1939 supported by an Imperial household initiative. It is a non-profit corporation that has played an overall leading role in tuberculosis control programs up until present, together with the government, the business world, and the medical society. Since its foundation, JATA has assisted and conducted TB control activities, including research, treatment, health guidance, epidemiological surveys, and human resource development. The Association attracted the academic and financial elite of Japan and fund as well, with a member of the Imperial family as the Patron, the Minister of Health and Welfare as President, and Vice Presidents from the worlds of finance and medicine. A series of donations of land and money from the private sector have been received over the years for sanatoria and research

Table 5-3 Promotional Activities by the Japan Anti-Tuberculosis Association

Production of audiovisual materials	Publication of books, brochures, etc., production of slides, movies, video materials, etc.
Tuberculosis Control Week	Commenced in 1949. Present week commencing 24 September initiated in 1962.
JATA National Conference	Began in 1949 as Meeting of Regional Directors. National Conferences commenced in 1954.
Issue of Fukujuji (Patriarchal Cross) Seals*	First issued in 1952
Issue of “Fukujuji”, the official Journal of JATA	Issued bimonthly since March 1955
Tuberculosis Control Model City Awards	First awarded in 1957, selection criteria have been changed several times
Calling for medical histories from TB patients and survivors, and their families	First call in 1958, ceased in 1994

*Fukujuji Seals are used for fundraising and promotion of the awareness and knowledge of the diseases in order to build a healthy and pleasant society without tuberculosis, lung cancer, or other chest diseases.

Source: Shimao, Tadao (1996)

institutions. JATA has established branches in prefectures all over the country, and has set up model regions, and conducted training programs for doctors, nurses and radiographers, as well as surveys on TB prevention.

In response to democratization after WWII, JATA was reestablished as a voluntary non-governmental organization with a president from civil society. The rules for donations and regional branches were also revised. Using the burnt out remains of the Dai-ichi TB Dispensary in Tokyo, JATA conducted X-ray testing and treatment activities. Group screening was also recommenced in earnest at workplaces and schools in the capital city area. Mobile clinic and counseling using portable radiographic equipment, which became available nationwide later from the model activity, began to tour rural villages around this time. In this period, TB control workers were overwhelmed with a flood of patients and those who wanted screening for TB due to the lack of medical facilities after the destruction of WWII. Screenings with portable X-ray equipment and health educations to proclaim the importance of TB control were conducted in front of train stations where many people gathered.

JATA also contributed to human resource development, conducting retraining for public health nurses and general nurses as TB control instructors prior to WWII. The Research Institute of Tuberculosis, JATA, began TB specialist seminars in 1948 in the midst of the endemic of the disease. Young enthusiastic doctors from all over the country participated in these seminars and contributed to the enhancement of technology for front line workers in TB control.¹⁸ The Training Course in Tuberculosis Control entrusted by the Ministry of Health and Welfare was initiated in 1951 in order to train doctors and radiographers to disseminate the correct TB screening techniques.

JATA has consistently supported the development of techniques for the prevention and treatment of TB. In 1957, it developed a freeze-

dried vaccine to replace the previous liquid vaccine that had been difficult to store. This vaccine was subsequently declared the standard formulation by the World Health Organization (WHO).

In collaboration with national and local governmental and public bodies, JATA has conducted education and awareness campaigns to the general public and TB patients in order to teach TB control accurately and cooperate in it. Table 5-3 shows the main promotional activities undertaken by JATA in cooperation with national and local governmental and public bodies, after Japan had recovered from the confusion of the post-WWII era.

2) Women's Association for Anti-Tuberculosis

A characteristic of awareness and information campaigns related to TB control in Japan is the role of women's organizations. Women have banded together in their local communities to recommend TB screening and vaccination to promote early detection and treatment. A representative group is the Women's Association for Anti-Tuberculosis formed in Nagano City in 1950 on the recommendation of Princess Chichibu. It later developed into a prefecture-wide confederation in 1957. Similar organizations were then inaugurated in other prefectures nationwide. With "Tuberculosis is prevented by the hand of housewives" as its motto, the Women's Anti-Tuberculosis Association has conducted education and awareness campaigns aimed at housewives, and developed a number of detailed and passionate programs in collaboration with governments.

(2) Activities by Major Corporations

As the national TB control program went into action after WWII, it was the programs initiated by major corporations that firstly showed significant results. In the late 1940s, the burden of TB in employees of major corporations was that 6.3% required treatment, and 2.3% needed to take time off work to recover. Typically TB treatment

¹⁸ Shimano, Tadao (1999) *Rokuju-nen no Kiseki* [Sixty Years' History] Japan Anti-Tuberculosis Association.

required admission for two to three years to mainly take a rest when the effective chemotherapy was not available, but the law guaranteed three years compensation for patients who had sick leaves for TB treatment. If an employee developed TB, their employer had to pay their salary for the time off work, and for the treatment itself, as well as the cost of a replacement worker. Large corporations accordingly set up their own TB management clinics, employed specialist staff, instituted a system of twice a year health checks, and treated any diagnosed patients in dedicated wards. The results were remarkable with a rapid drop in new notifications due to early diagnosis through regular health checks, and an end to the cycle of infection within the companies. The success of these TB control programs contributed not only to benefits to these large companies themselves, but also to the increase of the gross national product (GNP) of Japan, and gave impetus to its economic development¹⁹.

(3) Roles of the Mass Media

It was an important approach to encourage people to understand and cooperate with TB control programs when TB was endemic. To this end, education and awareness campaigns were conducted for the general population as well as TB patients. The main activities in this field were the aforementioned awareness campaigns conducted by JATA, and another example was the monthly series "Accurate Knowledge about Tuberculosis" in the magazine "Kenko Dohjin" (Health Club), written by TB specialists and mainly aimed at TB patients. NHK ('Nippon Hoso Kyokai' Japan Broadcasting Corporation) also provided a regular program on the radio, one of the most powerful forms of mass

media at the time, called "Ryoyo no Tomo" (Friends of TB Treatment, later changed to "Ryoyo no Tebiki," or Guide to TB Treatment). Through the use of both print and broadcast media, accurate information about methods of diagnosis and treatment for TB was disseminated to doctors as well as patients throughout the country²⁰. In this way, the entire population came to be aware of the seriousness of the TB problem, leading to the revisions of the Tuberculosis Control Law in 1951.

2-1-4 Activities of Tuberculosis Specialists

TB specialists at that time were mostly pathologists, microbiologists, or clinicians. Their wide-ranging activities on behalf of public health played an important role in research, collection and assessment of information, lobbying to politicians and administrators, and increased awareness in the general populace. Public health specialists, based in the Ministry of Health and Welfare, prefectures and public health centers, were very well-trained²¹.

Technology advances in early detection and vaccines also played an important part in the reduction of TB. Particularly worthy of note are the development of indirect chest radiography, and the mass-production of freeze-dried BCG vaccine. As mentioned before, this freeze-dried vaccine is still in use as the world standard formulation. In 1957, Professor Hamao Umezawa developed Kanamycin, an antituberculosis drug still used today for multiple drug resistant strains. Furthermore in 1963, Canon, a private company, contributed to the technological innovation by the development of a mirror camera for indirect chest radiography, which is used for early detection of lung cancer today.

¹⁹ Shimao, Tadao (1996) *Wagakuni no Kekkaku Taisaku* [Tuberculosis Control in Japan] JAATA BOOKS No. 9, Japan Anti-Tuberculosis Association. pp. 42-44.

²⁰ Ishikawa, Nobukatsu (1999) *Nihon no Kekkaku Taisaku ni Manabumono* [Lesson from Japan's Tuberculosis Control] Public Health, Vol. 58, No. 8.

²¹ *ibid.*

Table 5-4 Differences in Tuberculosis Control Strategies between Japan and Developing Countries

	System previously used in Japan	System used in developing countries (WHO system)
Case detection	<ul style="list-style-type: none"> • Mass screening using indirect chest radiography • Symptomatic patients self-report to health services • Emphasis on radiography 	<ul style="list-style-type: none"> • Symptomatic patients self-report to health services • Mainly diagnosed by sputum smear microscopy
Treatment	<ul style="list-style-type: none"> • Institutional treatment with longterm/compulsory admission • Follow-up mainly through radiographic findings • Treatment at private or public institutions • Patient management by public health centers 	<ul style="list-style-type: none"> • Mainly outpatient treatment (directly observed treatment) • Follow-up mainly through microbiological findings • Treatment and patient management by public health centers
BCG	<ul style="list-style-type: none"> • Skin inoculation (multiple puncture technique) for those with negative tuberculin skin test 	<ul style="list-style-type: none"> • Intradermal (integrated in Expanded Programs on Immunization (EPI))

Source: Ishikawa, Nobukatsu (1999)

Box 5-1 The DOTS Strategy

The DOTS (Directly Observed Treatment, Short-course) strategy is a comprehensive tuberculosis control strategy comprising the following 5 elements²²:

- 1) Strong government commitment to TB control activities
- 2) Case detection by sputum smear microscopy among people with symptoms
- 3) Standardized short course treatment regimen for all detected sputum smear-positive cases, under appropriate supervision (directly observed therapy)
- 4) Regular, uninterrupted supply of all essential anti-TB drugs
- 5) Standardized system of patient records and reporting that allows supervision and assessment of the TB control programs

This strategy was produced by Dr. Arata Kochi, who became the Director of the WHO TB Program in 1989, with the assistance of a number of TB specialists. Dr. Kochi noted that, in developing countries with a weak public health framework, the simple strategy of identifying and treating sputum smear-positive cases, and BCG immunization to newborn babies, was not achieving the desired results. He pointed out, as one factor in this failure, a tendency to concentrate on “what should and could be done,” and not to pay attention to “how to do it.” Then he emphasized a results-orientated approach suited to the region. Successful TB programs in developing countries having been analyzed, guidelines that would be the theoretical basis for the DOTS strategy were presented²³.

The DOTS strategy places great emphasis on the notion that “Only the introduction of a system of direct observation of treatment can achieve the target cure rate of 85%.” Hence, the first targets set by the WHO for the DOTS strategy is the establishment of a system that will cure 85% of all sputum-smear positive patients, and second is the achievement of 70% detection rate²⁴.

²² Suchi, Masashi (1999) *Sekai no Kekkaku - DOTS Senryaku wo Chushin to shite* [World's Tuberculosis - Focused on the DOTS Strategy] (<http://jata/or.jp/rit/rit/rj/gtc99.html>)

²³ *ibid.*

²⁴ Ishikawa, Nobukatsu (1994) “*Sekaino Kekkaku Mondai to Nihon no Kosyueisei* [Tuberculosis as a World's Issue and Public Health in Japan]” *Public Health*, Vol. 58, No. 8.

2-2 Tuberculosis Control in Developing Countries in the Light of Japan's Experience

The international mainstream in TB control is the "Framework for Effective Tuberculosis Control" (now known as the "DOTS strategy") announced by WHO. This strategy considerably differs from that used historically in Japan (see Box 5-1 for details of the DOTS strategy). Comparison of TB control activities with those presently used in developing countries (see Table 5-4) shows that Japan invested a great deal of money and personnel in testing entire populations to detect TB cases, and strove to stop the spread of the disease through early detection.

Developing countries place emphasis on treatment rather than on early detection to stop the spread of infectious disease. As the international mainstream of TB control strategy is the DOTS strategy at present, in this essay we will focus on parts of the Japanese post-WWII experience that may be of use for successful execution of DOTS strategy. We will study it particularly in terms of some of five elements of DOTS strategies mentioned in Box 5-1; first, in view of "governmental commitment." Secondly the function of public health centers, activities of public health nurses, and community participation will be studied as a topic of "Appropriate patient management and treatment." Thirdly the function of public health centers and the role of specialized institutions will be reviewed from the viewpoint of element, "System of patient records and reporting, supervision and assessment of the TB control program."

2-2-1 Governmental Commitment

In many developing countries, TB control is not necessarily given high priority, and funding is

not enough. In Japan, on the other hand, it can be noted that the best promoting factor for TB control was that the government tackled its "national disease (TB)" with full commitment²⁵. A nationwide program began in Japan with the comprehensive overhaul of the Tuberculosis Prevention Law in 1951. At a time of financial hardship, a significant budget was allocated to provide public funding for preventive and therapeutic programs. For the people in poor countries and regions that suffer a health insurance system with economic inequity, it functions very effectively that all or part of the cost of medical treatment, health checks, and immunization are covered by public expenditure. Also private medical institutions were designated to the core of TB screening and treatment in Japan.

For developing countries to establish a system of the kind of quality present in Japan, the government would have to issue guidelines for screening and treatment, monitor the quality of diagnosis and treatment at medical institutions by inspection agencies, and link public subsidy with the accreditation by these inspection agencies.

2-2-2 Appropriate Patient Management and Intensive Treatment

A fundamental element of the DOTS strategy is appropriate patient management and intensive treatment. According to Shimouchi, prior experience of assistance has shown that the establishment of a system of primary health care (see p. 181) and the cooperation of the community are essential to the most important factor that patients take their medications in compliance with instructions every day²⁶. In Japan, the expansion of primary health care was achieved by the reinforcement of the function of public health centers and activities of public health nurses.

²⁵ Shimao, Tadao (1996) *Wagakuni no Kekkaku Taisaku* [Tuberculosis Control in Japan] JAATA BOOKS No. 9, Japan Anti-Tuberculosis Association.

²⁶ Japan International Cooperation Agency (1999) *Primary Health Care wo Yoku Shirutameni - Nihon no Keiken wo Fumaete* [To Understand Primary Health Care - Based on Japan's Experience], Japan International Cooperation Agency.

(1) Roles of Public Health Centers

In Japan after WWII, public health centers were positioned as main providers of primary health care, and the greatest challenge they faced was TB control. Public health centers adopted a holistic approach to TB that combined public health and primary health care. This approach included the detection, management and treatment of patients, and prevention of contagion through management of sources of infection.

As more private medical institutions were established after WWII, the diagnosis and treatment of TB was entrusted to the private medical sector. It is worthy of note, however, that inspectors from the public health centers played an important role in improving the quality of services offered by private medical institutions. Japan's experience indicates that if private medical institutions are used in TB control programs, a system can be considered whereby a local public

institution plays a supervisory role to ensure the quality of services offered.

(2) Activities of Public Health Nurses

At the public health centers, public health nurses played an important role in case detection, and the promotion of screening and treatment. In general, it was through their outreach activities that public health nurses sought to detect people with symptoms and oversee treatment for patients, but this system may also be applicable to the DOTS strategy. During the time of the TB epidemic in Japan, public health nurses were able to provide one-on-one care because the population served by each nurse was not so large that they covered all households in their service area. In most developing countries however, the number of public health nurses is not as many as those in Japan. In that case, health volunteers could take on some of the roles filled by Japanese public health nurses. For

Box 5-2 Community Activities in One United Body by the Residents of Okinawa Prefecture

In Okinawa Prefecture after WWII, there are a number of examples of TB control that made full use of community resources. Public health nurses, the mainstay of community health in Okinawa (see Chapter 8 "Community-based Health Systems"), actively mobilized municipalities and local government administrators (ward chiefs) as well as local organizations such as women's groups, youth groups, and senior citizens' groups. These local groups jointly promoted health education and TB screening in the community.

The "Ryukyu Tuberculosis Prevention Society" was established in 1953 for TB control activities in partnership with the Ryukyu Government. It conducted awareness campaigns, publicity activities, and group screening programs. In 1956, recovered patients took the lead in organizing the "Okinawa Patient's Association" to provide TB patients support including guidance for treatment and daily life, and assist screening and publicity activities for TB control. The Okinawa Patient's Association became a non-profit corporation, and established the "Center for Assistance and Supervision of Recovered Tuberculosis Patients" to aid social rehabilitation activities for TB patients after treatment.

Source: Nakasone, Tadashi (2000) "Kekkaku Taisaku [Tuberculosis Control]," Institute for International Cooperation, *Okinawa no Chiiki Hoken Iryo ni okeru Kaihatsu Keiken to Tojokoku he no Tekiyo Hokokusho* [Okinawa's Experience on Development of Community-based Health Care System and Application toward Developing Countries], JICA

²⁶ Japan International Cooperation Agency (1999) *Primary Health Care wo Yoku Shirutameni - Nihon no Keiken wo Fumaete* [To Understand Primary Health Care - Based on Japan's Experience], Japan International Cooperation Agency.

Box 5-3 Home-based Approach to Tuberculosis Treatment in Okinawa

Okinawa experienced a major epidemic of TB during the 1950s and 1960s, with 3,000 new patients notified each year during that period. Public health centers and public health nurses played a central role to deal with this situation. In particular, public health nurses conducted sound and comprehensive treatment, which we might be able to call “home-based treatment system,” including detection and registration of cases, guidance for home-based treatment, supervision of drug taking, and health education for the patients’ families (prevention of new infection) through outreach activities in outlying islands and remote villages when there was not a clear legislative framework. This treatment system, initiated by public health nurses in Okinawa in the 1950s, is similar in concept to the DOTS (Directly Observed Treatment, Short-course) strategy espoused by WHO.

In a time of shortages of many things, public health nurses made full use of the resources at hand. As an example, public health nurses were taught that patients should expectorate into a piece of paper tissue and burn it to prevent the spread of TB, but at that time, patients didn’t have even a piece of toilet paper or tissue paper at their houses. The nurses improvised to advise patients to use what is available such as “*yuuna*” leaves, readily available in Okinawa, to substitute for tissue paper and empty cans supplied from the Americans, to fill up with sputum to bury. To avoid the spread of infection they advised families living in narrow “*nagaya*” (row houses with communal sleeping arrangements) to sleep in an alternating head to foot arrangement, and hang up a curtain of clothes, etc. between the patient and the rest of the family. As a result, the spread of TB was kept to a minimum.

Public health nurses could give this sort of guidance because they knew the living conditions and economic status of each patient and had sincere desire for improvement. It is often said “That can’t be done because we don’t have resources” at sites of cooperation projects in developing countries, but the examples in Okinawa give us a powerful reminder of the fundamental principle, “Public health programs can be started with the resources we have now.”

Source: Nakasone, Tadashi (2000) “*Kekkaku Taisaku* [Tuberculosis Control],” Institute for International Cooperation, *Okinawa no Chiiki Hoken Iryo ni okeru Kaihatsu Keiken to Tojokoku he no Tekiyo Hokokusho* [Okinawa’s Experience on Development of Community-based Health Care System and Application toward Developing Countries], JICA

example, as a part of the DOTS strategy in the Philippines and other countries, public health nurses make a partnership with their treatment partners (health volunteers who observe patients taking their daily medicine) to deal with treatment and direct observation of drug taking of each individual patient²⁷. In this case, each health volunteer covers the same population size as a public health nurse would in Japan.

If health volunteers are mobilized, an appropriate level of knowledge and skills will be required, and some sort of incentive may be needed. Public health nurses were paid rather well when TB was endemic and they managed their duties with a strong sense of mission, likewise the government provided strong backup. Japan’s experience in this area may be of benefit to developing countries when they consider improving

²⁷ Suchi, Masashi (1999) *Sekai no Kekkaku - DOTS Senryaku wo Chushin to shite* [World’s Tuberculosis - Focused on the DOTS Strategy] (<http://jata.or.jp/rit/rit/rj/gtc99.html>)

labor conditions of their health services personnel.

(3) Comprehensive Home-based Tuberculosis Control Approach (For examples in Okinawa, see Boxes 5-2, 5-3)

It is the reality at present that detection of people with symptoms, compliance with continued treatment, and a stable supply of medication cannot be improved easily in regions lacking in medical institutions and medical services personnel even using DOTS strategy.

Okinawa under American occupation suffered an extreme lack of medical institutions and medical services personnel, but this was resolved to some extent by the establishment of a system of public health nurses who were allowed to provide some medical services. Public health nurses were responsible for all actions on primary health care and played the central role in TB control. They dealt with the lack of medical institutions and medical services personnel by instituting a system of home-based treatment. Drugs and supplies necessary for treatment were kept in the drug cupboard at substations of public health centers, managed by public health nurses to ensure that the necessary drugs were always available. The comprehensive TB control approach seen in Okinawa is a method that can be used for the reliable implementation of the DOTS strategy. As a large amount of budget is not required for this kind of comprehensive TB control, there are a number of aspects that are applicable to areas with limited medical resources. It will be necessary to publish these activities after further analysis and systematization.

2-2-3 Supervision and Assessment Based on Patient Records and Reporting Systems

In developing countries the lack of statistical and information management systems is generally an impediment to capacity building in the field of public health and medical services. A system of statistical and information management is essential

in making improvements in any health programs, and it is also considered important in DOTS strategy to improve the program by the assessment of therapeutic results based on the information collected by the patient monitoring system.

The base of TB control in Japan was a patient registration and management system lead by public health centers. The comprehensive patient management of the public health nurses, based on home visits, played a major role in the success of this system. In Japan, the data gathered by the public health nurses was collated at public health centers, and then it contributed to assessment of the situation and policy making in the service area. Furthermore, based on the results of National Tuberculosis Surveys, first conducted in 1953, radical changes were made to subsequent TB control programs.

The establishment of a patient registration and management system, which will form the basis of a system of statistical and information management, requires reinforcement of functions in several different levels. The needs of reinforcement in the first level is the accuracy of data collection from the grass roots level, followed by proper statistical analysis at the middle level (public health centers), and the capability of further analysis and policy formulation at the highest level (the national government). In developing countries, in order to set up a statistical and information management system, an effective first step is to establish a system of patient registration and management out in the field, at public health centers and health posts. The greatest problem in this regard is a lack of personnel in public health centers and health posts. There are few developing countries with sufficient healthcare staff such as public health nurses and general nurses for outreach services to monitor each individual patient and their family. The approach most likely to succeed is to train health volunteers to compensate for the lack of healthcare staff.

Table 5-5 Global Statistical Overview of Parasitic Disease

Disease	No. at risk of infestation	No. infested	Yearly no. deaths
Malaria	2,020 million	500 million	1.5 ~ 2.7 million
Dracontiasis	100 million	0.15 million	Rare
Chaga's disease	100 million	18 million	45,000
Schistosomiasis	600 million	200 million	20,000
Intestinal parasites	4,000 million	3,500 million	Pinworm: 135,000 Protozoa: 90,000
Lymphatic filariasis	1,100 million	120 million	High incidence in patients with elephantiasis
Onchocerciasis	120 million	18 million	High incidence in blind patients
Leishmaniasis	350 million	12 million	75,000 ~ 80,000
Trypanosomiasis	55 million	0.3 million	20,000

Source: WHO (2002)

3. Parasitic Disease Control

As shown in Table 5-5, parasitic diseases present a major public health problem to developing countries. Soil-borne parasites, because of their relatively low fatality rate, tend to be ignored, becoming the “forgotten parasites.” The fatality rates may be low, but the prevalence of infestation is high, so the actual number of deaths is significant.

Outbreaks of parasitic diseases were also seen in various parts of Japan in the past. During the post-war period of chaos, the health of the people was adversely affected by a series of outbreaks of parasitic diseases, including soil-borne parasites, malaria, filariasis, and schistosomiasis. The infestation rate with soil-borne parasites, such as hookworm and roundworm, were particularly high nationwide. The average hookworm infestation rate nationwide was 62.9% (Ministry of Health and Welfare in 1949). This was a major cause of ill health, with some of those affected requiring hospital admission due to malnutrition, even in some cases leading to death.

Initiatives to combat these soil-borne parasites involved rigorous screening, antihelminthic treatments, and public health education. Subsequent economic development, advances in medical science and treatments, and introduction of the social security system saw parasitic diseases all but wiped out in Japan. The prevalence of soil-borne parasites has fallen to around 0.01%, and

malaria and filariasis are no longer seen, apart from a few cases brought in from overseas each year.

Parasitic disease control initiatives in Japan have not simply aimed to eliminate the parasites, but through education campaigns and community participation have sought to encourage community-based activities. Parasite control has thus been linked to a comprehensive public health campaign, associated with community-based health and an improved standard of living. Japan's experience attracted a great deal of attention in the 1960s from other Asian countries and the WHO as a successful preventive campaign, and even now is worthy of consideration in producing a comprehensive community-based health system.

In this essay, we will present the Japanese parasitic disease control initiatives in the post-war period, followed by a number of examples of international cooperation in this field, and discuss the possibility of future applications of Japan's experience.

3-1 Post-war Measures against Soil-transmitted Parasites

During the post-war period of chaos, when infestations with soil-borne parasites such as hookworm and pinworm were rampant, programs were conducted by government, parasitologists and community groups, each keenly aware of their respective roles.

3-1-1 Measures Taken by Government

The Ministry of Health and Welfare reached the conclusion in the late 1950s that, even though the post-war chaos had ended, the rate of infestation with hookworm remained particularly high in rural communities, resulting in considerable damage to health and loss of productivity. In 1950, after the urgent problems of the post-war period had settled down to a certain extent, the Ministry of Health and Welfare held a “Parasitic Disease Control Measures Conference” inviting scientific researchers and public servants. A lively debate ensued over vector control, environmental measures, and infection control measures.

Two main schools of thought emerged, the first emphasizing the need for improvements in sanitation, indicating that no real solution was possible until the use of night soil as fertilizer was addressed, and the second, led by parasitologists, calling for a mass screening and mass treatment approach. As the first approach would take a great deal of money and a considerable amount of time, the latter approach was adopted as the main initiative in the short term.

The lack of scientific knowledge to back up parasitic disease control measures led to a program of research into the following seven topics:

- 1) development and trialing of antihelminthics;
- 2) epidemiological studies of parasites;
- 3) resistance by parasite eggs and methods of killing eggs;
- 4) distribution of parasite eggs in the environment;
- 5) parasite eggs adherent to vegetables, and how to remove them;
- 6) parasite eggs in night soil and ways to treat them; and
- 7) identification of the optimum methods for mass screenings.

The results of these researches were successively incorporated into parasitic disease

control measures²⁸.

At the same time, hookworm infestations were also considered a serious problem, so the Ministry of Health and Welfare conducted a nationwide survey through the public health centers to assess the actual extent of the situation. The results were released in 1960, revealing a 10.2% positive rate among the 95,490 surveyed. Another survey by the Japan Association of Parasite Control (JAPC, see following section) showed a number of regions with higher infestation rates, some exceeding 50%.

The Ministry of Health and Welfare provided a budget of ¥37 million in the 1963 financial year for hookworm control measures. Programs of testing and extermination were initiated in Ibaraki and five other prefectures, as well as the application of pesticides (to kill eggs) to the night soil from rural homes. This national assistance project continued until 1969, and in response, the prefectures developed their own projects along the same lines. Of the national assistance programs, some 70% of the stool examination programs were entrusted to the local parasite control associations²⁹.

3-1-2 Involvement of Community Groups

(1) Tokyo Association of Parasite Control (TAPC)

Before the national government first engaged in parasitic disease control initiatives in earnest, the only public institution dealing with parasites in the national capital was the “Tokyo Parasitic Disease Clinic” that conducted stool examinations on a fraction of the Tokyo residents. Public health centers at that time had their hands full with infectious disease control measures, in particular TB, and did not have the capacity to deal with parasitic diseases. A number of small-scale groups arose in the community to conduct stool examinations for parasites, but there were no standards or regulations governing their activities.

²⁸ Kunii, Ayumi (1998) *Hoken Kaikan Monogatari -Jo-kan* [Story of Health Center] Hoken Kaikan.

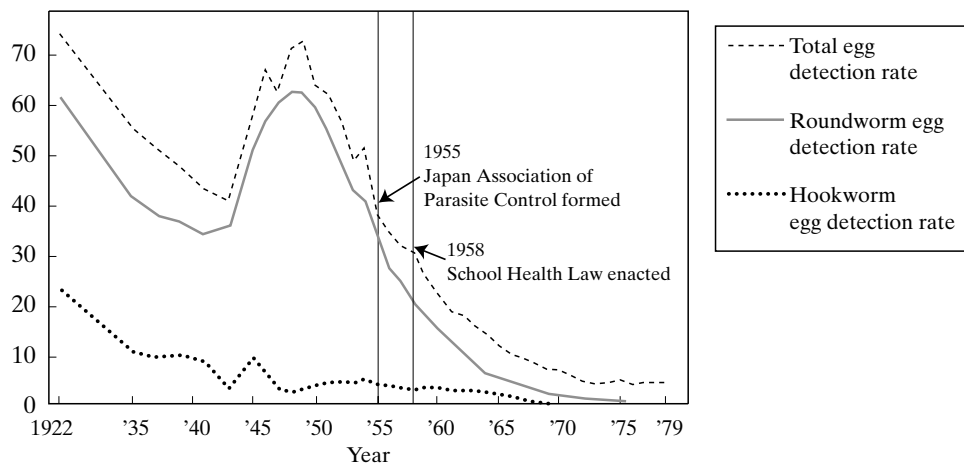
²⁹ Kunii, Ayumi (2000) *Hoken Kaikan Monogatari -Chu-kan* [Story of Health Center] Hoken Kaikan.

The Tokyo Public Hygiene Association was established in 1949 (name changed to the Tokyo Association of Parasite Control the following year), with the assistance of the leading figure in parasitology at the time, Professor Koizumi of the Department of Parasitology at the Keio University School of Medicine. The Association commenced a campaign of stool examinations at primary and junior secondary schools. This project was later expanded to include businesses and major corporations covered by government health insurance programs, and the TAPC assumed the position of the national leader in conducting stool examinations and antihelminthic treatments. At this time, the Ministry of Health and Welfare and Municipality of Tokyo began a system of parasite control measures at public expense. Effective antihelminthic medications were not available in quantity at that time, so the challenge was how to exterminate the parasites after a positive stool examination. The TAPC lobbied the national and Tokyo metropolitan governments for antihelminthics to be manufactured in Japan in bulk, and strove to encourage accurate prescribing. The Association established its own clinic in 1951, at which it revolutionized antihelminthic

treatments, for example developing a method of eradicating hookworm in only one day, where it had previously taken one week.

The TAPC also conducted awareness campaigns, producing various information pamphlets, spreading the message to the general populace about disease caused by parasites and how to exterminate them. It published a monthly journal "Parasite Control" that was distributed to schools within the Tokyo metropolitan area with the assistance of education committees and ward offices. During Parasite Control Week, booths positioned outside department stores and train stations provided free advice, stool examinations, and distributed antihelminthics. As part of this awareness campaign, people looked at their own stool sample under the microscope, confirmed what sort of parasite it was, and then took the appropriate antihelminthic medication in the correct manner. Prior newspaper, television and radio advertising was effective for this campaign, with large numbers lining up to participate, thus increasing the publicity effect. This campaign became the model for subsequent infectious disease awareness campaigns, on the streets or in business premises.

Figure 5-2 Trends in the Prevalence of Roundworm and Hookworm Infestations



Source: based on data from Ministry of Health and Welfare and Japan Association of Parasite Control

Box 5-4 The Okinawan Zero Parasite Campaign

In Okinawa, parasitic disease control programs only began in earnest with the establishment of the private “Ryukyu Parasite Testing Center” in 1961 by a non-governmental organization concerned at the delay in the official response to the high levels of parasite infestation in rural villages. The “Okinawa Association of Parasite Control” grew out of the Center in 1963, with the aim of raising public awareness of parasitic infestation as a social problem. A total of nine “Zero Parasite Campaigns” were run over a 5 year period (1965~1969), with outstanding results. Three distinguishing characteristics of these campaigns were: 1) they were led by a NGO; 2) effective use of the mass media; and 3) the emphasis on information provision to the public (participation of doctors and public health nurses). As a result, the community became more and more vocal, urging government to participate, with the result that a succession of local governments allocated funds for the campaigns. Assistance was also forthcoming from the American Government, expanding the budget further.

In 1964, before the first campaign commenced, a “Parasite Symposium” was held at the Okinawa Medical Association general meeting. The accumulated results of studies performed in Okinawa by Tokyo University, Nagasaki University and Kagoshima University were announced, demonstrating to the people of Okinawa the need for parasite control measures. The Symposium also provided an opportunity for researchers, testing groups and medical services personnel to meet and share knowledge and techniques.

A non-governmental organization led the Zero Parasite Campaign, but it should not be overlooked that the program required the cooperation of doctors, public health nurses and laboratory technicians from both the public and private sectors.

Nakasone (2000) identifies six steps, followed repeatedly to identify parasite egg carriers, which can be utilized by developing countries to yield results similar to the Zero Parasite Campaign. They are: public education about parasitic diseases; testing (stool examination); explanation of results; treatment of detected cases; retesting; and health education and retreatment based on the results of the local campaign. Worthy of note is the system of local meetings where testing technicians and medical services personnel explain the test results to the local residents, making clear the significance of the program. These meetings further empowered the community to find ways of solving their own health problems themselves.

Source: Institute for International Cooperation, Japan International Cooperation Agency (2000) *Okinawa no Chiiki Hoken Iryo ni Okeru Kaihatsu Keiken to Tojokoku he no Tekiyo Hokokusho* [Okinawa's Experience on Development of Community-based Health Care System and Application toward Developing Countries], JICA

Box 5-5 Schistosoma Japonicum

The microscopic larval forms (cercaria) of *Schistosoma Japonicum* (oriental blood fluke) are found in open water, such as ditches in ricefields, in certain areas. They enter the bodies of humans, cows and horses through the skin; invade the liver and blood vessels, sometimes leading to death. The first medical reference to disease caused by this parasite was in 1847. The signs and symptoms were described in detail, although the cause was unknown, and there was no treatment. Subsequent studies demonstrated the existence of a new trematode, named *Schistosoma Japonicum* in 1904³⁰.

Schistosomiasis, or Katayama Fever, was known to be endemic in a small number of regions in Japan. *Schistosoma* extermination campaigns were conducted in these regions with assistance from national, prefectural, and local governments. They comprised group screening programs and treatment of carriers, as well as campaigns to exterminate the snails that act as intermediate hosts³¹.

As a result of these initiatives, the last detected case excreting Schistosomal eggs was in 1977, and snails infested with *Schistosoma Japonicum* have not been detected since 1976. Such results could be achieved in Japan because the distribution of endemic areas was limited compared to other affected countries, making snail extermination feasible, and because the residents of the endemic areas were anxious to eliminate Katayama Fever, and worked enthusiastically to that end.

(2) Japan Association of Parasite Control (JAPC)

Similar movements were seen in all parts of Japan, with the formation of the “Public Health Association” in Aichi Prefecture, and the “Osaka Association of Parasite Control” in Osaka. Parasite control bodies were also formed within universities, including Hokkaido University Medical School, Kyoto Prefectural University of Medicine, Niigata Medical College, and Chiba Medical University, as well as Prefectural Bureaus of Prevention, such as in Kanagawa and Fukuoka.

As of 1954, there were 13 parasite control associations around the country, conducting parasite control programs with guidance from parasitologists from the local university, with independent budgets and receiving no assistance from anywhere. In 1955, the Japan Association of Parasite Control was established, effectively uniting all the regional associations in a confederation under the leadership of the Tokyo Association of Parasite Control. The ethos of the JAPC was to

conduct public health activities, and raise the standard of testing in particular. The directors of the new Association were parasitologists, representatives of community organizations, and public servants responsible for parasite control from the Ministry of Health and Welfare. In effect, the JAPC was the operational organization for Ministry of Health and Welfare parasite control projects, responsible for the three main arms of group screening, treatment and prevention awareness campaigns.

The JAPC ran regular technical study exchanges to improve testing techniques, and to make up for the lack of technicians able to conduct testing, also conducted training programs for technicians limited to performing only parasite testing (recognized by the JAPC). JAPC also provided training in parasite screening to school health education and science teachers. Thus trained, the teachers conducted testing at their own schools, and some went on to become leaders in

³⁰ Tsuji, Moriyasu (1991) “*Nihon ni okeru Zyuketu Kyuchu Sho no Genjo* [Schistosomiasis in Japan]” *Kagaku Ryoho no Ryoiki* [Area of Chemotherapy], 7, 5, pp. 869-875.

³¹ Details of the discovery of *Schistosoma Japonicum*, and control measures, are to be found in Tanaka (1999)

parasite control programs in their local area. JAPC was instrumental in setting up microscopes and other equipment in each prefecture. JAPC developed the simple but highly sensitive methods of detecting intestinal parasites, the cellophane thick smear technique. This was adopted by the Ministry of Health and Welfare as an official stool examination method. Based on the belief that a non-governmental organization can only act independently when it has its own budget, JAPC trains personnel responsible for planning and management in each regional organization (promoters and supervisors).

3-1-3 Contributions by Parasitologists

Post-war Japanese soil mediated parasite control programs were enacted by JAPC and other non-governmental organizations, with valuable assistance from parasitologists. In particular, the Department of Parasitology at the Keio University School of Medicine, the leader in parasitology at that time, collaborated with the JAPC in determining the best stool sample testing and treatment methods, developed a series of new antihelminthic agents and methods of administration, and established a system of prevention and treatment of parasitic diseases for the entire country. Recognizing at an early stage that parasite control measures are a part of public health education, again in collaboration with the JAPC the Keio team produced public health educational pamphlets and books for the general populace, thereby increasing public awareness. It would not be an overstatement to say that these contributions by Japanese parasitologists formed the backbone of parasitic diseases control initiatives.

3-1-4 Characteristics of Japan's Initiatives

As we have seen above, parasitic disease control initiatives in Japan were conducted through cooperation between non-governmental organizations and university-based parasitologists, with full governmental support. Awareness and publicity activities run by non-governmental groups evolved into nationwide campaigns. Schools and businesses

participated wholeheartedly, bearing the costs for group parasitic disease control initiatives, starting with stool examination programs, as part of health management for their students and employees. The results of these initiatives can be seen in Figure 5-2. The roundworm infestation rate, 62.9% in 1949, plummeted to 8.2% 14 years later in 1963, showing that Japanese parasitic disease control initiatives achieved excellent results within a short period.

Consideration of the characteristics of Japanese initiatives in parasitic disease control that may be applicable to other countries yields the following 7 points:

- 1) Despite widespread morbidity, the response lacked urgency.
- 2) Complicated and high level techniques and equipment were not needed.
- 3) Only a modest budget was needed.
- 4) The public welcomed the rapid results that could be confirmed visually.
- 5) Stool examination and treatment programs were instituted at schools and businesses.
- 6) Awareness and publicity activities brought about a nationwide campaign.
- 7) There was cooperation from experts, and new techniques were developed.

3-2 Control of Parasitic Disease in Developing Countries in the Light of Japan's Experience

At present, although parasitic diseases still present a major health problem in many developing countries, control programs are often not given a high priority. Japan managed to bring the level of roundworm infestation down to zero in a short period of time through a program of regular mass antihelminthic treatment, and this experience is already being applied in many countries in various ways. Japan's experience attracted much attention from the WHO and other Asian countries in the 1960s, and excellent results were achieved from technical cooperation with South Korea commencing in 1966, followed by Taiwan in 1969. We will now discuss the lessons that can be learned from Japan's post-war experience, as well as the

experience already gained in international cooperation, that are applicable to future parasite control programs in developing countries.

3-2-1 Identification of Needs and Awareness

Campaigns

The background to soil-mediated parasitic disease control programs in Japan was the needs of the population, with a considerable number of people whose health was adversely affected. It is therefore of vital importance in developing countries before commencing control programs to first elucidate the needs of the population, determining the extent of infestation in the community and then eliciting the extent of attendant impairment to health.

Compared to some other diseases, parasitic disease control programs are fortunately relatively easily to detect and treat. The immediacy of results is known to be most appealing to the public. Programs run by non-governmental organizations such as the Tokyo Association of Parasite Control and the JAPC began with visits to schools and businesses, stressing the importance of stool examinations and treatment, gradually increasing the proportion of the population covered by screening programs. Through these grassroots awareness campaigns and the results that could be clearly seen by anyone, parasitic disease control programs gradually gained acceptance by the entire Japanese population.

The results achieved by community-based organizations also persuaded governments to provide funding, so that in the end the non-governmental organization became the operational groups for government projects. In addition to local grassroots awareness campaigns, in Japan large-scale publicity campaigns were also effective in promoting stool examinations and treatment to the entire nation. Led by community-based groups formed in each district to conduct parasitic disease control programs,

massive publicity campaigns were run at regular intervals to great effect, with the cooperation of the mass media (television, radio, newspapers).

3-2-2 Activities of Community Groups

In Japan's case, non-governmental organizations were ahead of government in recognizing the parasitic disease problem, and consistently led the way in conducting parasite control initiatives. In developing countries with high levels of parasitic infestation, it is difficult for governments alone to conduct programs of screening and treatment, in terms of finances and personnel. It will therefore be necessary for a public-spirited non-governmental organization to step in, and take on the task in the government's stead. It is a fortunate characteristic of parasite control initiatives that they do not require complicated techniques or expensive equipment, and it is relatively easy to assemble personnel, as non-medical staff will suffice for many of the tasks involved.

3-2-3 Collaboration with Experts

In developing countries, it is often the case that even where the prevalence of soil-mediated parasitic infestation, such as roundworm, hookworm, or pinworm, is high, parasitologists tend to concentrate on the serious parasitic diseases endemic to that country, and to cutting-edge medicine, and ignore the soil-mediated parasites. Japan's experience tells us, however, that the contributions by parasitologists are important in developing appropriate techniques. Japan has already trialed measures to educate parasitologists as part of assistance programs in developing countries.

An example is the establishment of the Asian Parasite Control Organization (APCO), initially comprising mainly parasitologists from Japan, South Korea and Taiwan³². The APCO contributes to training in parasitology, by means of the

³² The Philippines, Indonesia, Malaysia, Thailand, Bangladesh and Sri Lanka joined the APCO in 1974, and the first general meeting was held in Tokyo that year. With the addition of further representatives from Asia, Latin America and Africa, the number of member nations has risen to 24, and the WHO and other international organizations also attend meetings as observers.

following: 1) collection and dissemination of information regarding parasites in each member country; 2) epidemiological research, elucidation of routes of infection, development of techniques appropriate to each region, research into standardization of stool examination techniques; and 3) education of professionals in parasite control. At the invitation of JICA, the JAPC has held an “International Seminar on Parasite Control Administration” every year since 1980.

These seminars provide opportunities to pass on to researchers and administrators from developing countries the knowledge and techniques gained in Japan since parasite control programs began in the chaotic post-war period³³.

3-2-4 Linkage with School Health Programs

In many developing countries, national programs (vertical programs) in the field of infectious diseases, such as tuberculosis, malaria, and preventive vaccination, often commence as collaborative initiatives with comprehensive programs (horizontal programs) in fields such as community-based health, primary health care (PHC), and maternal and child health. Global recognition of school health as an example of a horizontal program is presently increasing.

Parasitic disease control programs in Japan concentrated on primary and junior secondary schools, with excellent results. The Japanese experience of combining parasite control with school health to develop a community-based health program, and further linking this with regional development, should be useful in finding solutions to community-based health problems presently faced by developing countries. This system used in Japan, of linking improvements in areas such as school health, family planning or community-based health with parasite control measures, is not to be seen in

the experience of any other developed countries. As described in Chapter 9 “School Health,” Japan commenced international parasitic disease control initiatives based on the “Hashimoto Initiative.” In one of these, the “Asian Centre of International Parasite Control” (ACIPAC) Project (see Chapter 9 Box 9-1), run in conjunction with the Mahidol University in Thailand as counterpart, programs combining parasite control with school health are in progress in the four surrounding countries of Cambodia, Burma (Myanmar), Laos and Vietnam.

3-2-5 Public Hygiene Approach with Control of Parasitic Disease as a Point of Introduction

In order to improve the health status of a community, it is preferable to first develop a relationship of trust between medical services personnel and the community. This will produce opportunities for the two parties to discuss health issues and work together in public health activities suited to the needs of the community. These early activities will in turn lead to better understanding on the part of community residents of the need for public health programs, and increase their participation. Recognition of the benefits will lead to residents tackling public health problems of their own initiative, and participating in fundraising activities to keep programs going.

Programs to prevent soil-mediated parasitic disease were incorporated into general public health improvement initiatives in Japan, and were used as a means of establishing a system of primary health care. A characteristic of these projects was that the aim was not merely prevention of disease by the target parasites, but rather the true objective was to link parasite control with other public health problems, and using success in the prevention of parasitic disease as the foundation for other preventive health activities. Examples where extermination of parasites has produced a

³³ Training of parasitologists in developing countries is important, but Japan is also experiencing problems in this regard, with fewer researchers with field experience in the control of soil-mediated parasites, and a lack of opportunities to gain hands-on experience, such as field trips. Future cooperation may take the form of field work in developing countries, and South-South cooperation.

relationship of trust between medical services personnel and villagers, leading to a new enthusiasm in tackling other public health problems, can be seen in Japan's experience and in Japanese cooperation in developing countries. The Japanese Organization for International Cooperation in Family Planning (JOICFP) is presently conducting an "Integration Project (IP)" linking parasite control with family planning. Taking inspiration from the success of parasite control initiatives in Japan, a program to prevent soil-

mediated parasitic disease, where the cause is readily seen and understood, and the results of treatment are quickly seen, was chosen as the introductory part of this IP. Hygiene education was provided to the community residents, and once the trust of the community had been achieved, family planning activities were commenced with community participation. This IP has been conducted in a number of developing countries; attracting favorable impressions (see Chapter 4 "Family Planning" and Box 5-6 for details of this IP). This IP demonstrates

**Box 5-6 Japanese Organization for International Cooperation in Family Planning
Integration Project (IP) in China
(also see Chapter 4 "Family Planning" and Box 4-6)**

Characteristic of the JOICFP Integration Project (IP) in China was the choice of a parasite control program as the introductory part, in light of community needs and the rapidity of results. It was therefore welcomed by the residents of the project regions, and was able to bring about comprehensive village reconstruction through incentives to improve lifestyles and raise living standards. Another end product was a marked improvement in reproductive health.

Activities associated with this project included training in promotion for each level (government, village committees, primary school headmasters and class teachers), education in parasite control as part of school health, and education in family health via children and outreach. Where needed, water towers were constructed to ensure a safe supply of drinking water, flushing toilets were introduced (methane gas from septic tanks used to produce electricity and cooking gas for stoves), and assistance for women's groups raising livestock, tree planting and starting small businesses selling food and drink. Worthy of note are the following points: ownership of this project was entirely in Chinese hands; extremely detailed, highly accurate and multifactor evaluation is being performed on this project (detailed baseline assessment was performed to allow accurate assessment of results); and high level of interest and cooperation from Chinese officials, academia and the community, particularly academics (15 have published papers: the depth of interest can be gauged by the number).

The Chinese have made this IP completely their own and plan to achieve the "triple combination: family planning, prosperity through the work of the farmers, and building cultured and happy families." This project will continue using an integrated approach, aiming to achieve happiness through public health activities, and can serve as a model for a global public health approach.

Source: Japanese Organization for International Cooperation in Family Planning (2000) *2001 nendo Gaimusho Kaigai Gijutsu Kyoryoku Suishin Dantai ni yoru Jinko, Kazoku Keikaku Moderu Purojekuto Suishin Jigyo—Chugoku Purojekuto Hyoka Chosa Hokokusho—Hainansho Konhaishi to Shanshisho Dariken Purojekuto* [Evaluation Report on Population and Family Planning Model Projects in Qionghai City of Hainan Province and Dali County of Shaanxi Province in China undertaken through a Ministry of Foreign Affairs FY2001]
----- (2002) *Jinko Kazoku Keikaku Ripurodadutibu Herusu Bunya Kokusai Kyoryoku Jigyo Chugoku IP Hyoka Ronbunshu* [International Cooperation Activities in Population, Family Planning and Reproductive Health—Report of Evaluation and Research on China's IP]

the effectiveness of the approach whereby “diseases” and “problems” common to a community are discovered, and the program to combat this “condition” is linked to improvements in public health and regional development.

4. Immunization Program

The aim of immunization is to prevent each individual from contracting vaccine preventable diseases through immunity as well as to prevent the group of people from epidemic of infectious diseases by maintaining a high level of immunity in the group (herd immunity)³⁴. Immunization is considered an extremely effective public health measure, and in 1974 the WHO and the United Nations Children’s Fund (UNICEF) jointly initiated the Expanded Program on Immunization (EPI) to prevent infectious diseases in childhood. They have made an effort to reduce the burden of vaccine preventable diseases through immunization originally on six EPI targeted diseases: diphtheria, pertussis, tetanus, poliomyelitis, measles and TB, to which hepatitis B, yellow fever, and haemophilus influenzae type B were added later in some areas. The WHO heralded its intention to eradicate poliomyelitis globally by the year 2005, and the American Region, the Western Pacific Region, and the European Region have been certified as polio-free. International organizations such as the WHO and UNICEF, and a number of donor countries, invested considerable effort in vertical programs in the EPI through the 1990s, but not all countries have achieved as high immunization coverage as expected.

In Japan, immunization programs have yielded excellent results, including the extermination of smallpox and poliomyelitis. In this essay, we will discuss several activities in Japan that may be applicable to developing countries in promoting their own immunization programs.

4-1 Immunization Programs in Japan

4-1-1 Trends in Programs

1) Pre-WWII Programs (~1944)

Japan has a long history of immunization programs stretching back 150 years. In response to the large numbers of deaths from smallpox, in 1876 the “Smallpox Prevention Regulations” were promulgated. With no effective methods of prevention and treatment available at the time, smallpox vaccination was made compulsory with penalties for those not undergoing immunization by the Regulations.

The “Communicable Disease Prevention Regulations” promulgated in 1880 were a pioneer for a modern infectious disease prevention policy. They required doctors to report patients with any of six infectious diseases (cholera, typhoid fever, dysentery, diphtheria, epidemic louse-borne typhus, and smallpox), and patients to be isolated if necessary. In principle local governments (municipality level) were designated for implementation bodies for infectious disease control. In 1897, with the enactment of the “Communicable Disease Prevention Law,” two new diseases (scarlet fever and bubonic plague) were added as target diseases. Moreover the roles of the national and local governments, individuals, and doctors were made clearer as were their respective financial obligations.

Despite these programs combining case identification, treatment and prevention, spread of infectious diseases could not be stopped. There were frequently large epidemics of smallpox in the late 19th century and the outbreak in 1908 killed 17,832 people. In response, the government enacted the “Immunization Law” in 1909. This law reinforced the system of smallpox vaccinations to clarify that local governments were responsible for implementation of vaccination and to prescribe the procedure, methods, and management based on family registers.

³⁴ Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku 2003* [Simple Hygiene and Public Health 2003] Nanko Do.

Table 5-6 Immunizations and the Target Disease

	Vaccination type	Target disease	Notes
Immunization Law	Routine (recommended) immunization Category I	Diphtheria (D) Pertussis (P) Tetanus (T)	Generally, DTP in Phase I, and DT in Phase II
		Poliomyelitis Measles Rubella Japanese Encephalitis	Poliomyelitis vaccine is usually administered twice a year, once in spring and once in fall
	Category II	Influenza	Elderly aged over 65, and other groups
	Temporary schedule	No diseases under this category at present	The Prefectural Governor designates diseases as specified by the Minister of Health, Labour and Welfare
Tuberculosis Prevention Law		Tuberculosis	BCG is administered to people with a negative Mantoux (tuberculin) test
Voluntary immunizations		Mumps Chickenpox Hepatitis B Other	As part of the Hepatitis B Mother to Child Transmission Prevention Project, pregnant women are tested for hepatitis B. Newborn children of HBsAg* positive mothers are administered hepatitis B vaccine, covered by health insurance.

Source: Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) p. 59

*Hepatitis B surface antigen

Box 5-7 The Effect of Suspension of the Vaccination Program on the Prevalence of Pertussis

The reason that the response to adverse effects after immunization became necessary was the controversy over adverse reactions (encephalitis, encephalopathy) of continued smallpox vaccinations that had not been detected since 1955 in Japan. Similarly, adverse reactions of DPT (diphtheria, pertussis, and tetanus) vaccines became a social problem in the 1970s. Measures taken by some local governments, such as the use of DT toxoid excluding the pertussis component, lowered the pertussis immunization rate. Some deaths caused by DPT vaccines were confirmed, thereafter the Ministry of Health and Welfare officially suspended DPT for a 2 month period in 1975. Although the suspension was only for 2 months, the recommended age of administration of pertussis vaccine was raised from less than 3 months to less than 24 months, and even after the recommencement, some local governments continued to substitute DT toxoid for DTP.

These factors and a loss of enthusiasm for vaccinations in general led to the vaccination completion rate falling to below 20% the following year, 1976, in the official statistics (statistics from the public sector only). This led to a massive increase in notified cases of pertussis from 1,084 in 1975 to 13,105 in 1979. In response to this increase in the incidence of pertussis, the whole cell DPT vaccine was replaced in 1981 by the acellular DTP vaccine causing a relatively lower incidence of adverse reactions. The subsequent recovery of the vaccination rate caused the incidence of pertussis to fall sharply, and it has remained low to the present day. This experience shows us just how much cases of diseases will increase if the immunization rate falls.

Source: Kimura (1987, 1988)

Following epidemics of influenza and typhoid fever, the national government directed local governments to conduct immunization for these diseases. However, the lack of scientific evidence concerning effectiveness of immunization for these two diseases disturbed the establishment of a system of routine immunization.

2) Establishment of an Immunization Program after WWII (1945~1969)

The Japanese economy and society were exhausted by the World War II, and post-war epidemics of infectious diseases such as typhoid fever were major problems. The government, under orders from GHQ, expanded its immunization program. New scientific evidence of the efficacy of vaccines for diseases such as typhoid fever and epidemic louse-borne typhus gave further impetus to the evidence-based immunization program. The “Immunization Law” prescribing that local governments administered routine immunization for six diseases (smallpox, diphtheria, typhoid fever, paratyphoid fever, pertussis and tuberculosis) was enacted in 1948. The role of immunization at this time was thought to be “protection of society” through limiting the spread of diseases.

3) Transition from Compulsory to Recommended Immunization (1970~present)

Although smallpox had almost disappeared in Japan by the 1970s, continuation of the vaccination with the risk of adverse reactions became a nationwide controversy. This led to a wider discussion of the possibility, although rare, of adverse reactions by immunizations resulting in disability, or even death. The 1977 revisions to the Immunization Law made the national government responsible for compensation for health damage caused by adverse events following immunizations.

The decade of 1990s saw improvements in living and hygiene standards, advances in medical science, and also changes in the way of thinking of

the people. In response to these changes in society, further revisions to the Immunization Law in 1994 made immunization become no longer compulsory, but rather recommended by the national government. The system of compensation for damage caused by adverse reactions was also strengthened. The way of thinking regarding infectious disease control shifted from protection of society to individual protection; consequently having its accumulated effect as the protection of society.

The rate of influenza vaccination fell sharply after the 1994 revisions of Immunization Law. It resulted in increased numbers of deaths from influenza among the elderly. Public subsidy for influenza immunizations for the elderly was therefore introduced in 2001.

4-1-2 Kinds and Delivery System of Immunizations at Present

Immunizations presently offered in Japan can be divided into three categories, those stipulated in the “Immunization Law” revised in 1994 and “Tuberculosis Control Law,” and “Voluntary Immunizations.” Following the 2001 revisions to the “Immunization Law,” immunizations were further classified as routine and temporary schedules, and the routine immunizations subdivided into Category I and II diseases. Immunizations for the seven Category I diseases aim to prevent the spread of infections within the community, whereas immunizations for Category II diseases aim to prevent disease in individuals, indirectly reducing the spread of infections within the community. When the “Law Concerning the Prevention of Infectious Diseases and Patients with Infectious Diseases” (Infectious Diseases Law) was enacted in 1998 (enforced in 1999), only tuberculosis was not integrated with other infectious diseases. The BCG continues to be administered in accordance with the Tuberculosis Control Law, and is recommended for children³⁵.

These laws stipulate the age at which

³⁵ Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku 2003* [Simple Hygiene and Public Health 2003] Nanko Do.

vaccinations are to be given, the timing and method of administration, and the responsibility for adverse reactions. Vaccinations other than the regular and temporary schedules are all considered to be voluntary immunizations.

Before vaccinations are administered, the health status of recipients is confirmed by medical history and examination. The law set provisions independently for those who should not receive routine scheduled immunizations as contraindications and those who require special precautions upon administrations. Polio and BCG immunizations are administered in group sessions, but the other immunizations are administered individually usually by family doctors.

Immunizations are administered under the responsibility of municipalities that identify children (immunization recipients) who require vaccinations from their residents rolls, and notify recipients which vaccinations are to be undertaken and where. On receipt of the notification, recipients attend the designated institution (including private medical institutions), and receive immunizations individually. Immunization institutions report the result to the municipality, which uses the information to derive immunization rates.

Each municipality also determines when group polio and BCG immunizations should be held, and informs the recipients of the date. These group immunizations are often held at public health centers. Immunizations are administered not only in public health centers and public medical institutions but also in designated private medical institutions. The immunization cost in private institutions as well as public institutions is free of charge to qualified recipients defined by the regulation. Parents are encouraged to bring their Maternal and Child Health Handbooks when their children receive vaccinations for administering institutions to record the details (date, type of vaccine and Lot Number). The Handbook is also used as a resource to schedule subsequent

vaccinations, and know details in the case of adverse reactions.

4-1-3 Infectious Disease Surveillance Program

An infectious disease surveillance program was commenced for 18 diseases including tuberculosis in 1981. It aimed to monitor the spread of infectious diseases, provide information to healthcare providers, and assist in the provision of appropriate preventive measures such as vaccinations. Under this program, infectious diseases that have been diagnosed at specified medical institutions (includes private institutions, and not only public institutions such as national hospitals) are notified to the relevant public health center, and these notifications are collated by the Ministry of Health, Labour and Welfare. Weekly infectious disease bulletins are published by the Infectious Diseases Surveillance Center of the National Institute of Infectious Diseases, and information is available on demand over the internet. This system collects observations from fixed sites (sentinel surveillance), so it does not have all cases, but it does enable assessments of trends (time and place) in the spread of infectious diseases³⁶.

4-1-4 National Movement to Obtain Supplies of Poliomyelitis Vaccine

A worldwide epidemic of poliomyelitis in 1952 mobilized many countries to promote research and development of a preventive vaccine. In Japan, however, despite increasing numbers of poliomyelitis patients after 1955, the government did not put vigorous effort into a response to this disease. An outbreak of poliomyelitis in Hachinohe City, Aomori Prefecture, occurred in July 1959, but the government failed to import a sufficient number of vaccines from the U.S. In response to strong demand from mothers, the "New Japanese Medical Association" requested emergency vaccine supply from the Soviet Union, resulting in a delivery of 600 liters of vaccines. At first, the government refused

³⁶ Nakatani, Sano, and Iuchi (2002)

to allow this vaccine to be used, citing a lack of facilities. The ensuing public outcry led to the eventual release of the imported vaccine. Some 27,000 doses of vaccine were administered, covering 90% of those eligible in a mass campaign, and no outbreaks of polio have occurred in Japan since 1960, the following year.

Outbreaks of polio did occur in more than ten prefectures in 1960 and at the Sixth Mother's Association Congress that year a resolution was passed to promote a poliomyelitis eradication campaign, through the large-scale importation of vaccines and the free vaccination program. This movement prevailed nationwide, and a "Central Committee to Protect Children from Infantile Paralysis" (or Polio Committee) was established. Following a nationwide epidemic in 1961, demands from the Polio Committee for large-scale administration of live vaccines drove a powerful national lobbyism to the national and local governments. In June 1961, the national government decided to import 13 million doses of live poliomyelitis vaccines from the Soviet Union and Canada, and commenced an emergency immunization program. As a result, the number of notified cases of polio fell from 5,606 in 1960 to 2,436 in 1961, then to 389 in 1962 and 140 in 1963, spelling the end to polio outbreaks.

This popular movement demanding live vaccines is a landmark in the history of public health in Japan, changing the way of thinking in the administration of disease prevention, and showing how an organized popular movement based on the demands of mothers changed government policy³⁷.

4-2 Immunizations in Developing Countries in the Light of Japanese Experience

Immunization activities are under way in developing countries, with widespread acceptance

of the Expanded Program on Immunization (EPI) promoted by international organizations including the WHO and UNICEF, and the establishment of the Global Alliance for Vaccines and Immunization (GAVI). However, it cannot be said that all developing countries can implement EPI programs fully as is recommended, and immunization coverage needs to improve more. This will require a strong commitment to immunization programs of national governments, clarification of roles of the administration organs, and reinforcement of the system of immunization delivery. We will discuss below the aspects of Japan's experience on these points.

4-2-1 Commitment and Roles of Governments in Conducting Immunization Programs

Immunization programs in Japan were initially mandatory in the name of the protection of society. Over the years, advances in medicine for infectious diseases, different patterns of disease outbreaks, and changes in the attitude of society have led to greater respect for individual choices as opposed to obligation. The roles of the national and local governments have also changed accordingly.

In Japan, the Immunization Law stipulates that the costs of all vaccinations specified in the public schedule at the specified time are borne by local governments. Compensation for any serious adverse reactions caused by vaccinations is also stipulated by Cabinet Ordinance, with all related costs paid from the public fund. It is the role of the national government to disseminate information on immunization, so that the people can undergo immunization on the basis of accurate knowledge. This requires active effort from the national and local governments to ensure that the people have access to the right immunization at the right time. The government has duties not only to simply bear the necessary costs of the implementation of

³⁷ Hashimoto, Masami (1968) *Chiiki Hoken Katsudo - Koshueisei to Gyosei-gaku no Tachiba kara* [Community Health Activities - From the Standpoint of Public Health and Public Administration], Igaku Shoin and Oguri, Shiro, Kinoshita, Yasuko, Uchibori, Chieko ed. (1984) *Hokenfu no Ayumi to Kosshu Eisei no Rekishi - Kosshu Eisei Jissen Siriizu 2* [The History of Community Public Health Nurses and Public Health - Series of Practice for Public Health]

immunization program, but also to disseminate appropriate information to the populace. This kind of system enabled the promotion of the immunization program from the time when infectious diseases were endemic and resulted in the reduction of the disease burden. The change from compulsory to voluntary immunization, however, has led to a drop in the immunization rates. Although this has not caused an increase in the incidence of disease, clearly there are some other issues to be discussed on the implementation of the immunization program in Japan.

In developing countries, it is probably an effective approach for the government to show strong leadership and compulsion to a degree until the immunization program is accepted at a certain level. At the same time, it would be helpful to provide immunization free of charge, educate the people concerning immunization, and compensate adverse reactions. As was the case in Japan, it is assumed that the time when individual choice is given priority will come sooner or later. In that case, it will be necessary to consider the response to avoid an increase in the incidence of infectious diseases after the reduction of the immunization coverage.

4-2-2 Implementation of Immunization Activities Using Existing Health System

EPI activities in developing countries generally take the form of mass immunizations through outreach activities. Considering cost and sustainability, it is preferable to utilize existing public health service providers including hospitals and public health centers. This will allow better identification of target groups and vaccine needs, calculation of vaccine coverage, and planning of supplementary immunization activities as necessary.

Immunizations are given in Japan mostly at

two different kinds of locations. They are public health centers, where group vaccinations are given, and the usual healthcare providers (including private medical institutions) for individual vaccinations. In Japan, both public health centers and medical institutions were established soon after the WWII, and immunization programs therefore utilized the existing service providers. Notifications of both infectious diseases and adverse events following immunization follow the same route from medical institutions → public health centers → prefectures → the national government, and are collected in central level. Private medical institutions, as well as public institutions, are involved in the TB and infectious disease surveillance system, and notification system for patients with designated infectious diseases to their local public health centers. In this way, both public and private medical institutions participate in national infectious disease control programs.

Based on Japan's experience, Japanese technical cooperation has concentrated on strengthening EPI through reinforcement of existing public health services (e.g. technical cooperation projects for polio eradication in China and Lao PDR). In developing countries, building the capacity of human resources in the health sector is a serious challenge. However, it cannot be realized in a very short time at local healthcare facilities³⁸. Until the 1990s the international aid community made a great deal of effort in the EPI, a vertical program. Now there is recognition that immunization coverage and program effectiveness will not improve until the overall capacity of health personnel is developed, so the need for strengthening the system of delivery of public health services including training for health personnel is also recognized.

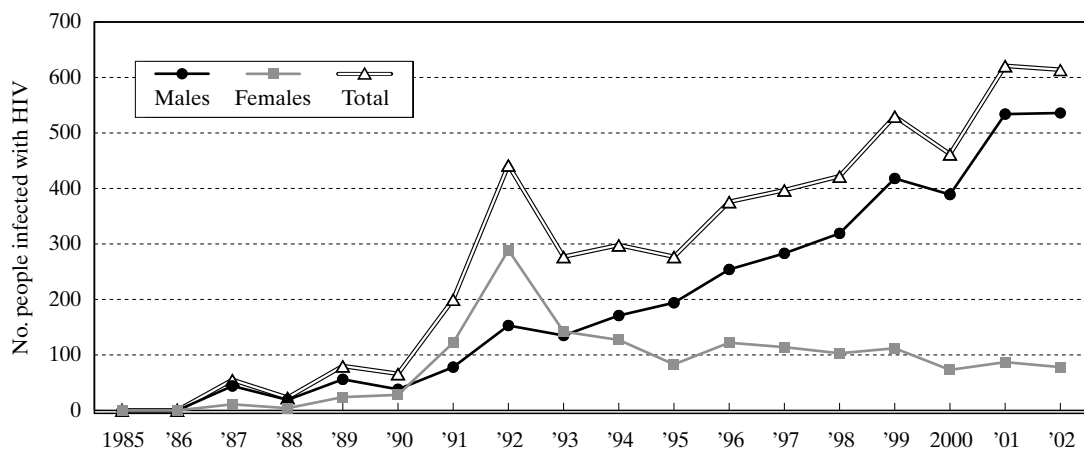
³⁸ Japan International Cooperation Agency Medical Cooperation Department (2001) Report on Evaluation of Pediatric Infectious Disease Prevention Project in Laos. Etc.

Appendix 1. HIV/AIDS Control Measures in Japan

In Japan, AIDS (acquired immunodeficiency syndrome) cases were first reported in men who had sex with men and recipients of contaminated blood products (coagulation factor preparations) in 1985, followed by the first female cases in 1987. The number of people newly infected with HIV (human immunodeficiency virus) in 2000 was 789 (including foreign residents in Japan), an eightfold increase over the 97 new cases in 1990. As of

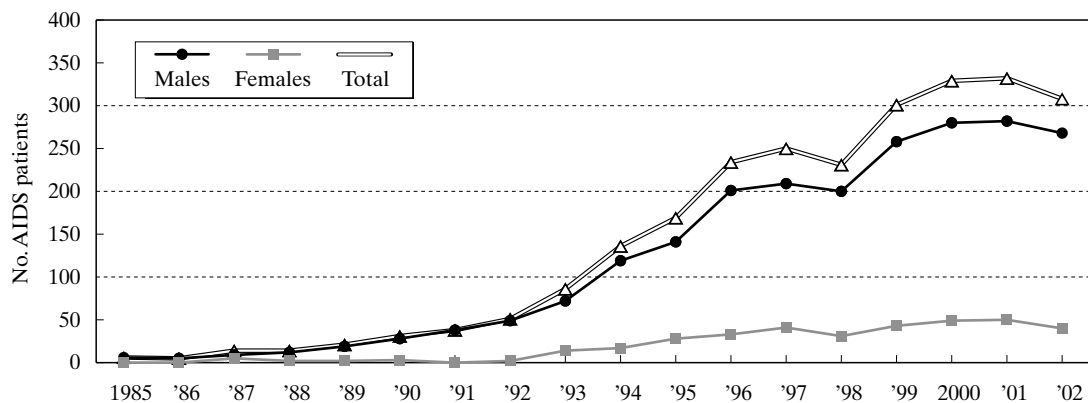
March 2002, there were 4,649 people infected with HIV, and 2,311 AIDS patients in Japan. Sexual transmission accounted for approximately 80% of cases. Although measures to control HIV/AIDS have been introduced, Japan is the only developed country where the number of new HIV cases continues to rise, so the results are not considered satisfactory.

Figure 5-3 Trends in Prevalence of HIV Infection



N.B. Total of Japanese and foreigner residents in Japan
Source: Ministry of Health, Labour and Welfare AIDS Surveillance Committee (2002)

Figure 5-4 Trends in Number of People Living with HIV/AIDS



N.B. Total of Japanese and foreigner residents in Japan
Source: Ministry of Health, Labour and Welfare AIDS Surveillance Committee (2002)

- **Response to HIV Infections Caused by Contaminated Blood Products**

In the early 1980s, non-heat treated blood products were imported from the U.S. for the treatment of hemophilia. Some 2,000 patients, or 40% of all hemophiliacs in Japan, were infected with HIV by contaminated coagulation factor preparations. Those affected and their families filed a suit against the Ministry of Health and Welfare and five pharmaceutical manufacturers in Osaka in 1988 and in Tokyo in 1989. It reached a peaceful settlement in 1996.

Following the settlement of the lawsuit, the Ministry of Health, Labour and Welfare has implemented the following measures to deal with people with HIV/AIDS.

- 1) Improvement of the healthcare system: as well as AIDS Clinical Center (ACC), which is a specialized HIV/AIDS research and treatment center, hospitals in eight regional centers were designated to cover the entire country, ensuring all those infected with HIV to receive appropriate treatment. Early approval system of anti-AIDS drugs was set up.
- 2) Assistance to individual patients: persons infected with HIV became eligible for social welfare assistance. The government covers all medical expenses for secondary and tertiary infections from a patient infected via contaminated blood products.
- 3) Condolence measures: counseling will be offered for the families of the deceased.

In addition to the above measures, the Ministry of Health, Labour and Welfare has taken additional steps to ensure the efficacy and safety of pharmaceuticals and medical equipment. This was partly in response to the lawsuit brought by people infected with Creutzfeldt-Jakob Disease (CJD), a serious and untreatable brain Disease, through dura mater grafts. Aiming for smooth implementation of

Good Clinical Practice (GCP), the Ministry is in the process of reinforcing the system of approval of therapeutic goods for increase of efficiency.

- **Awareness and Information Campaigns**

The number of people infected with HIV increased through the late 1980s and early 1990s. AIDS awareness campaigns in the early 1990s using television commercials and posters led to an increase in the number of people undergoing testing for HIV. A temporary increase in the number of cases was seen in 1992, due to the test results of previously untested people, but the number of new cases stabilized afterward, and there have been no further sudden increases. The change in mindset regarding sex resulted in the start of sexual activities at earlier ages. On the other hand, the knowledge about sexually transmitted infections (STIs) did not spread. It caused an increase in the incidence of STIs particularly Chlamydia mainly in young people from the late 1990s. Additionally there was an increase in the number of reported cases of new HIV infections.

There is an example of the attempt at a grassroots level to address STIs problem in young people. Dr. Akaeda, who runs an obstetrics and gynecology clinic in Roppongi, a popular youth spot, became aware that young women were reluctant to see a gynecologist even when they have a sexual problem, citing obstacles such as, "I'm scared of gynecologists"; "I can't ask for the health insurance card from my parents"; "It's not serious enough to see a doctor"; and "Seeing a doctor is too expensive." To counter these objections, Dr. Akaeda started HIV tests for free at live music clubs, where young people gathered. He also set up a free clinic once a week from 9 pm until late at night in a hamburger shop, where young people could bring along their sex-related concerns without hesitation. Delicate and sensitive response to needs like this example are required in STIs control because it relates to the issue of privacy³⁹.

³⁹ Reference: Akaeda Roppongi Clinic homepage (<http://www.akaeda.com/soudan/index.html>) (Mainichi Newspaper Tokyo Morning Edition 24 May 2002)

Appendix 2. Response to Hansen's Disease (Leprosy)⁴⁰

References to leprosy are found in the “Nihon Shoki” (Chronicles of Japan) from the Nara Period, AD 710 to 784. At that time, it was considered a hereditary disease, a mistake due to its long incubation period ranging from several years to several decades. It was feared an incurable disease since there was no effective treatment. As leprosy causes severe deformities of the skin of the face and limbs, many patients were ostracized by society due to their appearance, and forced to live homeless.

At the first international leprosy conference held in 1897, it was confirmed that leprosy is a communicable disease, and segregation of those afflicted with leprosy was proposed as the best means of prevention. The first survey of all leprosy patients in Japan was conducted in 1900, and it revealed a total of 30,359 patients nationwide (a prevalence of 6.43 per 10,000 population). The first leprosy control measures were implemented in 1907 in accordance with the Statute No. 11 (later the “Leprosy Prevention Law”). Due to the lack of an effective treatment at that time, these measures mainly comprised the isolation and disinfection of patients who had previously been vagrants for socio-economic reasons.

The “Leprosy Prevention Law” was enacted in 1931. The new Law made provisions for leprosy patients to be confined to leprosaria and to be excluded from occupations where there was any danger of transmission of infection, and for the cost of their confinement to be borne by the national or local governments. The more the number of beds in the leprosaria was increased, the more leprosy patients were confined with a strong nationwide anti-leprosy movement to put all leprosy patients under lifetime isolation. The life in the leprosaria was so harsh that patients

were forced to work, forbidden to leave facilities, and vasectomy and abortion were imposed in cases of marriage between patients.

After an anti-leprosy drug was developed, early diagnosis and treatment, and social rehabilitation became standard procedure internationally after WWII. It was also expected in Japan that the patients receive better treatment as respect for fundamental human rights became popular. The Leprosy Prevention Law, however, was revised in 1953 with continuation of existing policy of isolation as a core component. The new Law provided for admission to leprosaria as a recommendation rather than a compulsion, and for the treatment and welfare of patients rather than for patients management. The underlying purpose remained prevention of the spread of infection through segregation of those infected, and leprosy was still regarded as an incurable chronic infectious disease.

It subsequently became clear that leprosy is not highly infectious, and is not transmitted through normal contact at all. This led to a worldwide recognition that isolation of leprosy patients was unnecessary, but the Japanese system of segregation in accordance with the “Leprosy Prevention Law” continued unchanged. Former patients, who used to be confined in leprosaria, continued to protest against faults of the “Leprosy Prevention Law,” yielding gradual improvements to living conditions in leprosaria, and the Law was finally repealed in 1996. Since then, leprosy patients are treated similarly to other patients.

Former patients brought a claim against the national government for compensation for the wrongs committed against them over many years. In 2001, the Kumamoto District Court found the

⁴⁰ Based on material from the Hansen's Disease Museum, and Aoki (2002)

Ministry of Health and Welfare to have been negligent in continuing the policy of segregation and attempting to change social awareness, and the national government at fault for failing to revise the law to improve the situation. In view of a need for a quick settlement due to old age of patients and former patients, the government decided not to appeal to a high court, and a full settlement was reached in 2002.

In this way, the afflicted have finally won the right to live in freedom, but many of them are old and facing difficulty in returning to society after the isolation from outside of leprosia for decades. Even after settlement has been reached on their lawsuit, some 4,000 ex-patients still reside in the leprosia. Accordingly the government introduced measures in 2002 to solve remaining problems with

leprosy quickly and completely by provisions of benefits to promote social rehabilitation for those who left leprosia and to restore the honor of the deceased.

As we have seen, the government's isolation policy caused unnecessary suffering to leprosy patients. In this instance, Japan's experience gives us a lesson that an inappropriate government policy can cause irreparable damage, and the government needs to take careful and prompt actions for improvement. This experience also reminds us of the importance of petitioning from the people to change the national policy, as we see is demonstrated in a change in the governmental response to leprosy brought about by former patients' tireless approaches for law reform.

Chapter 6

Environmental Pollution Control Measures

While modern societies face growing concern about global environmental issues, developing countries are experiencing complex, serious and fast-growing pollution problems of their own. The potent combination of industrialization, urban development and mass consumption trends is exacerbated by foreign companies operating with little regard for the impact on the local environment. Environmental pollution is more than just a health issue; it is a wider social issue in that pollution has the potential to destroy homes and communities. Pollution problems are also closely tied to the mode of development in developing countries. Despite this, many developing countries either have not developed environmental pollution control measures, or have not provided adequate implementation structures to ensure that policies are effective.

During the period of rapid economic growth after the Second World War, Japan experienced a variety of terrible environmental problems on a scale unprecedented in the world. These

environmental problems can be attributed to the prevailing emphasis at the time on economic growth and profits at the expense of public health. For this reason, the government was unwilling to pursue environmental strategies. Worsening environmental problems led to the emergence of numerous victims' groups and turned the tide of public opinion, so that governments at the prefectural and national level were forced to act. Eventually, after much trial and error, effective strategies for dealing with environmental pollution were put in place and as a result the quality of the environment began to improve.

By describing Japan's experiences with respect to the problems caused by the initial reluctance to address environmental issues, as well as the success of subsequent environmental initiatives, it is hoped that we can help to prevent worsening health problems in developing countries and promote sound and healthy social development.

This chapter presents an overview of the

Table 6-1 Seven Categories of Pollution

Category	Major causes	Major symptoms	Examples
Atmospheric pollution	Smoke, dust, exhaust fumes, toxic substances (such as sulfur dioxide and nitrogen dioxide)	Asthma, bronchitis	Photochemical smog, "Yokkaichi Asthma"
Water pollution	Polluted waste water, waste fluids (such as petroleum), sludge, household sewage, sewage discharge, general waste, agricultural chemicals	Noxious odors, poisoning	Minamata Disease, "Itai-Itai" Disease (cadmium poisoning), PCB poisoning
Soil pollution	Arsenic, heavy metals (especially in agricultural chemicals)		Poisoning
Noise	Factories, construction work, road traffic, trains and aircraft, late-night commercial operations, advertising	Headaches, insomnia, depression, hearing loss, impaired development	Osaka Airport noise
Vibration	Factories, construction work, road traffic, trains and aircraft	Dizziness, discomfort, structural damage to homes	Shinkansen (bullet train) vibration
Ground subsidence	Upswelling of groundwater, gravel quarrying, coal mining	Structural damage to buildings	Koto Ward, Tokyo
Noxious odors	Exhaust fumes, river contamination, sanitation facilities, accumulated sewage, livestock farms, etc.	Headaches, discomfort	Sewage in the Sumida River

Source: Based on the Basic Law for Environmental Pollution Control.

Table 6-2 The History of Environmental Pollution Control Measures

The history of environmental pollution control measures (Iijima 1993)	Classifications used in Chapter 6
1. Prior to 1868 (before the Edo Era): First protest actions by victims of pollution	Beginnings of environmental pollution
2. 1869–1914 (Meiji Era to First World War): Emphasis on industrial development	
3. 1914–1945 (First World War through to end of Second World War): Emphasis on nation-building	
4. 1945–1954: Pollution becomes an issue in wider society	Social awareness of environmental pollution
5. 1955–1964: Extensive pollution damage during period of rapid industrial growth	Environmental pollution control measures commenced in earnest
6. 1965–1974: Pollution problems continue to worsen	
7. 1975–1984: Lack of commitment in environmental policy	Pollution control measures lose momentum, increased awareness of environmental problems
8. 1985–present: Mounting concern for global environmental issues	

Source: Based on Iijima, Nobuko (1993) report.

history of pollution problems and countermeasures in Japan. The specific case of Minamata Disease will be discussed in detail, looking at questions such as the difficulties encountered in the implementation of pollution initiatives and the wider social roles of those responsible for, or otherwise related to, the initial problem. This will be followed by an analysis of environmental policy and philosophy in Japan to identify those experiences and initiatives that have relevance for developing countries today.

1. Overview of Environmental Pollution Control Measures

1-1 What is Environmental Pollution?

The Basic Law for Environmental Pollution Control defines environmental pollution as any activity, by corporations or individuals, which compromises the health and/or environment of other persons in a localized area, where the causal link is clearly established. There are seven categories of environmental pollution. (see Table 6-2)

1-2 Change Over Time in Environmental Pollution Control Measures

Table 6-2 shows the history of pollution and pollution control measures in Japan, divided into eight distinct phases from before the Edo Era (1603~1868) up to the present day¹. For the purposes of this document, the eight phases have

been grouped into four main periods to clarify the past experiences of Japan that are of relevance to developing countries today. Below we present an overview of the social background in each period and the development of pollution control measures.

1-3 Trends in Environmental Pollution Control Measures

1-3-1 Beginning of Environmental Pollution (1600s~1945)

The first known instance of pollution damage in Japan involved emissions of wastewater containing heavy metals by mining operations back in the 1600's, before the Edo Era. Affected farmers and fishermen launched bitter protests against the environmental pollution and sought compensation for damages, and their efforts generated widespread public interest.

From the Meiji Era through to the beginning of the First World War (1868~1914), a strong emphasis on national prosperity, military power and industrial growth saw considerable resources devoted to development of the three core industries of mining, cloth spinning, and steel manufacturing. These policies led to environmental problems such as smoke, noise and water pollution. Environmental damage was not confined to the areas surrounding such operations; city dwellers were often affected too. Local governments were the first to take the initiative to address the situation, introducing a

¹ Iijima, Nobuko (1993) *Kankyo Shakaigaku* [Environmental Sociology] Yukikaku.

range of regulations and restrictions. At the national level, however, the government welcomed pollution as evidence of progress and prosperity, and consequently very few of the environmental pollution control measures contained in the Factories Act (1911) and the Mining Law (1905) were actually enforced.

From the commencement of the First World War until the end of the Second World War (1914~1945), priority was given at the national level to the development of industries to meet the demands of the military—in particular steel production and heavy industries. Increased production levels generated a range of problems including atmospheric pollution, water pollution, noxious odors, noise, and land subsidence of fields and other areas. These in turn prompted efforts to create pollution reduction initiatives such as the world's first ever pollution prevention system, developed by Sumitomo Metal Mining. Given the overriding emphasis on national prosperity, however, public health issues received scant attention and protests by victims of pollution were largely overlooked.

1-3-2 Social Awareness of Environmental Pollution (1946~1964)

The main priority in the aftermath of the Second World War was nation rebuilding; consequently, economic growth was the top priority from the late 1950s onwards. Considerable effort was put into the development of heavy industries and the construction of petrochemical plants. The steel, oil, aluminum and power industries generated huge quantities of a range of pollutants, which in the absence of effective pollution countermeasures led to a rash of health problems on a scale unprecedented in the world at that time, including Minamata Disease, “Itai-Itai” Disease and pollution-related asthma. In the year 1960, the city of Osaka recorded smog on 156 days, and the rivers resembled open sewers.

Post-war environmental pollution control measures were initiated in Japan at the local government level during the 1950s. The first formal measures were the Factory Pollution Control

Ordinance, enacted by the Tokyo Metropolitan Government in 1959. Unfortunately, these regulations were largely ineffective, due to the lax criteria and the level of opposition from industry. This experience prompted local governments to take a tougher stance on imposing emission standards, building treatment and processing facilities, monitoring pollution emissions, and providing administrative guidance where necessary. Taxation and other incentives were also introduced to encourage the adoption of environmental pollution control measures by industry.

In response to the increasingly strident protests of pollution victims, the national government also began preparing legislation to control environmental pollution, building on the work of local governments. The process was delayed, however, by difficulties in obtaining consensus among the relevant ministries and agencies, compounded by fierce opposition from industry groups. When it finally arrived, the legislation was largely ineffectual. In 1961, the first national environmental pollution control laws were enacted, in the form of the Two Water Quality Regulation Laws for the regulation of pollution sources. Here again, the legislation lacked teeth, and environmental damage continued to worsen. It should be remembered, though, that the pollution control measures were introduced in the context of the main priority at that time of promoting economic growth, and were therefore designed to avoid conflict with this overriding objective.

1-3-3 Environmental Pollution Control Measures Commenced in Earnest (1965~1974)

The combination of rapid industrial development (particularly in the petrochemical and heavy industries), strong economic growth, and unprecedented urban expansion led to a tremendous increase in pollutant emissions. A succession of new and different pollutants began to appear, and the problems worsened. For example, in 1971 sulfur dioxide emissions in the three major municipal areas in Japan were three times the national average, and nine times the 1955 level of 16 t. On some days it was not possible to go outside at all. Afflictions such as Minamata Disease and “Itai-

Itai” Disease began to appear in other areas of the country. Japan became known as the pollution capital of the world.

Public protests became increasingly vociferous and were taken up by the mass media, which had the effect of raising general public awareness and concern about pollution issues. Scientists and other academics began organizing environmental assessments and resident awareness meetings. Interestingly, residents’ groups focused on local governments rather than the national government, a strategy that proved most effective. Mounting public dissatisfaction at the unwillingness of the national government to take proper action on pollution issues impacted on approval ratings, and the government was eventually forced to give priority to public health and lifestyle issues.

The early 1970s saw a steady succession of legal actions against polluters, resulting in victories in the four major pollution trials (Minamata Disease in Niigata, Yokkaichi Asthma, “Itai-Itai” Disease and Minamata Disease in Kumamoto). The findings in favor of the victims prompted a revision of environmental standards and compensation plans, and caused a fundamental shift in thinking on pollution, from being considered acceptable for the overall public good to being considered generally unacceptable.

The combination of rising public opposition and the success of the pollution trials prompted a

flurry of activity on the part of the government, resulting in a range of measures such as the Basic Law for Environmental Pollution Control, a special pollution session of the national diet, and the Environment Agency. This period also saw a reversal of the approach adopted in environmental regulation. Instead of imposing emission limits on specific pollutants, regulations now sought to provide target environmental standards as the ultimate objectives to be achieved. Environmental standards for sulfur dioxide emissions were released in 1969, followed by vehicle exhaust and water pollution level limits in 1970, noise pollution limits in 1971 and carbon dioxide and photochemical oxidant emissions limits in 1973. As a result, atmospheric and water pollution levels were improved significantly in a relatively short period of time.

1-3-4 Pollution Control Measures Lose Momentum, Increased Awareness of Environmental Problems (1975 onwards)

The combined impact of the “oil shock” and an economic downturn in the latter half of the 1970s led to increased criticism of and opposition to pollution controls in business and economic circles, and the government was obliged to modify its stance. The level of public protests had also weakened somewhat. Domestic companies began looking to set up offshore operations, primarily in Asian countries with less stringent pollution controls.

Worsening Pollution Problems

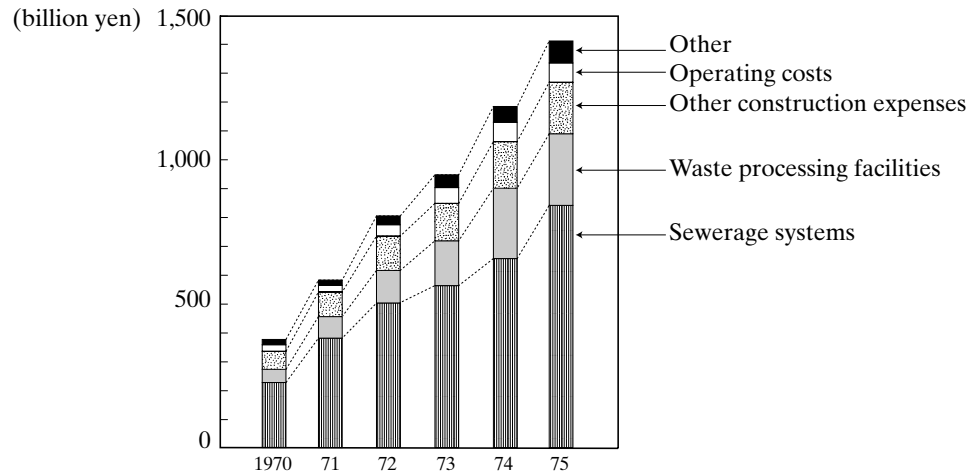


Photo 1: Smoke from chimney stacks fills the sky (December 1972; photo by Mainichi Shimbun Co. Ltd)



Photo 2: Children take lessons wearing face masks to block out the smell (Arakawa Ward, Tokyo, December 1967; photo by Mainichi Shimbun Co. Ltd)

Figure 6-1 Expenses Associated with Local Government Environmental Pollution Control Measures



Source: White Paper on the Environment 1977 (Prime Minister's Office)

Table 6-3 Summary of the Four Major Pollution Trials

	"Itai-Itai" Disease	Minamata Disease in Niigata	Yokkaichi Asthma	Minamata Disease in Kumamoto
Cause	Cadmium from mining operations released into the Jinzu River	Organic mercury waste from power production released into the Agano River	Smoke from industrial complexes	Marine life in Minamata Bay contaminated with organic mercury
Symptoms	Bone distortion and fractures	Minamata Disease	Asthma	Disruption to nervous system, speech impairment
No. plaintiffs	33	76	12	138
Year of trial	1968	1967	1967	1969
Year of judgment	1972	1971	1972	1973
Damages awarded	¥148.2 million	¥277.78 million	¥88.21 million	¥937.3 million
Damages sought	¥151.2 million	¥522.67 million	¥200.58 million	¥1,588.25 million

Source: Shibata, Tokue and Murata, Yuko (1976)

Legislation to impose an environmental impact assessment system to prevent environmental pollution at the outset was proposed in 1984 but then shelved; it would not be until 1997 that the Environmental Impact Assessment Law was finally enacted. Environmental standards for NO₂ emissions were relaxed, designation of Type 1 regions for pollution controls and compensation were lifted, and a number of other environmental controls were put on hold; and at the same time the criteria for recognition of pollution-related health damage were tightened. Under 1973 legislation on compensation for health problems caused by environmental pollution, new claims from victims

of atmospheric pollution were dismissed, and many victims of Minamata Disease went unrecognized.

From around 1985, mass consumption began to emerge as the root cause of many forms of environmental destruction. Road vehicles, synthetic detergents, chemical fertilizers and insecticides were all identified as pollution sources, which meant that ordinary citizens were no longer the victims, but were in fact the unwitting perpetrators of environmental destruction. At the same time, environmental pollution had become a much more complex problem, as exemplified by chemical substances such as polychlorinated biphenyl (PCB) and dioxins that are not conducive to treatment or processing.

In the 1990s, prompted by rising awareness around the world of the need to protect the global environment, the government returned to environmental policy with renewed vigor, enacting the Waste Management and Public Cleaning Law, the Recycling Law and legislation for the conservation of plant and animal species. In 1993, the

Basic Law for Environmental Pollution Control and the Nature Conservation Law were integrated into a single piece of legislation, the Basic Environment Law, detailing basic environmental programs, requirements for environmental impact assessments, and financial penalty systems.

Box 6-1 Promulgation of the Basic Law for Environmental Pollution Control

The Basic Law for Environmental Pollution Control was enacted in 1967 in recognition of the need for coordinated environmental pollution legislation and government policy based on a set of consistent principles. This legislation was prepared by a liaison committee for environmental pollution control measures, with vice-ministerial representatives from the relevant ministries, based on the report of an advisory body to the Ministry of Health and Welfare.

The Basic Law for Environmental Pollution Control was the first legislation in Japan to set out a comprehensive framework for environmental pollution control measures. This law supplies definitions of environmental pollution; delineates the responsibilities of business, government at the national and local levels, and residents; describes the basic features of strategies for preventing environmental pollution; and provides an overall structure for environmental pollution legislation and strategies. In its initial incarnation, the Basic Law for Environmental Pollution Control was designed to complement healthy economic growth and development, and not from the perspective of the residential environment. To this end, the law contained the so-called economic harmonization articles, and did not include any pollution controls with the potential to obstruct economic progress. As a result, environmental damage continued to escalate. The economic harmonization articles were subsequently removed in 1970 in the face of mounting criticism of the Law.

The main features of the Basic Law for Environmental Pollution Control are:

1. Numerical standards for environmental pollution
2. Regulation of emissions of polluting substances
3. Regulation of the manufacturing sector
4. Land use regulations
5. Monitoring and measurement regimes
6. Pollution prevention programs
7. Pollution prevention facilities and systems
8. Subsidy schemes for businesses to reduce pollution levels
9. Compensation for pollution victims
10. Dispute resolution mechanisms

The Basic Law for Environmental Pollution Control served as the basis for a number of other pieces of legislation. Starting with the 1969 Law Concerning Special Measures for the Relief of the Pollution-related Health Damage, the government sought to provide legislation for reconciliation and compensation of victims of pollution. The legislative framework represented an important breakthrough, because many civil compensation cases for pollution damages had foundered due to the difficulty of proving a causative relationship between negligence on the part of the perpetrator and the damages suffered by the victim. Such legislation enabled victims to claim medical expenses and

treatment and nursing care allowances from the public and private sector. Under the 1970 Law for the Settlement of Environmental Pollution Disputes, pollution committees were set up at the national level (reporting to the Prime Minister's Office) and in all prefectures to provide mediation, arbitration and reconciliation services.

Box 6-2 Pollution Session of the Diet

July 1970 saw the establishment of the Headquarters for Countermeasures for Environmental Pollution, chaired by the Prime Minister and featuring representatives of all ministries and agencies. The Headquarters was set up in response to public concern over pollution issues, which had reached a level that threatened to bring down the government. Pollution bills were hastily prepared by a ministerial-level conference on pollution control measures over the following month and presented to an extraordinary session of the diet in December convened specifically for the purpose of debating the bills (the so-called pollution session of the diet). All 14 pollution bills were passed successfully. The main features of the bills were as follows:

1. Amendments to the Basic Law for Environmental Pollution Control, including removal of the economic harmonization articles
2. Broader definitions of pollution
3. Nationwide expansion of the scope of the Air Pollution Control Law; recognition of additional regulations at the prefectural level
4. Formal acknowledgement of the national government's responsibilities for environmental conservation, accompanied by stronger regulation
5. Techniques for calculating the costs to businesses of preventing environmental pollution
6. Criminal prosecution for pollution crimes

Box 6-3 Establishment of Environment Agency

Although the late 1960s through to the 1970s saw a succession of new laws on environmental pollution control, most notably the Basic Law for Environmental Pollution Control, responsibility for enforcement of pollution regulations was scattered throughout different arms of the government, compromising the consistency of the government's policy approach. For example, atmospheric pollution came under the jurisdiction of both the Ministry of Health and Welfare and the Ministry of International Trade and Industry; water pollution was the responsibility of the Economic Planning Agency, the Ministry of Health and Welfare, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Construction and the Ministry of International Trade and Industry; and noise pollution was regulated by the Ministry of Health and Welfare, the Ministry of International Trade and Industry, the Ministry of Transport and the Ministry of Construction. The Environment Agency was set up in 1971 to assume responsibility for the implementation and enforcement of all pollution regulations and provide a coordinated focus for environmental policy. The Agency was promoted to the Environment Ministry under the reorganization of government departments in 2001 to provide a more unified approach to environmental policy.

Table 6-4 History of Environmental Pollution

Domestic and global developments	Pollution incidents and legal action in Japan
Beginnings of environmental pollution (up to 1945)	
Smoke emission regulations (UK, USA) Public Health Act (UK) Sino-Japanese and Russo-Japanese Wars First World War	Legal action over copper poisoning from mining operations 1883 Huge increase in smoke pollution in Osaka 1890 Environmental damage throughout Watarase River basin area from Ashio Copper Mine 1932 Osaka Smoke Regulations introduced
Social awareness of environmental pollution (1945~1964)	
End of Second World War 1960 Income-Doubling Program 1962 National Development Program 1963 Development of industrial complexes	1946 Mine pollution and soil devastation at coal mines such as Chikuho 1951 Water pollution from pulp factories becomes a nationwide issue 1956 Mass outbreak of Minamata Disease victims in Kumamoto 1961 First reports of "Itai-Itai" Disease Large-scale outbreak of Yokkaichi Asthma 1964 Worsening environmental problems at Mizushima Industrial Complex
Environmental pollution control measures commenced in earnest (1965~1974)	
	1965 Mass outbreak of Minamata Disease in the Agano River Basin in Niigata Prefecture 1967 Niigata Minamata Disease Trial begins Yokkaichi Pollution Damage Trial begins 1968 "Itai-Itai" Disease Trial begins Judgment released regarding pollution sources in Minamata Disease and Niigata Minamata Disease 1969 Kanemi Yusho Oil Poisoning Trial begins Kumamoto Minamata Disease Trial begins All-day smog warnings in Tokyo Osaka Airport Noise Trial begins
1970 Japan becomes world's biggest steel producer US submits special message on pollution Japan-US Pollution Conference OECD establishes Environment Policy Committee Japan's first nuclear reactor becomes operational 1972 Rebuilding the Japan Archipelago Program Vehicle ownership quadruples in ten years Polluter-pays Principle adopted UN Conference on the Human Environment 1973 First Oil Shock	1970 First citizens against pollution meeting in Tokyo Cadmium contamination of farmland in Toyama Prefecture Non-certified Minamata Disease victims demand review of complaints process Shizuoka Prefecture sludge pollution trial begins Kanemi Yusho Oil Poisoning victims launch class action 1971 SMON Trial begins Victory for plaintiffs in "Itai-Itai" Trial Victory for plaintiffs in Niigata Minamata Trial 1972 National Federation of Lawyers Groups Against Environmental Pollution formed Victory for plaintiffs in Yokkaichi Trial 1973 Morinaga Milk Powder Arsenic Poisoning Trial begins

Government response
<p>1953 Liaison Conference for the Prevention of Water Contamination</p> <p>1955 Guidelines to the Law on Standards for the Prevention of Pollution in the Living Environment</p> <p>1958 Legislation to maintain the quality of public water resources</p> <p>1959 Factory pollution regulations introduced in Tokyo</p> <p>1961 Legislation to regulate smoke emissions</p> <p>1963 Ministry of Health and Welfare and Ministry of International Trade and Industry set up study group to investigate atmospheric pollution in Yokkaichi</p> <p>1964 Pollution Department established by Ministry of International Trade and Industry Environmental Pollution Control Measures Committee established by Prime Minister's Office</p>
<p>1965 Special Committees on Industrial Pollution Control Measures established in Upper and Lower Houses Environmental Pollution Control Service Corporation Law enacted</p> <p>1967 Basic Law for Environmental Pollution enacted</p> <p>1968 National Liaison Council for Environmental Pollution Control Measures</p> <p>1969 Law concerning Special Measures for the Relief of the Pollution-related Health Damage First White Paper on Pollution released Environmental standards for sulfur dioxide</p>
<p>1970 Law for the Settlement of Environmental Pollution Disputes; Environmental Pollution Control Measures Headquarters; Ministerial-level conference on environmental pollution control measures 14 pollution bills passed by the pollution session of the Diet Environmental standards on carbon monoxide in vehicle exhaust gases Environmental standards on water contamination for conservation of residential environments Environmental standard on noise from sources such as factories and road vehicles Environmental standards on suspended particulate matter (SPM) Environmental standards on carbon dioxide and photochemical oxidants Environmental standards on aircraft noise</p> <p>1971 Environmental standards on Shinkansen (bullet train) noise Central Conference for Environmental Pollution Control Measures inaugurated Environment Agency founded; White Paper on the Environment becomes Environment White Paper</p> <p>1972 Nature Conservation Law enacted</p> <p>1973 Law Concerning Pollution-Related Health Damage Compensation and other Measures enacted</p>

Domestic and global developments	Pollution incidents and legal action in Japan
Pollution control measures lose momentum, increased awareness of environmental problems (1975 onwards)	
<p>1977 Yen appreciation</p> <p>1978 Structural recession Bankruptcies reach record post-war levels</p> <p>1979 Second Oil Shock 1984 World Commission on Environment and Development</p> <p>1987 Bubble economy period; recession caused by yen appreciation</p> <p>1992 Earth Summit</p>	<p>1977 Osaka Airport pollution trial begins Nagoya Shinkansen pollution trial begins</p> <p>1978 Widespread concern over chromium pollution</p> <p>1979 Court case to stop major development at Lake Biwa</p> <p>1982 Second Niigata Minamata Disease Trial begins</p> <p>1983 Increase in groundwater pollution by toxic chemicals</p> <p>1988 Verdict in Minamata Criminal Trial: company guilty of involuntary manslaughter</p> <p>1992 Niigata Minamata victims lose case</p>

Government response
1977 Substantial scaling back of environmental standards on nitrous oxide
1980 Environmental assessment legislation shelved
1986 Expert committee on dioxins set up
1986 Designation of Type 1 regions for pollution controls and compensation lifted
1990 Water Pollution Control Act amended
1991 Recycling Law
1992 Implementation guidelines for general control measures for Minamata Disease
1993 Basic Environment Law
1997 Environmental Impact Assessment Law

2. Main Responses to Environmental Pollution

2-1 History of the Response to Minamata Disease (Mercury Poisoning) and Discussion

Given the scale of the tragedy and its terrible consequences, Minamata Disease is often considered the first major incident of environmental pollution in the course of Japanese history. The history of the response to Minamata Disease is also that of the struggle by victims for recognition of the problem². The experience of Minamata Disease and its tragic consequences teaches us much about the inadequacy of the initial response and the roles and responsibilities of those involved in preventing pollution—private industry, government and the medical profession.

2-1-1 Overview of Minamata Disease

Minamata Disease was caused by methyl mercury poisoning that gradually accumulated

toxic levels of organic mercury as a result of eating fish and shellfish that grew in an environment contaminated by industrial waste water. Typical symptoms includes disorders of the central nervous system and sensory disturbances in the extremities. Minamata Disease was first identified along the coast of Minamata Bay in Kumamoto Prefecture. By around 1955, people in the region already understood that the poisoning came from eating fish. The source was traced to the Minamata Factory of the Shin Nihon Chisso Hiryo Company (now Chisso Corporation). Victims were paid a paltry level of compensation, and the company continued releasing pollutants into the bay while pressuring the government and scientists into delaying studies to evaluate the causal relation³.

As a result, official government recognition of the disease did not come until 12 years after the first victims were identified, and five years after the final report of the government's own study group, during which time the problem continued to grow.

Table 6-5 History of Minamata Disease

1956	<ul style="list-style-type: none"> Minamata Disease formally identified - notification to public health center of Shin Nihon Chisso Hiryo Company (now Chisso Corporation) Kumamoto University Medical School sets up research team 	1965	• Outbreak of Minamata Disease in Niigata
		1968	• Minamata Disease linked to pollution; discharge of wastewater halted
		1969	• Victims group launches compensation action against Chisso
1957	• Kumamoto Prefectural Government application for fishing ban under the Food Sanitation Act rejected by Ministry of Health and Welfare	1971	• Environment Agency takes the position, "If Minamata Disease cannot be ruled out, it is Minamata Disease"
1958	• Chisso Corporate changes location of waste outlet; contamination continues and health problems worsen	1973	• Verdict in favor of Minamata victims
		1974	• Administrative litigation over delays in victim certification by Kumamoto Prefecture
1959	<ul style="list-style-type: none"> Kumamoto University Medical School releases findings: organic mercury identified as cause Food Sanitation Investigation Council notifies the Ministry of Health and Welfare of organic mercury finding and is disbanded on the day 	1976	• Victory for victims in administrative litigation
		1980	• Non-certified victims launch legal action for compensation against Chisso, the national government and Kumamoto Prefecture
		1987	• Kumamoto District Court orders the national government, Kumamoto Prefecture and Chisso to pay compensation
1963	• Kumamoto University Medical School identifies link between Minamata Disease and factory wastewater	1995	• National government presents victims with final proposal; accepted by most victims' groups

² NHK Archives (2001) *TV no Seishun, Documentary "Waga Uchinaru 'Minamata' - Kokuhakuteki Ishiron* [Minamata Disease - Confessing Doctors' Perspective] Airdate: March 4, 2001.

³ Ui, Jun (2001) "*Nihon no Kogai Taiken* [Japan's Experience of Environmental Pollution] Yoshida, Fumikazu and Miyamoto, Kenichi, *Iwanami Koza Kankyo Keizaigaku 2 kan, Kankyo to Kaihatsu* [Iwanami Lecture Environmental Economics Vol. 2, Environment and Development].

Furthermore, compensation for Minamata victims who had not been certified, and acceptance of the settlement, did not occur until 1995, some 40 years after the formal announcement of Minamata Disease.

2-1-2 Response to Minamata Disease by those Concerned and Lessons to be Gained

(1) Response by Corporations

Chisso Corporation, the polluter, fearing the negative ramifications of the worsening pollution crisis on its corporate activities and profits, refused to recognize any causal link between the pollutants and the disease. Chisso also withheld information and refused to cooperate



Protest action by victims of Minamata Disease: Sit-in
Minamata Disease protesters are forcibly removed by police
(March 1978, Mainichi Shimbun Co. Ltd)

Box 6-4 The Public Health Center's Response

On April 21 and 29, 1956, two sisters with serious disorders of the nervous system presented to the hospital attached to the Shin Nihon Chisso Hiryo Factory at Minamata. On May 1, the hospital director, Dr. Hajime Hosokawa, described the disease as “unprecedented” in a report to the Minamata Public Health Center. Following the notification, Dr. Hosokawa and his colleagues joined together with staff from the public health center to conduct a study of the afflicted sisters and other families in the immediate area. They found many others with similar symptoms, as well as evidence of related deaths. On May 4, the doctors submitted a written report to the Director of the Kumamoto Prefectural Health Bureau requesting permission to conduct a study of possible poisoning of well water. The ensuing preliminary study by Dr. Hosokawa's group and the public health center staff generated highly significant findings. The public health center subsequently determined that contaminants had been ingested via consumption of fish and shellfish caught in Minamata Bay, and requested a suspension of fishing activities. This was refused by the Ministry of Health and Welfare on the basis that not all fish and shellfish could be shown to be contaminated. The Chisso Minamata Factory was named as the suspected source of contaminants, but the Food Sanitation Investigation Council, an advisory body to the Ministry of Health and Welfare, refused to grant approval for on-site inspections. The public health center and the prefectural government were therefore unable to identify and eliminate the cause, much less institute preventative measures. The most important reason for this situation was the lack of response from the overseeing body, the Ministry of Health and Welfare. Today in Japan, under the Community Health Law local governments are able to monitor the planning and regulation of private sector operations.

Source: Doi, Rikuo (2003) “*Hoken-jo ha do Ugoitaka* [How the Public Health Center Responded,” Public Health, Vol. 67 No. 3 summarized in part

Box 6-5 Background to the Delayed Response

In 1959, acting on a report from the Kumamoto University Medical School research group, the Minamata Food Poisoning Committee of the Food Sanitation Investigation Council (an advisory body to the Ministry of Health and Welfare) presented the Minister for Health and Welfare with a report identifying organic mercury as the cause of Minamata Disease. The national and prefectural governments, keen to maintain the momentum of strong economic growth and avoid any adverse impact to the chemical industry, did nothing to stop the Minamata Factory wastewater discharge. The report was shelved the day after it was received following a submission by the Minister for International Trade and Industry to the Cabinet. The Minister argued that the disease was not linked to mercury, instead distributing copies of academic papers claiming toxic amine as the culprit. The Director of the Environmental Sanitation Unit at the Ministry of Health and Welfare visited the Minamata Factory to announce the government's stance refuting the organic mercury findings; he proposed that research predicated on factory wastewater as the likely cause should be abandoned and replaced by a fresh study, this time with the full cooperation of the factory. Chisso refused to release details of its production processes and wastewater output, and concealed the results of experiments proving that organic mercury was the cause of the disease. Scientists closely linked to the Japan Chemical Industry Association (JCIA) colluded with the government to propound a range of other theories and stymie genuine research, while the Japanese Association of Medical Science (JAMS) publicly disputed the findings of the Kumamoto University researchers. The government set up its own investigation council, supposedly to determine the cause of Minamata Disease, but no findings were ever delivered, and the council was subsequently disbanded without achieving its stated aim.

Source: Kurihara, Akira ed. (2000) *Shogen Minamata-byo* [Testimony: Minamata Disease] Iwanami Shoten summarized in part

with the Kumamoto University Medical School research team that was trying to determine the cause of the “strange disease,” and refuted the findings of the research team upon release. In this way, time dragged on without any relief for the victims of mercury poisoning.

Even after Minamata Disease had been conclusively linked to its factory wastewater, Chisso did not attempt to install wastewater treatment or purification equipment. Instead, the company diverted the wastewater outlet to a new location. On the compensation front, the company used delaying tactics while trying to force victims and fishermen, who were in a significantly weaker position, to accept a paltry settlement.

(2) Response by Local Government

Once Minamata Disease had been identified,

the local government recognized the need for countermeasures, but was unable to take effective action for a number of reasons. Firstly, at that time local authorities did not have the power to resolve local issues; environmental pollution control measures required the approval of the national government. Secondly, the local government was keen to maintain cordial relations with the company, a major contributor to the local economy through tax revenue and employment opportunities, and was therefore unwilling to take any action that might be considered a burden on the company. Thirdly, the likelihood of strong opposition from fishing interests deprived of their income source if a fishing ban was imposed was also a factor in the inability to take effective countermeasures.

(3) Response by the National Government

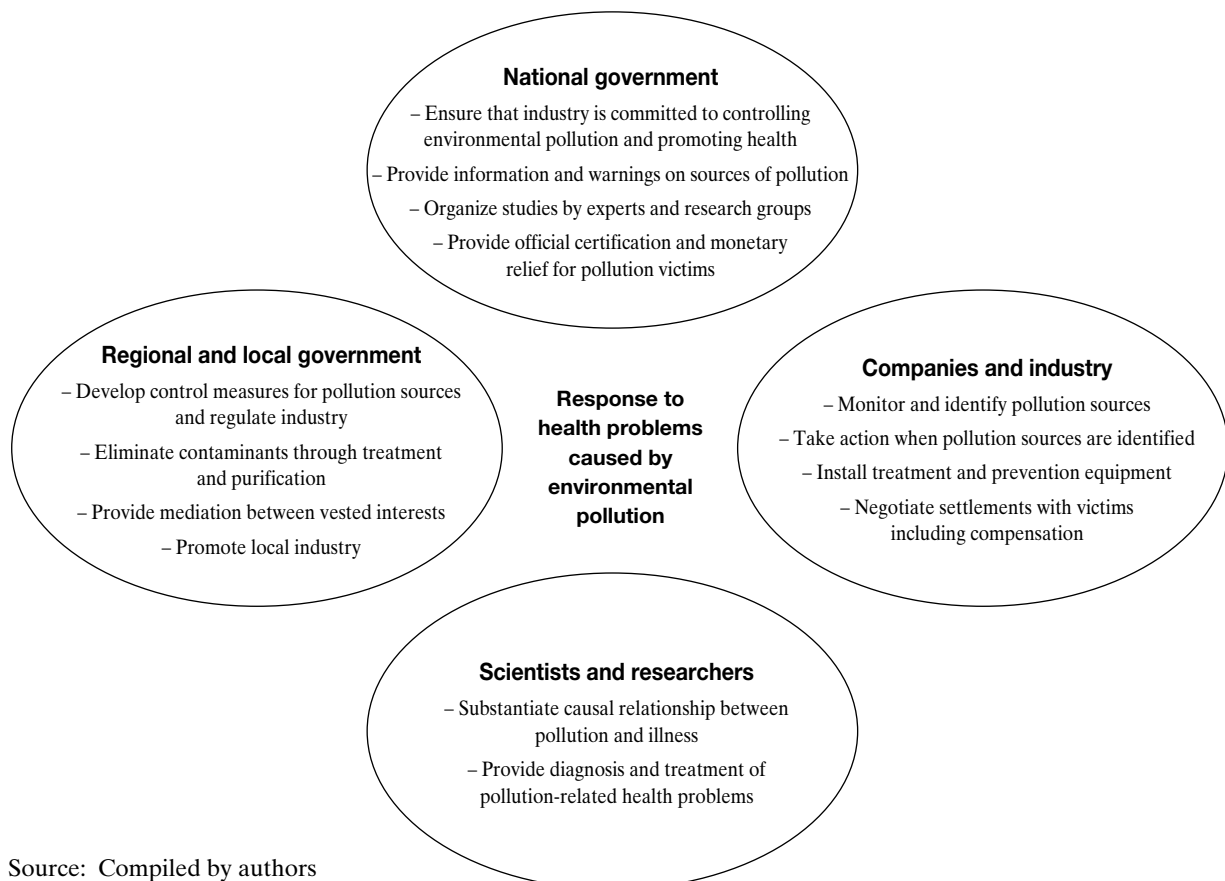
Boosting fertilizer production and promoting the chemical industry in general, was a high priority for the national government and particularly the Ministry of International Trade and Industry. Identifying mercury as the pollutant would strike a blow to the chemical industry, something that the Ministry was keen to avoid. The government did not follow up on the findings of the Kumamoto University research team, but instead sought to delay the response by launching its own study. The government should have moved immediately to provide information and advice and impose regulations, given that there were many other factories around the country producing similar waste discharges; however it did not, and consequently Minamata Disease began to appear in other regions of Japan.

(4) Response by Doctors and Scientists

In science and medicine, one cannot make a definitive conclusion without sufficient corroborating evidence. Due to the lack of evidence, doctors and scientists were unable to properly substantiate a causal relationship between the contaminants (and their sources) and Minamata Disease, much less to develop countermeasures and counter the growing health problem. Scientists are expected to be neutral, impartial and scientific; however some of those involved in investigating Minamata Disease underrated the role of environmental pollution and openly disputed the causal relationship.

Figure 6-2 summarizes the proper roles of industry, local and national governments, and scientists and researchers, as exemplified by the experience of Minamata Disease.

Figure 6-2 Roles and Responsibilities for Relevant Parties from Consideration of Minamata Disease Countermeasures



Source: Compiled by authors

2-2 Environmental Pollution Control Measures

Following the tragic mistakes of Minamata Disease, in which a delayed response enabled the disease to continue to develop, a concerted effort has been made to address pollution problems through a raft of environmental pollution control measures. Here we will describe some of the successful pollution control initiatives undertaken in Japan.

2-2-1 Environmental Pollution Legislation and Upgrading Administrative Organization

The Basic Law for Environmental Pollution Control was enacted to provide a proper basis for environmental pollution policy and for the development of other regulations and initiatives. Similarly, the Environment Agency was established to promote unified and coordinate policy initiatives, along with environmental pollution bureaus at the local government level.

Environmental pollution has many different causes and affects us in a number of different ways. For this reason, it is important to have a comprehensive legal framework in place to enable the development of effective policy initiatives, backed by a single organization with jurisdiction over environmental pollution control measures and the attendant governmental structures.

2-2-2 Environmental Standards and Waste and Emission Standards

In Japan, improvements in the state of the environment were brought about by direct regulation based on standards for pollution and the environment. Regulations in many areas - emission restrictions, emission levels and emission volumes - were used to ensure adherence to environmental standards, making it possible to reduce emission volumes at minimal cost.

2-2-3 Environmental Pollution Control Measures and Regional and Local Authorities

The strong stance of regional and local governments provided the impetus for the development of environmental pollution control

measures in Japan. Since environmental pollution is generally a localized phenomenon, pollution strategies at the local level are most important. In practice, however, controlling pollution proved difficult, because regional and local governments did not have the power to enforce pollution controls and because harsh penalties for exceeding the national government's lax regulation criteria was considered unlawful.

The Basic Law for Environmental Pollution Control allowed local government to take the initiative in pursuing pollution controls. The combination of environmental pollution bylaws and pollution reduction agreements with industry proved spectacularly successful.

By 1972, every prefectural government in Japan was regulating environmental pollution in accordance with environmental pollution bylaws and had set up a dedicated pollution bureau responsible for regulation, monitoring, measurement, guidance and prosecution. On average, each pollution bureau had 48 staff, with each staff member overseeing 36 facilities.

The pollution reduction agreements represented a form of gentleman's agreement between local government and local companies, where both parties agreed to abide by stricter regulations than those imposed by the national government. Local governments sought to improve environmental conditions through monitoring and supervision of local industry. The first such agreement was signed in 1964 between the City of Yokohama and the power company Electric Power Development Company (now J Power). Under the terms of the agreement, the city of Yokohama was given the right to inspect company facilities and provide advice on environmental pollution control measures, and to impose stricter emission standards than those set down by the national government. The company was also required to submit regular survey reports.

2-2-4 Police Prosecutions and Fines for Polluters

In 1970, the National Police Agency set up a Pollution Control Measures Council and began

prosecuting environmental pollution offenses. Pollution inspectors and pollution prosecutors were appointed to the task of arresting environmental polluters. The arrest rate rose consistently at a rate of 25% - 65% per year.

Once companies understood the potential financial costs of environmental pollution, they began taking genuine steps to reduce pollution output. The police prosecutions and fines were therefore an effective means of forcing polluters to comply with the pollution regulations.

2-2-5 Financial Assistance for Prevention of Environmental Damage

Investment in equipment and technology designed to reduce pollution output can pose a significant financial burden in difficult economic circumstances, without providing any direct boost to company revenue. To encourage investment in pollution reduction initiatives, government financial institutions provided preferential taxation and financial measures, low-interest loans for plant and equipment investment, tax exemptions and special depreciation allowances. The Environment Pollution Control Service Corporation, meanwhile, promoted pollution reduction initiatives in industry by setting up green buffer zones and joint facilities for reducing environmental pollution, building joint-use production facilities and carrying out land reclamation projects.

2-2-6 Introduction of Regional Industrial Planning Policies

Regional industrial planning policies helped to reduce pollution levels by limiting the density of pollution sources (particularly factories) in a given area and encouraging the use of joint pollution control facilities.

2-2-7 Environmental Assessments

In terms of cost, effort and efficacy, it is much better to incorporate pollution controls, based on studies of anticipated environmental effects at the initial planning stage, rather than attempting to devise containment strategies after the event. To

this end, the environmental impact assessment is an important part of the preparatory process. Environmental impact assessments have been used in Japan since 1965, mainly for large factory construction projects. Preliminary studies are carried out to determine the expected pollutant emission levels, and the project plans are modified accordingly, for instance by providing additional processing and treatment facilities to reduce emission levels.

2-2-8 Pollution Prevention Research

Reducing environmental pollution requires specialized research, firstly to identify the types of pollution and how they are being generated, and secondly to identify the most effective method for dealing with them. In Japan, government pollution research institutes at the local and national level are staffed with dedicated researchers engaged in medical and environmental studies on pollution. Examples include a long-term epidemiological tracking study on the effects of environmental pollution on the human body, launched in 1970, and studies of community health management systems for anticipated health problems.

2-2-9 Use of the Court

The standard procedure for grievances and requests for mediation over pollution issues is to apply to the relevant government agency. Mediation by a government agency does not always provide satisfaction for the affected parties, who are generally in a weaker position than both government and industry. In such cases, recourse to legal action may be taken. Victims of pollution in Japan have often taken legal action against governments and corporations over acts of pollution. The four major pollution trials, for instance, all resulted in comprehensive victories for the plaintiffs. The basic health and welfare rights of the public were recognized, compensation was paid to pollution victims, and the legitimacy of their demands for an end to pollution was accepted.

In general, however, legal action over pollution issues is both complex and time-consuming, in light

of the difficulty of demonstrating the causal relationship between the pollution act and the illness or affliction, and the need for specialist skills and knowledge.

2-2-10 Pollution-related Health Damage Compensation

Japan has many precedents for payment of compensation for health damage suffered as a result of pollution, based on the polluter-pays principle. The Law Concerning Pollution-related Health Damage Compensation and other Measures, enacted in 1973, provides for payments to cover medical expenses, compensation for disabilities, bereavement payments, child allowances and funeral related expenses. This was followed by other measures for paying the medical expenses of victims of pollution who remained uncertified for prolonged periods while trying to establish a causal relationship. Rehabilitation programs, support for relocation for the purpose of recovery and recuperation, subsidized medical equipment for the home, and facilities to provide these services, are also made available to certified victims.

2-2-11 Education of Environmental Pollution Control Personnel for Industry and Local Government

Controlling environmental pollution requires not just legislation but people capable of effectively implementing the legislation. Companies, as the most common polluters, need staffs who understand pollution issues, while local governments need employees to monitor pollution in industry. Since 1971, all major enterprises in Japan have been required to appoint a pollution prevention officer, and local government employees are required to obtain accreditation through certified pollution prevention training courses. Local governments also provide pollution enquiry centers that provide advice on pollution control.

2-2-12 Pollution Awareness Campaigns

The level of commitment to pollution controls

and effective outcomes is very much subject to public opinion. The Japanese media, particularly television and radio, are constantly working to raise public awareness of pollution and environmental issues.

3. Environmental Pollution Control Measures in Developing Countries in the Light of Japan's Experience

Developing countries today tend to focus on economic growth and development at the expense of environmental pollution controls, in much the same way as Japan acted not so long ago. As we have seen, however, this situation can lead to major public health problems.

In Japan, pollution problems were allowed to escalate by the lethargic response of government and industry. Since then, however, pollution has been tackled successfully through a range of initiatives. The poor response to pollution controls can be attributed to a lack of consensus within government on the relative priorities of public health and the value of life versus the importance of economic progress and corporate profits. This debate had the effect of delaying the preparation of legislation and regulatory systems and the implementation and enforcement of pollution reduction initiatives. Other contributing factors included the unwillingness of the private sector, motivated primarily by the quest for profits, to make a genuine effort to implement voluntary controls and resolve pollution problems. This was exacerbated by the shortage of doctors trained to identify symptoms of environmental pollution as well as researchers capable of linking such symptoms to specific pollution sources. Given the potential for similar circumstances to arise in developing countries, it is worth reflecting on Japan's experience to prevent delays in the introduction of environmental pollution control measures.

Japan subsequently enjoyed spectacular success in reducing pollution levels through a range of initiatives by industry and government, but it is

Table 6-6 Prerequisites and Considerations Regarding the Application of Japanese Pollution Strategies in Developing Countries

Japanese approach	Prerequisites/considerations for application in developing countries
Pollution control legislation and establishment of administrative bodies	Separation of executive, legislative and judicial powers, what level of authority to be afforded to local government
Environmental standards and emission limits	Nature of government intervention International involvement in environmental and pollution fields
Pollution control by local government	Separation of executive, legislative and judicial powers, what level of authority to be afforded to local government
Police prosecution and penalties for pollution offences	Nature of government intervention
Financial assistance for pollution reduction	Level of industrial development
Introduction of regional industrial development planning	Level of industrial development Regional structures
Environmental assessments	Level of expertise in pollution technology
Pollution control research and surveys	Level of expertise in pollution technology
Recourse to legal action	Separation of executive, legislative and judicial powers, what level of authority to be afforded to local government
Compensation plans for pollution victims	Public opinion and social movements
Training of environmental pollution control personnel	Level of expertise in pollution technology
Public awareness of pollution issues	Public opinion and social movements

Source: Compiled by authors

important to note that these were driven by public opposition to pollution and associated protest activities. Public opinion was in turn driven by advocacy movements for pollution victims and media reporting. At the same time, legal verdicts holding governments and industry responsible for pollution also helped to force a change of approach in government. Environmental pollution gradually came under control as local governments faced with local pollution problems began introducing their own initiatives, and increasing numbers of those in government began to appreciate public sentiment on pollution. In the same way, public opinion and media pressure should provide effective forces for action on pollution in developing countries.

At the same time, we must remember that conditions in developing countries today are not the same as those in post-war Japan. In applying the lessons of Japan, it is important to take into account the political systems and functions of the country and region, as well as differences between peoples and cultures. The following seven differences between Japan and developing countries have been identified as potential influences on the outcomes.

1. Level of industrial development
2. Regional structures
3. Nature of government intervention
4. Public opinion formation and social movements

5. Separation of executive, legislative and judicial powers and level of authority afforded to local government
6. Level of expertise in pollution technology
7. International involvement in environmental

and pollution fields

Table 6-6 summarizes the main prerequisites and considerations to bear in mind when applying the Japanese approaches that were effective in pollution control to today's developing countries.

Chapter 7

Occupational Health

The systems operating in Japan to improve the general health of the population can be described as providing blanket coverage from cradle to grave, starting with regular medical examinations that are provided in local communities, schools and workplaces. With the aim of safeguarding and improving the general well-being of workers' workplaces in Japan and contributing to the provision of a comfortable working environment, a great variety of occupational health and safety strategies have been adopted over many years. Furthermore, occupational health initiatives have been taken by the centralized government regulation and enforcement, under an overarching legislative framework.

Before the war, because of poor working conditions many workers in Japan met with industrial accidents and fell victim to occupational diseases. After the war, thanks to regulation and enforcement by government agencies acting under the force of a wide-ranging legislative framework, a proper system was put in place to prevent the occurrence of such accidents and occupational diseases. In recent years, further progress has been seen in occupational health initiatives, with the implementation of measures in workplaces that will create healthy places to work and secure better levels of health for workers.

In developing countries currently undergoing rapid industrialization, such as in Asia and South America, work-related health problems have become rampant. Many aspects of the history of the development of occupational health measures in Japan may be applicable to these countries, particularly with respect to government regulation. From this perspective, this chapter will introduce the history of occupational health in Japan, focusing on the principal issues, solutions and government policies for a number of different eras. We will also

examine those approaches taken in Japan that may be of assistance to developing countries today.

1. History of Occupational Health in Japan

Occupational health in Japan has evolved in response to the health problems of workers employed in the major industries predominant in each particular era. Recent years, however, have seen increased emphasis placed on the role of the workplace in securing better mental and physical health for workers. This approach of providing a better working environment from the outset represents a move beyond the previous approach of tackling workers' health problems after, rather than before, they occur. Looking first at the pre-war era and then at the situation since 1945, this section will survey historical trends in occupational health measures in this country.

1-1 Worker Protection Measures Prior to 1945

The connection between work and diseases had already been observed in Japan's pre-modern period, as demonstrated by the results of research as far back as "Yojokun (A Teaching of Wellness, Ekiken Kaibara)", published in 1713. He found that mine workers often died within around three years of starting work as a result of pneumoconiosis caused by inhaling mine pollution, soot and smoke in the course of long working days. There was still no concept of occupational health at this time, however, whereby the health problems of workers might be redressed.

In the ensuing Meiji Era (1868~1912), the Japanese government established many state-owned industries under a deliberate policy of national industrialization. The workers at these

factories suffered from poor working environments, overwork and inadequate nutrition, with the result that tuberculosis, feared at the time as a “fatal disease,” broke out periodically within factories and workers’ quarters, thereby arguably qualifying as a kind of occupational disease.

The first law adopted in Japan with the aim of protecting these workers was the Factories Act of 1911, which came into force in 1916. Its principal provision was to prohibit night work by women and youths. Then in 1905 the Mining Law was enacted, which brought regulation of the mining industry in line with the country’s forest industry, agriculture and fishing industries. Both these laws contained many exemption provisions however, and were criticized as being essentially toothless.

Although the government first drafted the Factories Act in 1882, the proposed legislation provoked strong opposition from the nation’s factory owners, who put every obstacle in the way of its enactment. Even after it was passed into law, they succeeded in delaying its enactment for a further five years. In order to overcome this opposition, the government asked a physician, Osamu Ishihara, to conduct a wide-reaching fact-finding survey into the working conditions and work-related deaths of female rural migrant workers, and the results of that survey were a major impetus in getting the Factories Act passed in the diet¹. This was the first recorded use of the results of epidemiological research in the formulation of government occupational health policy. In addition, the concept of “occupational health” was first introduced to Japan with the opening of a hospital in a state-owned steel mill. Founded in 1896 in Yahata Village in Fukuoka Prefecture, the new hospital thereafter managed the occupational health of its workers.

The exemption provisions under the Factories Act and the Mining Law proved to be an obstacle to Japan’s admission as a permanent member of the International Labor Organization (ILO), which had been founded in 1919. These exemptions were

subsequently gradually phased out, thereby expanding the protection of workers. In 1923 the Factories Act was revised, introducing measures such as an increase in the minimum working age of minors, along with an expansion of the definition of night work. In 1924 the Mining Law was also amended.

As the Showa Era (1926~) commenced, a succession of ordinances were promulgated concerning living quarters for factory workers, as well as safety management at factories, mines and construction sites. Some progress in occupational health was also seen, for example in 1930 miners’ pneumoconiosis was officially recognized as an occupational disease, as was silicosis in 1936.

However, as the country headed down the path to the Pacific War, special wartime regulations were adopted one after another. These gradually rendered the above-mentioned laws and ordinances defunct in practice, thereby undermining their intended function of protecting workers.

1-2 Post-war Administration of Occupational Health

1-2-1 Establishment of a New Legislative Framework for Occupational Health (Immediate Post-war Period)

The Factories Act and Mining Law were resurrected immediately after the war ended, in 1946. As both laws were now inadequate in view of the international standards of the time, the Labor Standards Law was enacted in 1947, consolidating the two statutes, together with other pre-war worker protection ordinances. As the Labor Standards Law also set out a health and safety management structure for employers to adopt, at a stroke Japan had a proper legal system in place for the regulation of occupational health. With the establishment of the Ministry of Labour in 1947, the nation also acquired a specialist government agency that was dedicated exclusively to administering labor policies.

The pressing issue of the time was to prevent

¹ Kawakami, Takeshi (1965) *Gendai Nihon Iryo shi* [Japan’s History of Modern Medical Care] Keiso Shobo.

workers from contracting diseases such as tuberculosis, dysentery, silicosis, and heavy metal poisoning. The Labor Standards Law contained provisions that would prevent harm to workers, prohibited the manufacture of harmful substances, and provided for health and safety education along with medical examinations. Calls were made for medical examinations to be provided for all workers, and for the wearing of protective equipment to be strictly observed. From 1948 when the “Silicosis Control Committee” was set up, numerous policies were adopted to deal with silicosis from a variety of angles, and other ordinances concerning occupational safety protective equipment were brought into force. In addition, steps were taken to foster awareness of occupational health such as “National Industrial Health Week,” launched in 1950 with the aim of educating the general population about occupational health issues.

1-2-2 Responses to Frequency of Occupational Disease and Industrial Accidents (mid 1950s~1960s)

From the mid 1950s, occupational diseases and industrial accidents became more common as the country experienced rapid growth in heavy industry. The “Primary Industrial Accident Prevention Plan” was drawn up to address this problem, and between 1955 and 1960 various protection laws, a medical examination system, and preventive ordinances were introduced. In the 1960s, as the country entered a period of strong economic growth and technological innovation, new kinds of industrial accidents began to occur. In response, measures were adopted in the form of various kinds of preventive ordinances as well as legislative measures (see Table 7-2).

In 1964, with the aim of encouraging businesses to take the initiative in conducting health and safety management programs, the Law regarding Organizations for Industrial Accident Prevention was passed. At the core of this law was the establishment of the Japan Industrial Safety and Health Association (JISHA), as well as the creation of five industry-based health and safety

associations.

1-2-3 Enactment of the More Comprehensive Law on Industrial Health and Safety (1970~1980s)

Although by now a series of occupational health laws and ordinances were in place, Japan’s rapid development as an industrial society meant that it was no longer possible to effect a comprehensive approach to occupational health with an industrial accident prevention policy based on the system of laws centered on the Labor Standards Law. Having come to this conclusion, in 1972 the government passed the Industrial Health and Safety Law, which both split off those sections of the Labor Standards Law concerning occupational health and added more comprehensively to their provisions.

Whereas the Labor Standards Law was strongly characterized by a setting out of minimum standards and enforcing compliance with these, the Industrial Health and Safety Law went one step further, allowing employers to both develop measures for preventing hazards to workers’ health that were better suited to the changing nature of their business, and to undertake endeavors to develop more comfortable working environments. It also provided for assistance to small and medium-sized enterprises, and the training of specialist occupational health officers. Along with health and safety education, the Industrial Health and Safety Law actively promoted the “three managements” of occupational health (working environment management, work management, and health management), and it led to a dramatic fall in occupational diseases.

In the 1980s, demands were made to further promote measures to safeguard and improve workers’ overall well-being, and the 1988 revision of the Industrial Health and Safety Law imposed an obligation on employers to exert efforts to safeguard and improve the general well-being of their workers. It also gave further encouragement to organized occupational health measures in the workplace. Calls also began for workers too to

Table 7-1 Important Trends in Occupational Health Policy

1982	Factories Act drafted and deliberated
1905	Mining Law enacted and implemented
1911	Factories Act enacted
1916	Factories Act implemented
1919	Japan becomes permanent member of the International Labor Organization (ILO)
1938	Ministry of Health and Welfare established, takes responsibility for administration of labor policies
1941	Pre-war ordinances effectively nullified by wartime regulations
1946	Factories Act and Mining Law reactivated
1947	Labor Standards Law enacted and implemented, stipulates health and safety management structure for employers
1947	Ministry of Labour established
1948	Silicosis Control Committee created
1948	Mobile silicosis screening service launched for metal mine workers
1950	First National Industrial Health Week
1972	Industrial Health and Safety Law enacted
1975	Law for Working Environment Measurement enacted
1979	System of testing of noxiousness of chemical substances (amendments to the Industrial Health and Safety Law)
1988	Measures for safeguarding and improving workers' general well-being (amendments to the Industrial Health and Safety Law)
1996	Promotion of measures to ensure workers health and safeguard professionalism of industrial physicians (amendments to the Industrial Health and Safety Law)
1999	Management of health of night shift employees (amendments to the Industrial Health and Safety Law)
2001	Re-organization of Ministry of Labour as part of the Ministry of Health, Labour and Welfare

Table 7-2 Post-war Preventive Ordinances Related to Occupational Disease

1950	Regulation for Occupational Health Protective Equipment Certification
1951	Ordinance on the Prevention of Harm caused by Tetraethyl Lead
1955	Law for Special Protection against Spinal Cord Injuries
1956	Introduction of special medical examinations for pneumoconiosis and 16 types of occupational diseases
1959	Ordinance on the Prevention of Ionizing Radiation Hazards
1960	Ordinance on the Prevention of Organic Solvent Poisoning; Ordinance on the Prevention of Harm Caused by Tetraethyl Lead, etc.
1961	Ordinance on Health and Safety of Work Under High Pressure
1967	Ordinance on the Prevention of Lead Poisoning; Law for Special Measures to Prevent Carbon Monoxide Poisoning through Coal Mine Accidents.
1968	Ordinance on the Prevention of Tetraalkyl Lead Poisoning
1970	Standards for Chain Saws; Circular on Lower Back Injuries Caused by Handling Heavy Objects
1971	Ordinance on the Prevention of Oxygen Deficiency, etc.; Ordinance on Office Health and Safety Standards; Ordinance on the Prevention of Hazards due to Specified Chemical Substances
1979	Ordinance on the Prevention of Hazards due to Dust

become aware of, and strictly follow, measures to safeguard and improve their own well-being. As a result, in addition to existing occupational health measures whose aims were focused on early detection and treatment of sick workers, general

monitoring began of the health status of all workers, along with personalized counseling and guidance on positive steps that individual workers could take to improve their health, suited to their particular health requirements.

1-2-4 Increased Prevalence of Stress-related Disease (1990s~present)

From the early 1990s, Japan saw the rise of certain undesirable trends, such as the inability of older workers to adapt to the spread of new office technologies, working environments where people felt isolated, and the collapse of the “bubble” economy. This last event led to layoffs of older workers, and it also meant that longer working hours and working on holidays became a permanent feature of workers’ lives. Certain problems arose as a result, such as an increase in the number of workers with symptoms of neurological and psychological disorders, caused by a general deterioration in the working environment.

In 1996, as part of the organization of a new system of health management, the Industrial Health and Safety Law was revised to make it compulsory for medical practitioners to inform workers of the results of their medical examinations, and to provide recommendations on measures they could take to protect their health. The aims of these amendments were to safeguard the professionalism of industrial physicians, and to ensure the implementation of proper treatment for workers based on the results of their medical examinations. The Industrial Health and Safety Law now also provided for state aid to small and medium-sized enterprises to introduce these measures.

Despite this, Japanese society still experienced the problem of “*Karoshi*” (literally, “death from overwork”), which was officially designated a workmen’s compensation in 2001. *Karoshi* is caused by exhaustion that built up from working long hours and on holidays, a consequence of Japan’s protracted economic downturn. With no subsequent abatement in the severe working conditions with which Japanese workers had to contend, physical and psychological stresses continued to grow. There were signs of a rise in the suicide rate among the working age population, and for the four year period commencing from 1998, more than 30,000 people committed suicide in Japan each year. In particular there was an increase in the number of suicides among men in their fifties,

usually the family’s main breadwinner, and this has become a serious problem for society.

2. Main Initiatives for Occupational Health

Occupational health initiatives in Japan have been implemented in the form of regulation and enforcement by the central government. The government agency with jurisdiction for carrying out the government’s labor policies is currently the Ministry of Health, Labour and Welfare. The main departments are the Labor Standards Bureau, in particular, the Industrial Health and Safety Department; the Worker’s Compensation Division, responsible for the official designation of industrial diseases; and the Wages and Working Hours Division, which is responsible for wages and working hours

The government agencies with direct jurisdiction for occupational health matters, and are therefore on the front line of occupational health regulation in Japan, are the forty-seven Prefectural Labor Bureaus (one for each of Japan’s regional governments) and the 343 Labor Standards Inspection Offices (plus four branch offices). These agencies directly monitor and exercise control over occupational health issues, such as health management and working environment improvements at businesses. This essay will examine this regulatory structure from three broad perspectives: basic policies of occupational health regulation, initiatives within workplaces, and other measures.

2-1 Administration of Fundamental Occupational Health Policy

The administration of occupational health in Japan can be broadly divided into four areas: occupational diseases, industrial accidents, medical examinations and health promotion, and workers’ compensation. The Ministry of Health, Labour and Welfare divides these further into the following eight categories: Basic Measures (involving establishing management systems and conducting

occupational health education); Occupational Disease Measures; Chemical Substance Measures; Health Measures; Comfortable Workplace Measures; Industrial Healthcare Activities Promotion Measures; Small- and Medium-Sized Enterprise Measures; and Organization of Research Systems. This section will examine in particular the three main areas of industrial accidents, occupational diseases, and medical examinations and health promotion.

2-1-1 Industrial Accidents

The number of deaths and injuries in Japan caused by industrial accidents has been declining over the long term. In order to reduce industrial accidents and to create workplaces where workers can work in safety, as was seen above, the government has launched a great variety of policies, starting with the debate over the bill for the Factories Act in 1982. Particularly in the post-war period, the Japanese Government has addressed many individual problems; starting with its enactment of the Labor Standards Law in 1947 establishing minimum standards and providing for powers to enforce compliance (see Table 7-1).

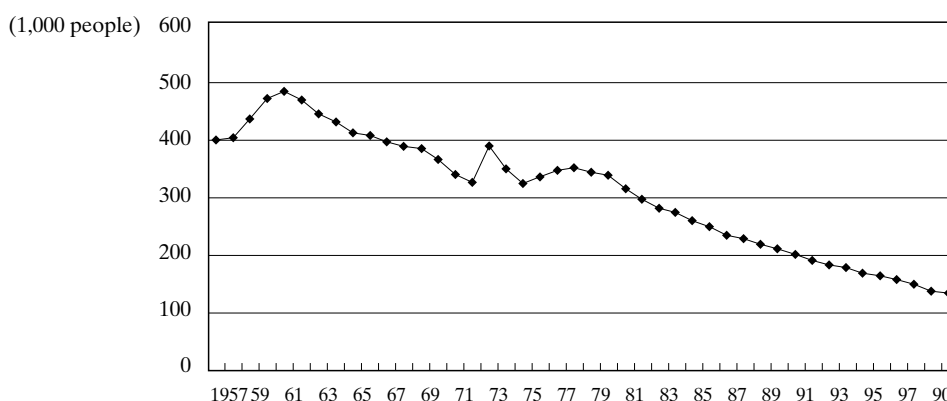
This establishment of a legislative framework providing for government regulation and

enforcement is an important approach that can also be applied in today's developing countries when setting up an appropriate fundamental infrastructure for occupational health. In particular, a proper legal framework needs to be put in place to define minimum safe working environments for enterprises such as workshops that lack modern automated equipment, a feature to be found in many developing countries.

While the number of deaths and injuries from industrial accidents in Japan (defined as four or more working days lost) has fallen markedly since the 1980s, it nevertheless still amounts to around 130,000 people a year (see Figure 7-1). In addition, the total number of people injured at work (defined as at least one working day lost) is around 550,000 people a year (these figures are taken from MLHW workers' compensation payments data for 2000).

While the 1970s saw the number of fatal accidents decline sharply, since 1996 the figure has plateaued at around 2,000 deaths a year, standing at 1,889 in 2000 (see Figure 7-2). For this reason the Ministry of Health, Labour and Welfare set objectives with a view to achieving a large improvement in this figure, and has been promoting strategies to prevent industrial accidents tailored to individual industry sectors. As a part of its aim of

Figure 7-1 Trends in Industrial Accidents (Either Fatalities or Causing at Least 4 Days Off Work)



Source: Japan Personnel Management & Safety Information Center

further raising health and safety levels in the nation's workplaces, the Ministry of Health, Labour and Welfare defined a series of processes for employers called "Planing - Implementation - Evaluation - Improvement," and in 1999 it also announced the "Guidelines for Labor Safety and Health Management System," a management tool which assists employers in initiating and maintaining their own health and safety programs. The Ministry of Health, Labour and Welfare continues to work to ensure the widespread and consistent use of these accident prevention strategies.

On the whole, Japan experienced few industrial accidents prior to its industrialization in the late nineteenth century. With the introduction of modern machine-based production methods, both the frequency and severity of industrial accidents increased. Although attempts are often made to attribute the cause of industrial accidents to workers' negligence or lack of care, there is also a need to eliminate the underlying causes for such worker errors. These include inadequate safety education; fatigue due to working long hours; boring work of a monotonous labor; late-night work; hot and humid conditions; improper lighting; high levels of noise; excessive alcohol intake; and

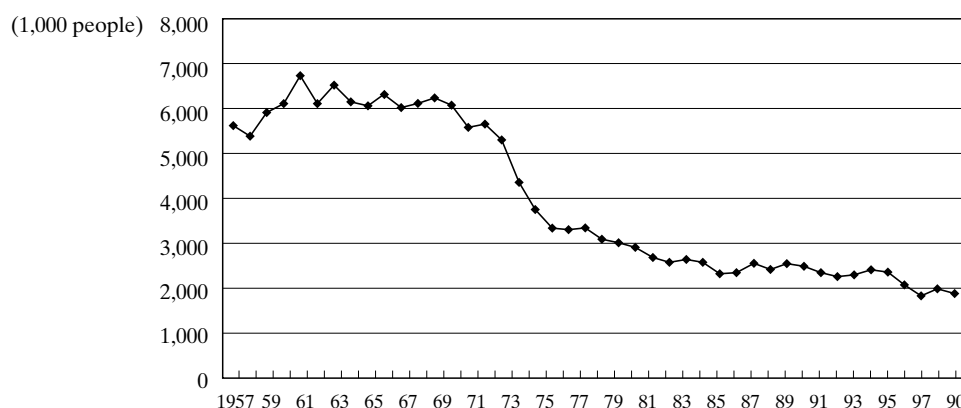
domestic problems. In any event, modifications should be made to deal with inevitable lapses of attention and oversights, such as installing safety devices that can prevent industrial accident².

2-1-2 Occupational Diseases

An "occupational disease" is a disease caused by the working environment and working conditions in a specified workplace, and can therefore be prevented by removing its cause. Occupational diseases can have three different causes: physical causes present in a worker's working environment, such as high-pressure hazards, industrial deafness, and vibration hazards; chemical causes, which can lead to pneumoconiosis, toxic gas poisoning, organic solvent poisoning, or heavy metal poisoning; and work processes, which can lead to neck, shoulder and arm conditions or lower back pain. Particularly in the post-war period, a system gradually took shape in Japan through the introduction of measures to combat occupational diseases, resulting in the adoption of many preventive strategies (including legislative measures), as well as the implementation of programs providing assistance for injured workers.

From around the start of the Showa Era in 1926, a series of measures were adopted to deal

Figure 7-2 Trends in Fatal Accidents



Source: Japan Personnel Management & Safety Information Center

² Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku 2003* [Simple Hygiene and Public Health 2003] Nanko do. p. 240.

with pneumoconiosis, a lung disease often seen in mine workers. After the war the Silicosis Control Committee was set up in 1948, representing the creation of a system that would deal with another important issue that the nation faced. Under one particular systematic policy, pursuant to the Law for Special Protection against Silicosis of 1955 medical examinations were conducted between 1955 and 1957 on around 340,000 workers around the country engaged in work involving high levels of dust, and this program subsequently became permanent with the passing of the Pneumoconiosis Law in 1960.

It is especially worth noting that initiatives taken at this time focused on creating national strategies. Since then, the Pneumoconiosis Law has been revised several times in response to medical advances and changes in Japan's industrial structure, and a policy has been adopted that aims to achieve comprehensive work management strategies against dust sources. In addition under the Pneumoconiosis Law, employers of employees engaged on a permanent basis in work involving high levels of dust are required to give those workers medical examinations for the early detection of pneumoconiosis. (There are four types of examinations: upon hiring, periodic examinations, extraordinary examinations, and when a worker leaves employment). As a result, workers with signs of pneumoconiosis are examined by a "regional pneumoconiosis specialist," and their subsequent disposition classification be decided by the local Prefectural Labor Bureau.

The Ordinance on the Prevention of Organic Solvent Poisoning of 1960 stipulated that ventilation had to be adequate and that workers wear proper respiratory protective devices such as gas protection masks and air-line respirators. Subsequently, the Ordinance on the Prevention of Hazards Due to Specified Chemical Substances of 1971 provided for protection against chemical substances linked with occupational cancers, dermatitis, nervous disorders, and other health problems.

The manufacture of benzene and other carcinogens was banned under the Industrial Health and Safety Law of 1972, and then in 1974 the ILO adopted a convention for the prevention and control of industrial injuries caused by carcinogens and carcinogenic factors. In 1975, stronger measures were adopted to deal with occupational carcinogens such as chromium. Then in 1977, in order to develop and strengthen a fully comprehensive strategy for dealing with occupational cancers, the Industrial Health and Safety Law was revised to create a new carcinogen testing system. Under this system, new chemical substances were tested for potential toxicity, existing chemical substances were tested for carcinogenicity, and epidemiological research was also conducted. The Japan Bio-assay Research Center was set up in Kanagawa Prefecture as the testing facility.

From the 1980s, with the spread of personal computers, VDT (Visual Display Terminal) Syndrome gave rise to public concern. The burden on workers' eyes through prolonged use of VDTs, and on their musculoskeletal systems through uninterrupted typing and maintaining the same posture over long periods of time, along with other forms of psychological and nervous fatigue, were collectively termed "technostress." The Ministry of Health, Labour and Welfare released "Occupational Health Guidelines for VDT Work" in 1985, and since personnel with knowledge and experience were first needed before these new health disorders could be tackled, systematic personnel training programs were set up through industrial health and safety associations, including education for occupational health officers and internal company instructors in workplaces using VDTs.

2-1-3 Medical Examinations and Health Promotion

Under Article 66 of the Industrial Health and Safety Law, employers have an obligation to provide medical examinations for all their workers. There are three types of workplace medical

examinations: “general medical examinations,” “special medical examinations,” and “medical examinations requested by night work employees.” These examinations provide feedback for management of health, work processes, and the work environment, in the form of an overall assessment of changes over time in the health status of employees. One aim of this process is to assist employees to be in the optimum health at all times, maximizing productivity. The 1996 amendments to the Industrial Health and Safety Law made it compulsory for medical practitioners to inform workers of the results of their medical examinations, and to provide recommendations on measures they can take to protect their health.

Whereas general medical examinations are for all workers, special medical examinations are provided for those workers engaging in harmful duties. The pneumoconiosis medical examinations mentioned earlier are a typical example. In addition, special medical examinations are compulsory for workers engaged in seven specified types of hazardous work, for example involving

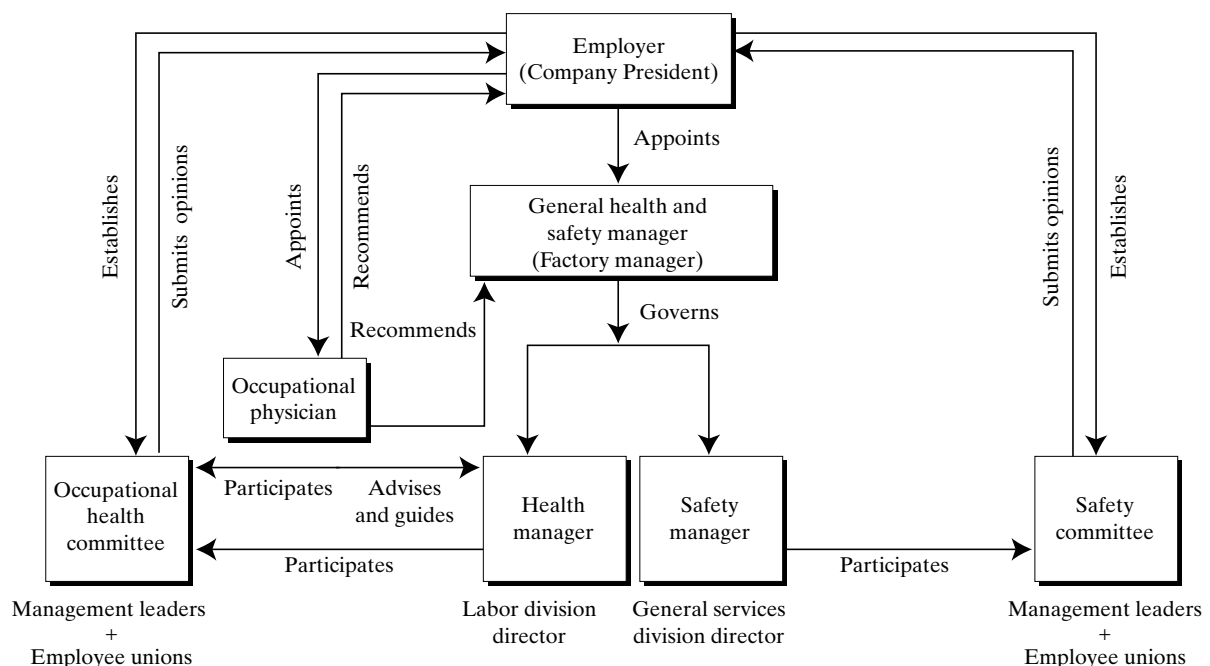
radiation, noise, operations within high pressure rooms, and certain organic solvents.

Putting in place a comprehensive system for medical examinations requested by night work employees was the aim of 1999 amendments to the Industrial Health and Safety Law. These provided that the results of medical examinations made at the request of night work employees could be given to their employer, and that the employer had to take appropriate responses in view of those results.

With the 1988 amendments to the Industrial Health and Safety Law, alongside their obligation to prevent the outbreak of occupational diseases among their employees, employers were also given an obligation to strive to prevent non-work-related injuries and illnesses as well as illnesses derived from their employees’ personal lifestyles and habits, with a view to improving their employees’ general health. On the other hand, the amendments also stipulated that employees too were to make use of the measures provided by their employer to safeguard and improve their own general well-being.

These amendments are in accord with the

Figure 7-3 System of Occupational Health Management Under the Industrial Health and Safety Law (Model)



Source: Health and Welfare Statistics Association

concept developed in recent years that attention should be given not just to workers' physical health, but also to their psychological health. From the perspective of promoting workers' psychological health, the government has led the way in pursuing reductions in working hours. As part of that process, amendments to the Labor Standards Law in 1988 saw the realization of the forty hour working week in Japan. Small and medium-sized enterprises have been particularly slow to adopt and strictly enforce this measure, however, and as of 1999 only 58.7% of all workers enjoyed a five day working week.

2-2 Employer Occupational Health Systems

Under the Industrial Health and Safety Law, employers have an obligation to establish a system of occupational health management that is appropriate for the size of their business. Figure 7-3 shows a model for an occupational health system. First, an employer with a staff of at least fifty people on a permanent basis must set up an "occupational health committee." Half the committee members, excluding the chairperson, must be employee representatives, and the committee must meet at least once each month. Committee meetings are a forum for expressing opinions to the employer

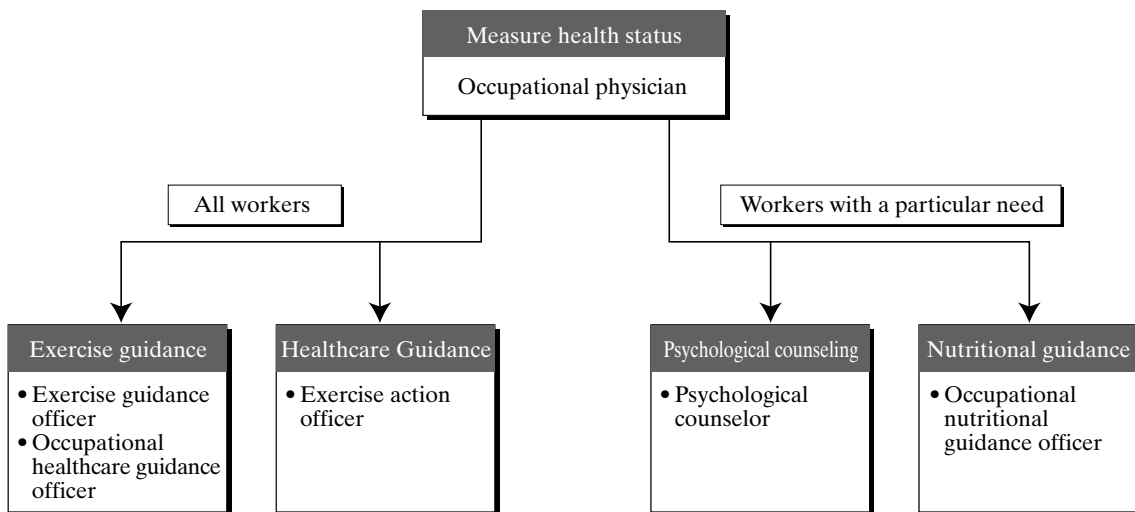
about preventing industrial accidents or harm to the health of workers.

An "occupational physician" is a medical practitioner who specializes in occupational health, principally in workplaces. Their duties include conducting regular health checks and medical examinations; providing health and hygiene education; advising about work management and working environment management; and investigating the causes of, and adopting measures to prevent the recurrence of, harm to workers' health.

The Industrial Health and Safety Law provides that a dedicated occupational physician is to be stationed at workplaces with 1,000 or more employees, and an occupational physician is to be appointed for workplaces with fifty or more permanent workers. For workplaces with fewer workers than that, several employers may join forces to appoint a shared occupational physician, and government financial aid is available to assist them.

Occupational physicians were not initially introduced as a government initiative; their use was pioneered when Magosaburo Ohara, president of the textile manufacturer Kurabo Industry LTD., instituted as system of medical examinations for his

Figure 7-4 Total Health Promotion Plan Flow Chart



Source: Health and Welfare Statistics Association

employees. Legislative provision was first made for occupational physicians in 1972 with the enactment of the Industrial Health and Safety Law, and then in 1996, in order to ensure the professionalism of occupational physicians, the Industrial Health and Safety Law was amended to stipulate certain professional requirements. These involved the certification of industrial physicians who completed Ministry of Health, Labour and Welfare-accredited training programs; standards to determine pass levels for occupational health consultant examinations; and requirements for university academics running courses in occupational health.

In addition, employers are required to appoint “health management staff,” the type depending on their size and industry type. At workplaces with fifty or more permanent workers, a health and safety officer has to be appointed to manage technical matters relating to occupational health issues. In the forestry and mining sectors, a general health and safety manager must be appointed for workplaces with more than 100 people. In hazardous workplaces, such as those involving high pressure rooms, boilers, radiation or specified chemical substances, a work manager with specified skills must be appointed.

To ensure their elimination from working environments, the presence of leading causes of harm, and the circumstances leading to their occurrence, must be properly monitored. To that end, the Law for Working Environment Measurement was enacted in 1975, introducing the qualification of “working environment measurement technician,” and specifying the qualifying criteria for this profession. The Japan Association for Working Environment Measurement was formed in 1979, contributing to an improvement in the professional standards of measurement technicians and measurement agencies. The “Guidelines for the Management of Working Environments based on Working Environment Evaluations” produced in 1984 stipulate that measurement results are to be assessed as one of three grades (“appropriate,” “room for improvement,” or “inappropriate”),

and appropriate measures are to be taken based on the assessment.

As part of recent strategies to deal with worker stress, attention has also been given to psychological health. Pursuant to the Industrial Health and Safety Law, employers are implementing total health promotion plans involving measures to safeguard and improve both the psychological and the physical well being of their workers. As shown in Figure 7-4, holistic health guidance, based on the results of health measurements, is provided by health promotion staff who have undergone specialized training. Furthermore, in order to promote psychological health strategies in the workplace, “Guidelines for Creating Psychological Health in the Workplace” were drawn up in 2000 with the aim of popularizing such strategies and making them a permanent feature in the workplace.

An occupational healthcare service support system has also been put in place for occupational physicians as well as small businesses. Occupational healthcare promotion centers have been set up in each regional government area, providing specialist advice and occupational healthcare information to occupational physicians and allied professionals. It is difficult for workplaces with fewer than 50 workers (where the appointment of an occupational physician is not required) to rely on their own efforts to seek occupational health advice from medical practitioners. For this reason, regional occupational healthcare centers have been established at most Labor Standards Inspection Offices around the country (numbering 347 as of the end of 1997), to provide small businesses with health consultation services and individual occupational healthcare guidance.

2-3 Workers’ Compensation Insurance System

Insurance on work-related accident and illness is provided under the Law on Workmen’s Accident Compensation Insurance. One objective of the Law on Workmen’s Accident Compensation Insurance is the provision of compensation to provide workers

with prompt and fair redress in the event of injury, illness, physical impairment or death suffered due to work-related causes, or in the course of commuting to or from work. A second objective is the advancement of the welfare of workers, for example by giving an impetus to the rehabilitation of injured workers.

The Law for the Collection of Insurance Premiums for Work-related Accident, Illness and Unemployment, which came into effect in 1969, consolidated the administration of workers compensation insurance and unemployment insurance into one system. Apart from “voluntary participation businesses” (meaning unincorporated agricultural, forestry or fisheries businesses that employ fewer than five workers permanently), all businesses in Japan have to take out workers’ insurance for their employees. Subsequently, because of the increased number of workers sustaining injuries while commuting in the era of Japan’s high economic growth, in 1973 commuting accidents were also brought within the protection of workers insurance³.

Under the workers’ compensation plan, compensation is currently payable for treatment, leave, residual impairment, surviving family members, long-term care givers, funeral payments, disability pensions, and secondary medical examinations. The government agencies that administer the workers insurance scheme are the Ministry of Health, Labour and Welfare at the central government level, and the Prefectural Labor Bureaus and Labor Standards Inspection Offices at the regional government level.

2-4 Strategies for Small Businesses

In Japan, small businesses (meaning those with

fewer than fifty employees) account for over 90 percent of the number of businesses, and for more than two-thirds of all workers (although the proportions will vary according to the type of industry). Compared with larger firms, the incidence of industrial accidents is rather high for small businesses, and in the area of occupational health management, initiatives such as medical examinations and working environment measurement have not been implemented by many firms⁴. For example, while the rate of implementation of health and safety education is close to 100% for large businesses, it is 39% for businesses with 10-29 employees. Medical examinations are provided by just one in five of all businesses with 1-4 employees⁵. Under the 1998 amendments to the Small and Medium-Sized Enterprises Basic Law, Small and medium-sized enterprises were ranked as a “driving force for the Japanese economy,” and extolled for their “diverse and vibrant growth and development.” There nevertheless remains a wide gap between small and large businesses in the area of occupational health.

For this reason, in 1999 the “Assistance for Small Organizations’ Safety and Health Activities” was launched, with the aim of increasing occupational health implementation by small businesses. Under the guidance of occupational health experts, plans are drawn up for health and safety activities that can be implemented by small businesses, and they are provided with support for basic occupational health measures, such as health and safety education. In addition, with the aim of endeavoring to make special medical examinations a more common feature at small and medium-sized enterprises, a “special health check mobile service for SME employees” has been running since 1961,

³ See for more detail on the Ministry of Health and Welfare (1997) *Nihon no Shakaihosho no Ayumi* [History of Japan’s Social Security System] Chuo Hoki.

⁴ Health and Welfare Statistics Association (2002) in *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9. No. 768. Health and Welfare Statistics Association. p. 302.

⁵ Japan Society for Occupational Health and Small and Medium Enterprise Occupational Health and Safety Research Society eds. (2002) *Chusho Kigyo Anzen Eisei wo Tsukuru* [Creating Occupational Health and Safety in the Small and Medium Enterprise] Rodo Eisei Chosa.

and the range of occupational diseases covered by this program has been gradually expanded since its launch.

- **Occupational Diseases in the Primary Industries Sector**

Although occupational health in Japan first evolved principally around secondary industry, after the Second World War occupational health concepts and methods also spread to the primary industry sector, as a part of rural community medical services. For example at Sawauchi-mura in Iwate Prefecture, as part of community medical services, regular medical examinations are provided for the employees of agricultural organizations such as agricultural cooperatives; a program that also covers seasonal and itinerant workers. Calisthenic exercises were also devised for farmers to prevent lower back injuries and neck and shoulder stiffness. Along with public health centers, women's associations have also been at the forefront of activities to improve the health status of Japan's rural population⁶.

In the Saku Region of Nagano Prefecture, the local general hospital has served as a base for the implementation of programs to improve the health of residents of farming communities. A mobile diagnosis and treatment unit was set up by the hospital to provide outreach medical services, and health education was promoted through performances by theater groups, as were projects to bring about improvements in the health of farming families that involved active participation by agricultural cooperatives and youth groups. A principal player in that process was Shunichi Wakatsuki, who along with his colleagues employed social medical methods to classify the diseases and injuries seen in rural regions into three groups: "farmer diseases," namely conditions suffered by individuals related to farmer's duties, such as

trauma, heat stroke, lower back pain, tenosynovitis of the hand and wrist, and agricultural chemical poisoning; "farm diseases," namely diseases derived from living a farm lifestyle, such as chronic gastrointestinal disease and vitamin deficiencies; and "farming community diseases," namely diseases derived from living in a rural environment, such as roundworms, dysentery, and goiter. By defining the causes of outbreaks of each particular disease and by pursuing countermeasures with clear improvement goals, the research group attempted to contain and prevent these diseases. Through the founding in 1952 of the Japanese Association of Rural Medicine, their experience could be shared by people around the country with an interest in rural medicine⁷.

2-5 Towards a Participatory Model for Occupational Health Programs

To date, efforts in Japan to address occupational health issues have been pursued through a framework of regulation and enforcement by central and local government. In the 1990s, in line with international trends in occupational health, calls were made to adopt a comprehensive risk management style whose central tenets were work-related safety and preventive improvements to workers' general health, and a change to a "participatory" style of activities, where management and employees work together to decide occupational health measures.

Based on the ILO Guidelines on Occupational Health and Safety Management Systems⁸, while acknowledging that "occupational health and safety management must be the responsibility and obligation of employers," the Ministry of Health, Labour and Welfare expects employers "to show strong leadership and responsibility for Occupational Health and Safety Management activities in the workplace, and to create a proper

⁶ Araki (1983)

⁷ Nishirai (1983)

⁸ International Labor Organization (2001)

system for the establishment of Occupational Health and Safety Management.” To that end the Ministry of Health, Labour and Welfare demands the participation of employees in all areas of Occupational Health and Safety Management, from planning and implementation through to assessment and improvements. In addition, through workplace health and safety committees, the Ministry aims to establish cycle management systems that will function with practical effect⁹.

3. Occupational Health in Developing Countries in the Light of Japan's Experience

3-1 From Government Directive to Worker-management Partnerships, a Century of Progress

Japan's initiatives in the field of occupational health have been pursued through a system of strong centralized regulation and enforcement by government under an overarching legislative framework. Perhaps such a system, where the state takes the initiative in setting minimum standards and enforcing compliance, is needed at the point in a country's history when employers and the broader community in general lack awareness of occupational health concepts, when employers hold great power over their workers, and when businesses have little technical knowledge or resources at their disposal to implement occupational health programs.

Prior to the enactment of the Industrial Health and Safety Law in 1972, Japan too operated under such a system, which provided minimum levels of health and safety for its workers. After 1972, however, improvements in occupational health were based on employers' greater sense of “ownership” of their occupational health issues, as

a result of their increased awareness, knowledge and experience. Then in the 1990s, in line with world trends, workers and management took their cooperation a step further, and the attitude became more widespread that efforts should now be directed to safeguarding and improving workers' overall well-being, and to developing more comfortable working environments.

The history of the expansion of Japan's occupational health system over more than a century has led the country to the developmental stage of a social economy, and to a fostering of awareness in the wider community. This history can furthermore be broadly divided into three periods, namely: the era of the leading role of government (1882~1971), when effort was focused on setting and enforcing compliance with minimum standards; the era when employers undertook principal responsibility for tackling occupational health and safety (1972~89); and finally the present era (from 1990 onwards), where workers and management work as a team on occupational health and safety issues. The most striking feature of the first era, of the leading role of government, is that it is by far the longest of the three, demonstrating that a considerable period was required to attain a certain level of national minimum standards.

Developing countries also need to address occupational health issues, although they must keep in mind that fully-fledged occupational health systems cannot be achieved overnight. What is required is a steady and comprehensive implementation of realistic measures that have practical effects, in a process that takes into account the particular stage of the country's development and the degree of readiness for participation by the principal players, namely the state, employers, and workers.

⁹ Japan Industrial Safety and Health Association ed. (2002) *Saishin Anzen Eisei Sekai no Ugoki* [Trends of the World's Industrial Safety and Health] Chuo Rodo Saigai Boshi Kyokai.

3-2 Promoting the Participatory Model of Occupational Health

We have already stated that the relative importance of the principal stakeholders in occupational health initiatives depends on the particular stage of a country's economic development. It is also important to introduce as far as possible a participatory model of occupational health activities, in keeping with current world trends. Even in Japan this approach only started in the 1990s, and it has not yet reached the stage where this approach has been systematically examined to produce definite results. Japan and aid recipient countries should therefore adopt the approach of learning from each other as they come to grips with this new occupational health model. For that purpose, in developing countries the first requirement is a full and widespread understanding on the part of both workers and employers of the value of improving occupational health levels.

To date, occupational health assistance offered by JICA to countries experiencing rapid economic growth has mainly taken the form of the classical "management" model of occupational health in large-scale workplaces, principally in secondary industries. A cooperative approach now needs to be developed that incorporates the participatory model. The Occupational Medicine Project of the Catholic University of Korea, College of Medicine and Nursing, a technical collaboration project supported by JICA that ran between 1971 and 1974, incorporated an anti-cancer strategy program with a group parasite eradication program that JICA had been conducting since 1968, as a ground-breaking combination. This method, using control measures for the most important diseases for the region, attracting the interest of workers and employers, as an entry point had much in common with Japan's successful experience of using parasite control programs as an entry point for maternal and child health and community-

based health projects. This suggests that similar methods can also be applied to occupational health strategies.

3-3 On-site Occupational Health and Safety Measures

In Japan, employers are required under the Industrial Health and Safety Law to establish an independent system of occupational health management for their business (see Figure 7-3). Specifically this entails the creation of an occupational health committee that includes workers' representatives, and the appointment of an industrial physician along with health and safety officers. Starting with measures to raise awareness of occupational health issues in the workplace and to identify key issues, the creation of a system that can provide feedback to upper management on health and safety improvements is an effective step in promoting the participatory approach to occupational health activities.

3-4 Promoting Epidemiological Research

In the very early days of occupational health regulation in Japan, the very concept of worker protection provoked considerable opposition from factory owners, making progress quite difficult. In order to overcome this formidable barrier, the government asked Dr. Osamu Ishihara to conduct a wide ranging, year-long fact-finding survey of the prevalence of tuberculosis in rural female migrant workers. The results of his survey were published in a famous report entitled "Female Mill Hands and Tuberculosis," and demonstrably provided the scientific backing required to bring about the enactment of the Factories Act¹⁰. Given the inevitability of opposition from employers to the promotion of occupational health, undertaking such epidemiological research was essential in order to obtain scientific evidence to back government efforts to win over opponents in the course of establishing a proper legal framework.

¹⁰ Kawakami (1965)

3-5 Occupational Health Awareness and Education Campaigns

The systematic organization of occupational health initiatives requires broad awareness and knowledge on the part of all members of society. In 1950, Japan launched the National Industrial Health Week with the objective of increasing awareness and educating the general population about occupational health concepts, with considerable success. Campaigns such as this will also be useful for developing countries in the early stages of initiatives in the field of occupational health issues.

3-6 Occupational Health Measures in Small and Medium-sized Enterprises

Little headway has been made in Japan in the comprehensive implementation of occupational health strategies by small and medium-sized enterprises. The basic problem is that those enterprises are not strong financially, and lack the resources to invest in occupational health. In developing countries also, almost all businesses other than state-owned and foreign-owned companies are thought to fall into this category of financially weak small and medium-sized

concerns. A key issue for these countries will be how their governments can boost and supplement the inadequate resources of such employers in order to raise their levels of occupational health.

Some specific initiatives in this area being implemented in Japan include guidance by occupational health and safety experts in formulating plans, support for health and safety education, and mobile services offering special medical examinations. In addition, through the establishment of regional occupational healthcare centers which provide health consultations and personal visit occupational healthcare guidance, as well as the opening of occupational healthcare promotion centers to provide support for occupational physicians, efforts are being made to expand the number of access points in regional communities to make it easier for local businesses to seek personal advice and guidance. Since it is difficult for small and medium-sized enterprises to rely on their own resources to set up proper occupational health and safety systems, it is incumbent on the government to expand its service delivery network by way of regional bases and mobile on-site services.

Chapter 8

Community-based Health Systems

Following the end of the Second World War, many developing countries sought to provide public health and medical systems established by developed countries and such countries trained healthcare professionals such as doctors and nurses as well as established hospitals and other medical facilities. In practice, however, most of these developing countries found it extremely difficult to develop the target level of resources and personnel due to poverty and insufficiently developed political and social structures. Medical services therefore tended to be limited to urban areas, and accessible only to the well-off minority. Therapeutic and preventive programs for rural villagers, representing the majority of the population, were overlooked, and the overwhelming majority was abandoned to continued poor health.

In 1978, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) issued the "Alma Ata Declaration," stating the global aim of "Health for All by the Year 2000," and proposing the concept of Primary Health Care (PHC). According to the Declaration, "primary health care is essential healthcare based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community a country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination." The 5 general principles of PHC are given as fairness and equality, participation of community cooperatives and individuals, appropriate technology, and a multisector, compound and diversified approach. With the addition of health education, a safe water supply and sanitation facilities, and

provision of necessary medical supplies, activities are proposed in a total of 8 areas. These principles have since been expanded into the new field of "community-based health," concentrating on public health and medical activities within the community, that has been incorporated into a number of assistance programs in developing countries.

At the time when all social resources were in short supply in Japan, immediately following the end of the Second World War, a number of comprehensive initiatives, combining prevention, treatment, care and health education, were conducted at the community level. These initiatives took full advantage of human resources already present within the community, and represent a public health approach characteristically led by local residents, or what is now called a "community-based health" approach. In Okinawa, the archipelago prefecture located at the southernmost part of Japan, and was under administration by the U.S. for 27 years post-war, the shortage of healthcare personnel and facilities was even more dire than in the main islands. The Okinawan experience is of public and private sectors working together in community-based health initiatives, making full use of limited community resources, with cooperation from local residents. This community-based health approach taken in Japan during the period of post-war chaos provides a number of suggestions for assistance to improve the health status of the residents of regions and countries presently lacking in medical resources.

In this chapter, we will introduce Japanese initiatives in the field of community-based health, concentrating on the immediate post-war period, with a number of similarities to present low and middle-income countries, and discuss the implications for developing countries.

1. Trends in Community-based Health Systems

Initiatives in community-based health are strongly influenced by the characteristics and main challenges of the day, the way that the government addresses those challenges, and the way that the local society functions at the time. Compared to other areas, where unique historical divisions can be made, community-based health can be placed in the mainstream of the history of public health and medical services in Japan. We will therefore look at trends in community-based health using the divisions set out in Chapter 1. It can be said that the people looked at the same trends from the community-based health perspective that the government looked at from the public health and medical services perspective. From the above, we will give an overview of Japanese initiatives in community-based health using the divisions set out in Chapter 1, namely the acute infectious disease control phase (1868~1919); the phase of chronic infectious disease control and formation of maternal and child health services (1920~1945); the phase of restructuring the health administration (1946~1960); the phase of expanding medical services (1961~1979); and the phase of challenge of an aging society (1980~present).

1-1 Phase of Acute Infectious Disease Control (1868~1919)

This phase of infectious disease control and maternal and child health measures was a time of

military government, of compulsory initiatives under central control in all administrative areas in Japan, and not just public health. Rather than the mainstay of activities, the people were regarded as the recipients of services provided under instructions from the central administration. The frontline organization for disease control measures, the principal focus of public health measures at this time, was the police. The beginnings of community-based health can be seen in the community at this time, however. In 1886, the Kyoto Nursing School was established at the Doshisha Hospital marked the commencement of nursing education in Japan, and a district nursing system began in 1892. The achievements of the Nursing School are evident in the activities of its alumni¹. Early public health nurse programs did not expand beyond the activities of individuals, however, until the end of the Taisho Era (around 1920)².

1-2 Phase of Chronic Infectious Disease Control and Formation of Maternal and Child Health Services (1920~1945)

The mortality rate from tuberculosis peaked in 1920 (223.7 per 1,000 head of population), and care for tuberculosis sufferers was a major social challenge³. At the same time, the infant mortality rate was extremely high (peaking in 1918 at 189.7 per 1,000 live births), causing major concern. In 1916, the Ministry for Home Affairs established the "Health and Sanitation Research Council"⁴ to survey public health matters such as these. The Council recommended in 1926 that, in order to

¹ Masa SUZUKI, a member of the first graduating class, set up the "Visiting Nurses Association" in 1891 that conducted home nursing and epidemic control measures when infectious diseases were rampant. The Association also worked to introduce and popularize new techniques in areas such as nursing, childraising, cooking and clothes washing line with general healthcare principles. Nobu TERASHIMA, a member of the seventh graduating class, set up the Yuai Yorojin (Home for the Aged) in 1899, that cares for elderly women.

² Oguri, Shiro., Kinoshita, Yasuko and Uchibori, Chiyoko (1985) *Hokehfu no Ayumi to Koshueisei no Rekisi -Koshueisei Jissen Series 2* [The History of Midwives and Public Health -Series of Public Health Practice 2-], Igaku Shoin.

³ At first, each Prefectural Police Department that possessed a Public Health Bureau set up programs employing nurses to make home visits to tuberculosis patients. This is considered by historians to be the beginnings of public health nursing in several prefectures. Nakahara, Toshiko (2003) "*Shashin de Miru Hokenfu Katsudo no Rekishi* [The History of Midwives' Activity in the Pictures]" *Hokenfu Zasshi*, Vol. 59 No. 8 August, 2003, pp. 746-761.

⁴ Established by the government to research the health status of the population, factors that mitigate against their health and how to address those factors, and ways to promote and maintain health.

Table 8-1 Increasing Numbers of Community Public Health Nurses

Month/Year	No. of qualified	No. of unqualified	Total
February 1941	344	—	—
December 1943	2,632	640	3,272
December 1944	5,604	1,568	7,172
December 1945	7,811	1,830	9,641

Source: Uchibori, Chiyoko (1985) p. 157

reduce the infant mortality rate, infant health guidance be established staffed by public health nurses, who would also make home visits to give lifestyle guidance for pregnant women and infants, and conduct disease prevention activities. This led to a number of programs with public health nurses making home visits to provide health guidance⁵, and the establishment of health guidance facilities similar to public health centers⁶.

At this time, the Rockefeller Foundation (a U.S. charitable organization) made donations to the Kyobashi Health Care Center in Kyobashi Ward, Tokyo (opened in 1935) and the Tokorozawa Health Care Center in Tokorozawa City, Saitama Prefecture (opened in 1938). Staffed by doctors and public health nurses, these became the models for public health centers, the Kyobashi Health Care Center acting as a health guidance center for a metropolitan community, and Tokorozawa Health Care Center for a rural community. The Institute of Public Health was also established in 1938 to train public health professionals.

Against the background of the above-mentioned facilities and projects, the Public Health Center Law was enacted in 1937, placing the public health center at the frontline of public health

guidance, and establishing the new profession of the public health center public health nurse. With this new system, the emphasis within the Japanese public health administration changed from management to public health guidance, and the basis for community-based health activities centered on the public health center was formed during this time.

The initial plan was to establish 550 public health centers, with 1,100 branch centers, over a 10 year period, but this failed to eventuate due to the escalation of the war and other factors. As the war progressed, human resources became scarce, and many centers were damaged, public center functions all but obliterated by war's end.

Rural villages were exhausted by agricultural panic, and farming household finances were in a parlous state due to drought and poor harvests. Infant mortality rates were high in rural villages, and the high prevalence of conditions such as parasitic diseases, trachoma and tuberculosis meant the demand for medical services was high, but medical expenses were a tremendous burden that most rural households were unable to bear.

To assist the inhabitants of the Tohoku (northeast Honshu) Region, who had suffered a series of poor harvests, the Tohokukoshin-kai (Tohoku Association for Revitalization)⁷, began a

⁵ Some well-known examples are the Saisei-kai, that conducted nursing home visits following the Great Kanto Earthquake in 1923; the St. Luke International Hospital, that commenced a public health nursing program within the Kyobashi Area of Tokyo in 1927; and the activities of the Osaka Asahi Public Health Nurses' Association, established in 1930.

⁶ Some examples are the Osaka Municipal Child Guidance Center (1919), the Tuberculosis Control Health Guidance Center (1923), the Child Welfare Center (1926), and the Health Insurance Health Guidance Center (1934).

⁷ The Tohokukoshin-kai was officially formed in 1935. Nakahara, Toshiko (2003) "*Shashin de Miru Hokenfu Katsudo no Rekishi* [The History of Midwives' Activity in the Pictures]" *Hokenfu Zasshi*, Vol. 59 No. 8 August, 2003, pp. 746–761.

system of model villages in 1931, to which public health nurses were posted to exterminate trachoma, protect pregnant women, new mothers and infants, and improve levels of nutrition. The Hokkaido branch of the Saisei-kai⁸ set up a district nurse system, training volunteers from doctorless villages, and returning them to act as public health nurses. These projects only reached a small proportion of the needy areas, however, and with the enactment of the National Health Insurance Law in 1938 came the establishment of a system of “national public health nurses,” with public health nurses stationed nationwide, and a nationwide system of public health nurse postings. Public health nurse numbers had increased dramatically (Table 8-1), through training under the aegis of the National Health Insurance Association, an affiliated organization established by the Ministry of Health and Welfare in 1939, and public health programs conducted in poverty-stricken rural villages by industrial associations (now agricultural cooperatives). These associations came up with the following plan: 1) rapid expansion of national health insurance associations (industrial associations acting as agents); 2) expansion of health insurance association hospitals; and 3) stationing of public health nurses. These national public health nurses soon became essential providers of healthcare services in rural and remote areas, conducting maternal and child health and tuberculosis control programs, as well as providing health education and guidance, nutrition advice, midwifery services, and even some simple medical treatments and initial emergency medical services.

In this way, the numbers of public health nurses increased, offering a variety of public health services in both urban and rural settings. At the First National Public Health Nurse Congress was held in 1940, and by the Second Congress the following year, public health nurses expressed the

strong desire for professional recognition. This led to the issue in 1941 of the “Regulation for Public Health Nurse,” establishing a system of accreditation for public health nurses.

1-3 Phase of Restructuring the Health Administration (1946~1960)

The immediate post-war period was a chaotic period in the field of public health as in other areas, with malnutrition caused by poor hygiene and food shortages, the advent of a baby boom, and outbreaks of infectious diseases brought back by those returning from overseas. In 1947, the Japanese infant mortality rate was 76.7 per 1,000 live births, and the tuberculosis mortality rate was 187.2 per 100,000 head of population, making tuberculosis the leading cause of death, a situation similar to that seen in developing countries today. By 1960, the infant mortality rate was less than half that in 1947, at 30.7 per 1,000 live births, and the tuberculosis mortality rate had dropped dramatically to 30.2 per 100,000 head of population, representing a significant improvement in health standards over a short period. This can be attributed in part to overall improvements in Japan's socioeconomic situation and educational standards, and medical advances. As Japanese society entered a period of stability after the post-war chaos, a large part of its public health successes were due to the establishment of a system of public health administration, expansion of the network of public health centers, development and spread of community-based health activities initiated by community organizations, and programs conducted in the community by public health nurses and others acting as members of the public health administration.

Commencing immediately after war's end in 1945, fundamental reform of public health administration was conducted under GHQ supervision. Following the reform of the Ministry

⁸ *The Onshi Zaidan Saiseikai* (Imperial Gift Foundation Saisei Association) was established in 1911 through an endowment from Emperor Meiji. It became an incorporated social welfare organization in 1952, and now has branches throughout Japan and runs a number of hospitals and other medical facilities.

of Health and Welfare administration in May 1946, and revisions to the Local Government Law in 1947, independent Health Departments were established to oversee public health administration in each prefecture. The new Public Health Center Law was then enacted in September 1947, placing public health centers in the frontline of public health, combining guidance and administrative responsibilities under the one roof. The network of public health centers was expanded, aiming for one center for every 100,000 people. “Guidelines for Guidance Activities by Public Health Centers” were issued in 1949, giving public health center managers the responsibility for the deployment, working conditions, and guidance of public health nurses within the municipality served by the center.

With these measures, the public health system extending from the center to the periphery, comprising national government (Ministry of Health and Welfare), prefectures (public health centers), and municipalities, was established. Public health centers became the central facilities for public health services, responsible for improving the health of the community.

A number of other health-related laws were passed in 1947, including the Tuberculosis Prevention Law, the Labour Standards Law that provided the base for occupational health and safety, and the Child Welfare Law as the base for maternal and child health programs. The Tuberculosis Control Law underwent a complete overhaul in 1951, radically expanding the role of public health centers. “Tuberculosis Advisory Committees” were set up within public health centers to ensure tuberculosis control programs were consistent and comprehensive, monitoring the identification of cases, evaluating different treatments, and following cases until cured. The duties of public health nurses were revised in 1951 to ensure that no inconsistencies arose in guidance given to tuberculosis sufferers and their families. Public health centers formulated plans for the deployment of public health nurses

under their jurisdiction (if necessary, public health nurses were sent on resident postings to towns and villages), and communications were strengthened between public health centers and public health nurses posted to municipalities within their catchment area.

A succession of further health-related laws were enacted at this time, including the School Health Law, the Preventive Vaccination Law, the Eugenic Protection Law, the Law for Public Health Nurses, Midwives and Nurses, the Daily Life Protection Law, and the Disabled Persons Protection Law. Community-based health activities were conducted, based on this remarkable series of legislative achievements, centered on the public health center as the specialist public health facility. In particular, public health centers played a major role in improving maternal and child health and controlling tuberculosis. Total expenditure related to public health centers reached ¥13.1 billion in FY 1958, accounting for 23.5% of the total health budget, and reflecting the importance placed on community-based health⁹.

In accordance with the GHQ preference for local government, it was announced that the responsibility for all public health centers should be handed over to the relevant municipality. In practice, however, only public health centers in cities with a population over 150,000 people were transferred to local government control.

1-4 Phase of Expanding Medical Services (1961~1979)

As Japan entered the 1960s, lifestyle-related diseases replaced infectious diseases and maternal and child health as the major challenge for public health and medical services. The achievement of universal health insurance coverage in 1961 also led to a massive increase in the demand for medical services, requiring a sudden expansion of the system of medical service provision to meet this demand. Public health centers, which had

⁹ The Ministry of Health and Welfare (1963) Annual Report on Health and Welfare.

Box 8-1 The 1960s: Time of Transformation for Public Health Centers

As the frontline facility responsible for the health of the nation, until the 1960s public health centers played a central role in tuberculosis control and maternal and child health programs. As Japan entered the 1960s, it was already evident that demand would increase for services related to maternal and child health, mental health, and lifestyle-related diseases, and in urban areas for services related to environmental sanitation¹⁰.

As preparations were made to expand public health administration to meet increased demand, regional financial constraints resulted in personnel shortages from the early 1950s. Changes in public health center catchment areas following the 1953 Municipality Merger Promotion Law also necessitated re-evaluation of center placements. The Social Security System Committee issued its "Recommendations Concerning the Medical Insurance" in 1956, emphasizing the connections between public health and medical services¹¹. The great strides in medical insurance made through the introduction of universal health insurance coverage in 1961 led to a reconsideration of the way public health centers should operate¹². As a result, from 1960 instead of the previous uniform population-based distribution of one public health center for every 100,000 people, public health centers were classified into 5 types: urban type; rural, mountain or fishing village type; intermediate type; underpopulated region type; and special type. Each public health center thereupon reorganized its activities to reflect the local character. The breakdown as of April 1961 was: urban type 24%; rural, mountain or fishing village type 53%; intermediate type 10%; and under-populated region type 12%. For urban-type public health centers, the emphasis was placed on collaboration with medical, welfare, industrial and cultural resources within the center catchment area, and entrusting as many public health activities to them as possible. For rural, mountain or fishing village-type public health centers, to compensate for the lack of medical facilities the emphasis was placed on reinforcing outreach services, programs for diseases endemic to rural villages, extermination of environmental pests, and environmental sanitation programs, and promoting the activities of local organizations. There was accordingly a clear distinction between the two types¹³.

The 1965 revision to the Local Government Law transferred responsibility for some of the functions of public health centers (routine immunizations, tuberculosis screening for local residents, rodent and insect pest extermination, issue of Maternal and Child Handbooks, etc.) to the municipalities. Almost all the remaining administrative duties were transferred in 1975. From 1978, municipal health centers were established as administrative facilities separate to the public health centers, as a base for personal health services close to the community. By the end of the year 2000, some 2,364 of the new centers had been established nationwide. The enactment of the "Community Health Law" in 1994 provided the legislative basis for these municipal health centers, making them the facilities responsible for the provision of personal health services in place of public health centers.

¹⁰ The Ministry of Health and Welfare (1963) Annual Report on Health and Welfare.

¹¹ The Ministry of Health and Welfare (1988b) *Kosei-sho Goju Nen Shi* [Fifty Year's History, Ministry of Health and Welfare] Kosei Mondai Kenkyukai.

¹² The Ministry of Health and Welfare (1960) Annual Report on Health and Welfare.

¹³ The Ministry of Health and Welfare (1963) Annual Report on Health and Welfare.

served as the base for community-based health approach since the post-war reconstruction period, were also faced with the necessity to reexamine their way of operating in the face of tight regional finances and personnel shortages¹⁴. As a result, from 1960 public health centers were classified into 5 types: urban-type; rural, mountain or fishing village-type; intermediate-type; under-populated region-type; and special-type. Each public health center was thereupon reorganized to reflect the local character (see Box 8-1). The role of the public health center was reduced in urban areas with adequate medical facilities, whereas in rural areas lacking in medical facilities, the continuing function of the public health center as the central provider of medical and public health services was reinforced. Through amendments to the Local Government Law in 1965 and again in 1975, jurisdiction for public health centers was transferred in stages to the municipalities. The 1978 “National Health Promotion Campaign” led to the establishment of Municipal Public Health Centers, with public health nurses taking on the central role in health promotion campaigns. This completed the transfer of public health nurses from national government employ to local government, marking the end of 40 years of national public health nurses, and the beginning of the system of exclusive municipal public health nurses.

Associated with the advent of advanced economic growth, the demands and concerns of the general public turned from the community-based health approach, that had been so spectacularly successful before and after the war, to a more specialized and diversified medical approach. Revisions to the “Welfare for the Aged Law” in 1963, and to the “Mental Health Law” in 1965, added responsibility for the physical and mental health of elderly residents to public health centers, however, so there was certainly no lessening of the functions demanded of public health centers.

1-5 Phase of Challenge of an Aging Society (1980~present)

Japan became one of the longest-lived countries in the world in 1985 when the average life expectancy for women exceeded 80 years. Around the same time, however, the declining birthrate and aging of society, increase in lifestyle-related diseases (malignancies became the number one cause of death in 1981), the rising costs of new medical treatments and increased treatment durations, all contributed to increased medical expenditure with inevitable social consequences.

Japan’s economic development also slowed during the 1980s, making the efficient utilization of limited medical resources even more important. The 1985 revisions to the Medical Service Law made it mandatory for each prefecture to formulate a medical services plan (including the provision of a secondary medical services within reach of people in their everyday lives, and provision of sufficient hospital beds for each region).

The progressive aging of society increased the importance of collaboration between public health, medical and welfare services at the community level in the provision of care for the elderly. The “Ten Year Strategy for Promotion of Health and Welfare Services for the Aged” (also known as the Gold Plan) was adopted in 1989, making it compulsory for each municipality to formulate a plan for the health and welfare of their aged residents by the year 1993.

The advent of the 1990s brought a prolonged economic downturn, triggered by the collapse of the bubble economy. It also brought a major wave of decentralization, including the abolition of the Public Health Center Law and its replacement by the “Community Health Law” in 1994. The new law specified public health centers as the broadly based, specialized, and technical bases for community-based health. Personal

¹⁴ The Ministry of Health and Welfare (1960) Annual Report on Health and Welfare.

services (such as immunizations and maternal and infant health checks), that had previously been the responsibility of public health centers, were transferred to the new “municipal health centers,” under the jurisdiction of local governments close to the people.

With this intensification of the duties of public health centers, and apportionment of some duties to the new municipal health centers, public health centers underwent streamlining and rationalization from the late 1990s. Their numbers have dropped from 852 in April 1991 to 576 in April 2003. Revisions to the “Maternal and Child Health Law” in 1994 also basic maternal and child health services transferred to the municipalities in April 1997. In other words, decentralization finally came to the field of public health and medical services during this period.

The late 1990s also saw the emergence of the concepts of quality of life and normalization, and the way of thinking that a disability should not prevent people from living in familiar surroundings. Most recently, care for the elderly and disabled has been more home-based rather than institution-based, even in the final stages. Home-based care has become increasingly necessary in many fields, raising the demand for a community-based health approach, providing holistic care within the community, making use of community resources. Even when medical institutions recommend diet and exercise programs to patients with lifestyle-related diseases, few actually comply, and the results of outreach programs are being examined in this area. These include initiatives where the medical institution notifies municipal public health nurses and dietitians when a patient is diagnosed, and they provide continued and holistic care, such as through home visits¹⁵. Another involves home visits for dietary guidance by diet improvement extension workers (shokkai-san), employed by

many local governments (see Box 8-5). From the above, we can see that the community-based health approach is undergoing something of a revival at present.

2. Main Initiatives in Community-based Health

In this essay, we will first identify the major players in community-based health, how they were involved in which initiatives, and summarize their characteristic features. When we consider the field of community-based health, we cannot simply express their characteristic features in terms of the principal players alone, but need to consider what dynamics worked in what combination to achieve the overall results. As the name implies, initiatives in community-based health will vary widely between communities, making it difficult to classify community-based health as a whole. We will therefore present three well-known examples of successful community-based health initiatives, and through them describe the dynamism of community-based health overall. We will then discuss dynamics and their mechanisms that come to play in community-based health. There are few prior studies in this area, as they are difficult to conduct, so we hope to illuminate a part of this area.

2-1 Principal Players in the Community-based Health Field

Players who have fulfilled important roles in Japanese community-based health include public health centers, public health nurses, local resident groups, and livelihood extension workers. The way in which these players engaged in community-based health programs in collaboration with each other is a common factor in many regions. This allows us to know what is an

¹⁵ Fujiuchi, Shuji (2003) “*Koshueisei to Primary Health Care no Kyodo* [Collaboration of Public Health and Primary Health Care],” *Koshueisei* [Public Health], Vol. 67 No. 8 August 2003, pp. 17–21.

Table 8-2 History of Community-based Health

Year	Policy, movements in community-based health	Trends in society
1892	District nursing commenced by Doshisha Hospital	
1898	Introduction of School Physician System	
1900	Introduction of School Nurse System	
1909		Extremely poor harvest in Tohoku Region
1914		Commencement of First World War
1916		Establishment of Health and Sanitation Research Committee
1918	District nursing commenced by Tokyo Municipality	Rice Riots in Toyama Prefecture
1919		First World War ends
1920	Enactment of School Doctor Regulations	
1922	Commencement training in disaster nursing at Nisseki (Japan Red Cross)	Community Health Law enacted
1923	Tokyo establishes Child Health Centers; Imperial Gift Foundation Saisei-kai commences nursing home visits	Great Kanto Earthquake
1924	Osaka City commences district nursing program	
1927	St. Luke International Hospital commences a public health nursing program, also sets up a training project	
1928	Commencement of social work nurse training at Nisseki (Japan Red Cross)	
1929		Great Stock Market Crash
1930	Osaka Asahi Newspaper Social Foundation and Public Health Nurses' Association established	Showa Crash
1934		Boshi Aiiku-kai (Aiiku Association) formed
1935	Foundation of Tohokukoshin-kai (Tohoku Association for Revitalization) (social work nurse program) Kyobashi Public Health Center established (Rockefeller Foundation)	
1936	Yamagata Prefecture, resident posting system for social work nurses	
1937	Implementation of Health Center Law→birth of "Public Health Nurse"	
1938	National Health Insurance Law enacted→birth of "Community Public Health Nurse" Institute of Public Health established (Rockefeller Foundation) Tokorozawa Public Health Center established (Rockefeller Foundation)	National Mobilization Law enacted Ministry of Health and Welfare established
1939		One-third of municipalities doctorless Commencement of Second World War
1940	Research Institute of Health Science commences public health nurse training	<Period of "Healthy Soldier, Healthy People"> National Physical Strength Law enacted
1941	Public Health Nurse Regulations enacted→establishment of public health nursing as a profession	
1942	First accreditation examinations for public health nurses	Commencement of Mother's Handbook System
1945		Second World War ends
1947	New Public Health Center Law enacted Law concerning Public Health Nurses, Nurse Midwives and Nurses promulgated Program of public health nurse postings to frontier areas (Ministry of Agriculture, Forests and Fishery)	1947-49 First Baby Boom Reconstruction of National Health Insurance Scheme commences
1948	All public health administration transferred from Police Departments to public health centers Suginami Public Health Center established as first model public health center	Preventive Vaccination Law enacted
1951		Cerebrovascular disease replaces tuberculosis as number one cause of death Tuberculosis Prevention Law revised
1953	Public Health Center Managers Association formed (partial revision of Public Health Center Law)	
1955	"No Mosquitoes and Flies Program" initiated by local public health groups	The number of abortions reaches a peak nationwide
1956		Economic White Paper "It's not post-war any more"
1958	School Health Law enacted Maternal and child health centers established	
1960	Classification of public health centers into 5 types	Ikeda Cabinet announces "National Income Doubling Program" Institutional births exceed 50%
1961		Universal medical care insurance System achieved
1965	Revision of Mental Health Law; public health centers become frontline public health facilities	Local Government Law revised
1968		Maternity and Child Health Promoter system introduced
1975		Local Government Law revised
1978	National public health centers transferred to municipalities Municipal public health centers established	"Alma Ata Declaration" by WHO and UNICEF
1982	Law for Health and Medical Services for the Elderly passed	
1985		Medical Services Law revised; Medical policy formulation
1989	Ten Year Strategy for Promotion of Health and Welfare Services for the Aged announced	
1993	Completion by municipalities of health and welfare plans for the Elderly	
1994	Community Health Law enacted	
1997	Community Health Law fully implemented	
2000		Long-term Care Insurance System implemented

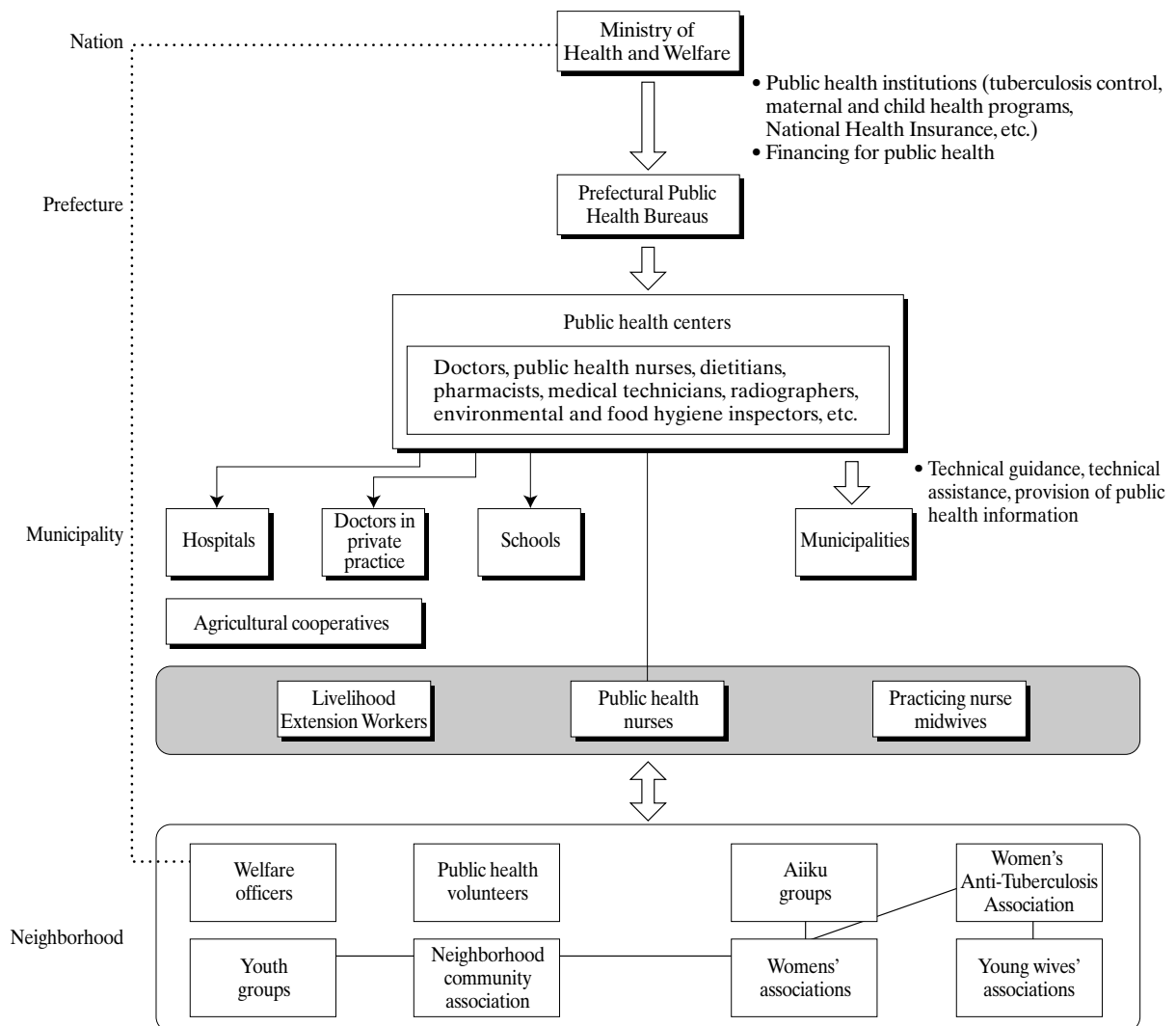
average sort of community-based health initiative in Japan. In the following pages, we will introduce some initiatives through the major player involved.

2-1-1 Community-based Health Network Centered on the Public Health Center

The network of public health centers had reached a certain level before the war, but it only began to function on a nationwide scale post-war. It has a distinctive axis of public health administration, extending from nation to prefecture (public health center) to municipality, with the public health center positioned as the

terminal facility (see Figure 8-1). Public health centers planned and conducted prefectural public health and medical policy, as external organs of the prefectural public health bureaus, and at the same time supervised and guided municipalities and medical institutions. The functions of public health centers were broadly divided into “personal public health services” (public health education, guidance, health checks, and immunizations, provided directly to residents), and “non-personal public health services” (regulation and guidance related to the environment, pharmaceuticals, food and drink, and animals, as well as prevention, and response

Figure 8-1 Diagram of Community-based Public Health Services Based on the Public Health Centre (Late 1940's)



Source: Based on Moriguchi, Ikuko (2003) p. 32

to outbreaks of, infectious diseases). To make public health activities in both of these areas possible, public health centers were provided with the necessary funding, equipment, and specialist personnel (doctors, pharmacists, public health nurses, dietitians, medical technicians, radiographers, dentists, environmental and food hygiene inspectors, etc.)¹⁶. Personal services provided by public health centers included tuberculosis control programs, maternal and child health activities, and nutritional guidance. Non-personal services included food hygiene testing and surveillance, and hygiene education. A major characteristic of Japanese public health centers is that they sought to raise public health standards through both personal and non-personal service provision.

Collaboration with a variety of other organizations and facilities is another characteristic of Japanese public health centers (see Figure 8-1). Collaboration with medical facilities was essential, as doctors in private practice in the community were the main providers of medical services. Patients identified by public health centers as requiring medical treatment would be referred to local medical facilities. Opening up the investigation facilities of the public health centers for use by doctors, dentists and pharmacists further promoted collaboration between public health centers and local healthcare providers.

“Tuberculosis Advisory Committees” were set up in each public health center (see Chapter 5), to provide centralized monitoring of screening, treatment and post-discharge follow-up. The Committees brought about improvements in the quality of treatment by doctors in private practice, ensured that each patient was monitored thoroughly, transferred patients requiring long-term treatment to large public hospitals or tuberculosis sanatoria, and took responsibility for their post-discharge aftercare.

High priority was also given to collaboration with schools, with regular meetings held with school principals, school doctors, and other parties

involved in school health in each public health center district, at which public health centers provided technical guidance regarding school meals, for example. After the unification of municipal public health programs and public health facilities for national health insurance following the 1948 revisions to the National Health Law, public health centers became the site for meetings and training for national public health nurses. The National Public Health Center Managers Association was then formed in 1946 to improve cooperation between public health centers. Although public health centers did conduct their own programs, it can be said that they played an even greater role in promoting and facilitating activities by other agencies within their area.

With guidance from GHQ, the Ministry of Health and Welfare established model public health centers, to serve as an example for other public health centers around the country of how they should be outfitted and managed. Starting with the Sugunami Public Health Center in Tokyo in 1948, as a rule one model public health center was established in each prefecture.

2-1-2 Outreach Activities by Public Health Nurses

Influenced by public health nurses in the U.S., from the late 1920s community-based health activities, including outreach programs in tuberculosis control and maternal and child health, were performed in Tokyo and Osaka by “public health nurses,” “social work nurses” and “social work public health nurses.” Industrial associations and national health insurance cooperatives in rural villages and remote areas lacking in medical facilities also employed public health nurses, who fulfilled an important role in community-based public health and medical programs (see Box 8-2).

Through the post-war period of chaos, the focus in community-based health gradually shifted to chronic infectious disease control and maternal and child health guidance. The activities of public health nurses activities expanded in response to the needs of the community, encompassing group screening

¹⁶ The placement of personnel varied between public health centers, and also changed over time.

for the early detection of tuberculosis, home visits for guidance to patients, parasitic disease control, infant health checks in response to the post-war baby boom, and family planning guidance.

In particular, public health nurses attached to municipalities, mainly national public health nurses, faced many demands as the only healthcare professionals in post-war doctorless villages in rural villages and remote areas. They were obliged to set

forth at any time day or night, no matter how inclement the weather, and often had to perform medical treatments by necessity. Through home visits, health guidance, and health education activities, they gained a thorough understanding of health problems facing the community, and engaged in public health programs with the support of community organizations such as women's groups, young wives' associations, and youth groups.

Box 8-2 Public Health Nurse Activities in Remote Regions

Public health nurse activities posted to rural and remote regions often found themselves working in doctorless villages, meaning they had to respond day and night to the demands of the villagers and settlers. The diaries of many of these nurses tell of the difficult early days of their postings to doctorless villages in great need of first aid and midwifery services, and of being forced to provide treatment exceeding that provided for the Medical Services Law. Public health nurses then turned their attention to the living conditions of the community, that could not be resolved with temporary, makeshift medical services. Rural villages, remote regions, and frontier areas were faced with "problems that needed to be solved before public health guidance could be given." These included a number of serious lifestyle issues, including obtaining the necessary nutrition, ensuring a safe water supply, local roads, prevention of a "high birthrate, high mortality rate" situation, improvement of conservative thinking by husbands and mothers-in-law, the health of women suffering from overwork, and a hygienic living environment and lifestyle. Public health nurse activities were said to "start by walking in their shoes," with the emphasis on providing guidance from the standpoint of sharing the same lifestyle as other members of the community. Their activities naturally became practical, realistic, and varied, aimed squarely at the lifestyle issues faced by the community. Activity reports from this period contain many examples of collaborations with the local mayors, local government officials, agricultural extension workers, livelihood extension workers, community center officers, and teachers.

In rural villages, remote regions, and frontier areas, public health nurse activities gradually came increasingly into conflict with male-centered thinking, and conservative thinking of mothers-in-law. In order to protect the health of children, and of mothers subjected to a harsh lifestyle, they conducted programs on a more organized basis. The diary of one public health nurse says, "I tried to encourage 'farmers that think'" in activities in rural villages. Public health nurses in general worked with local women's groups, and women's sections of settler cooperatives, forming independent study groups and conducting surveys. Worthy of note are their efforts in bringing about changes in health indices in the community, and evaluating results, always based on statistical information. Through activities such as these, public health nurses forged strong links and a relationship of trust with the community, contributing to the results they achieved.

Source: Produced by Yasuhide Nakamura, the chairperson of this research group, based on Sakamoto, Mariko (2003) "*Hokenfu no Keiken wo Tojokoku ni Katsuyo Surutameno Hosaku ni Kansuru Kenkyu* [Research on the Strategy to Utilize the Midwives' Experience for Developing Countries]," Grant-in-Aid for Scientific Research by the Ministry of Health, Labour and Welfare, (Research Project on International Cooperation in the field of Social Security), Buntan Kenkyu Hokokusho.

Moriguchi (2003) classifies the roles of public health nurses in rural villages at this time into: 1) direct care provider; 2) determining the overall health problems of the community, and developing programs to meet those needs; 3) acting as contact point between administration and residents, forming a cooperative relationship involving both parties; and 4) continue activities to develop local treatment, prevention programs and activity of community involvement. Before the war, municipal public health nurses tended to “fight a lonely battle,” but collaboration with public health centers and public health center public health nurses strengthened after the war.

2-1-3 Community-based Health Activities Undertaken by Community Groups

By order of the GHQ, all community organizations such as public health cooperatives¹⁷ and neighborhood associations¹⁸ were abolished. Residents of communities ravaged by war, struggling with outbreaks of infectious diseases, food shortages, and inflation, promptly formed new community groups for self protection. The first of these began in 1946~47 in rural and mountain villages in Hokkaido

and the Tohoku and Hokuriku Regions of Honshu, at the time menaced by outbreaks of infectious diseases such as dysentery and Japanese Encephalitis. Villages banded together to exterminate environmental pests and improve sanitation. The hygiene and sanitation programs run by these villagers were effective in not only controlling disease, but also improved their living environment and the productivity of their farms, thereby improving the lifestyles of the entire village. Successful examples were widely publicized by newspapers and radio, becoming known as “People’s Organization Activities,” and were the focus of attention throughout the war-ravaged country¹⁹.

From around 1949~50, a “No Mosquitoes and Flies Program” was conducted by “Community-based Health Organizations,”²⁰ composed of volunteers from the local community. From 1949, the Ministry of Health and Welfare devised a plan to conduct eradication activities based on these community organizations, established model neighborhoods in each prefecture, and promoted the expansion of the program²¹. The “Communicable Disease Prevention Law” was revised in 1954 to give further impetus to the

¹⁷ Community organizations dating back to 1887, specified in the Communicable Disease Prevention Law with the aim of introducing public health concepts into daily life.

¹⁸ Set up during wartime as an administrative unit at the neighborhood level, to issue rations of food and other necessities, as well as government bonds and savings, take delivery of goods for the war effort, and mobilize residents for war work, sending and greeting soldiers, and air raid drills.

¹⁹ The Ministry of Health and Welfare (1988a) *Kosei-sho Goju Nen Shi (Kijutsu hen)* [Fifty Year’s History, Ministry of Health and Welfare (descriptive version)] Kosei Mondai Kenkyukai.

²⁰ In 1953, the Ministry of Health and Welfare standardized “people’s organization activities” as “community-based health organization activities.”

²¹ These campaign were led by individuals resident in the local community (e.g. hamlet, village, town), and were characterized by a number of organizations and institutions present in the community (women’s groups, youth groups, children’s groups, 4H clubs, schools and factories) working together in a planned and organized manner towards a common goal. Extermination of flies and mosquitoes requires a relatively high level of specialized knowledge and expertise, so the public health center responsible for that areas provided technical guidance, including surveys of fly and mosquito breeding sites, generation of protocols, actual eradication, and evaluation of results. Municipalities assisted with funding and the provision of facilities. Hashimoto, Masami (1955) *Koshueisei to Soshiki Katsudo* [Public Health and Organizational Activities] Seishin Shobo.

²² Municipalities became responsible for the extermination of rats, mice, and insect pests after a partial revision to the “Communicable Disease Prevention Law” in 1922. As the burden was great on smaller municipalities in terms of finances and technical ability, from 1950 municipalities with a population of 113,000 or more retained responsibility for pest control, but for municipalities with a population of less than 113,000, the prefecture became responsible for extermination programs. The 1954 amendments to the Law provided for: a) said extermination programs were again entirely the responsibility of the municipalities; and b) the prefectural governments were responsible for the formulation of plans for extermination programs, overseeing their implementation, and any other necessary activities. In effect, these amendments returned pest control to the municipalities, the organizations closest to the community-based health organizations.

Box 8-3 Results of the “No Mosquitoes and Flies Program”

Hashimoto (1955) suggests that the results of the “No Mosquitoes and Flies Program” were many and varied, and that recognition of these results by the community spread the program nationwide “like a contagious disease.” Excerpts from the effects of the program as identified by Hashimoto are given below

1. Public Health Aspects

- 1) It was not simply a matter of life became easier without flies and mosquitoes. Dirty, unhygienic and unsanitary breeding places for flies and mosquitoes, such as puddles, toilets, rubbish bins, piles of fertilizer, animal pens, and compost heaps, were cleaned up to the extent that it became difficult to find somewhere to throw away cigarette butts. (Environmental hygiene effect)
- 2) The reduction in infectious diseases mediated by flies and mosquitoes, especially dysentery, was remarkable. Reductions in gastroenteritis in the newborn were also widely reported. (Preventive hygiene effect)
- 3) This program required an appropriate level of knowledge, technical skill, and in particular organized action on the part of the local community. The results were readily apparent and could be appreciated by everyone, so this program resulted not only in the extermination of flies and mosquitoes, but also had a salutary educational effect for public health in general, increasing the rates of handwashing and immunizations as well. (Public health education effect)

2. Home Economic Aspects

- 1) The costs previously incurred due to flies and mosquitoes by the average household, approximately ¥1,000 per year, were no longer incurred.
- 2) Livestock diseases were reduced, and their weights increased. At the same time, to reduce the feed cost by about 20% for letting livestock to eat in a more leisurely fashion.
- 3) The reduced human disease burden meant that medical expenses were significantly reduced for households and for the village.

3. Educational (Character Building) Aspects

Promotion of this campaign had effects beyond the above-mentioned public health education aspects. It raised community spirit, led to overall lifestyle improvements, and markedly increased the desire for development and improvement of local society. The following effects were reported:

- 1) It is an excellent theme for a wholesome youth movement and leadership training (there were reports of youths no longer going out at night, and deserted pachinko parlors).
- 2) More people paid their taxes, as they could see them at work.
- 3) Our village has been divided into 2 factions for many years, but this campaign has allowed them to make peace.

4. Productivity Aspects

- 1) Reduced levels of disease, and increased weight, in cattle, horses, goats, pigs, etc. Better productivity from cattle and horses.
- 2) Increased production of cow's milk, goat's milk, and (chicken) eggs (approximately 20% increase/year)

Source: Hashimoto, Masami (1955) *Koshuisei to Soshiki Katsudo* [Public Health and Organizational Activities] Seishin Shobo. pp. 25–26.

activities of these community organizations²². As a result, the number of model neighborhoods expanded rapidly, from less than 50 in 1949, to around 3,500 in 1954 (covering 8 million people, or 10% of the population). Based on the results achieved in these model neighborhoods, the government decided in June 1955 to extend the “No Mosquitoes and Flies Program” nationwide over the ensuing 3 years. The activities of the community-based health organizations were given a considerable boost by this decision, and with the aid of the mass media, this program, that had commenced in rural villages, extended to Tokyo and other major cities²³. This program had a number of flow-on effects, beyond just the public health benefits, including character forming, improved household finances, and improved farm productivity (see Box 8-3).

In addition to community activities related to environmental sanitation in rural and mountain villages, in urban areas public health centers encouraged the formation of community movements, that conducted a broad range of public health activities (see Box 8-4). Some typical examples are the Mothers and Children Groups in the cities of Suita and Toyonaka, both commenced in 1950, that conducted programs related to the health of mothers and children. These Groups undertook a broad range of initiatives in areas including maternal and child health, improved nutrition, and improved sanitation, characterized by close collaboration with the local medical and dental associations, national health insurance providers, and community centers. As a result of the activities of these pioneering Mothers and Children Groups, in 1954 the “Osaka Prefectural Public Health Womens’ Service Association” was formed from the 150 Mothers and Children Groups in the Osaka area²⁴.

Following on from the above campaigns, a variety of public health themes were taken up by community organizations. In 1955, there were 10,924 community-based health organizations active in Japan. The themes of their activities were as follows: environmental sanitation (78.8%), infectious disease control (14.1%), maternal and child health (8.9%), improved nutrition (7.9%), family planning (6.7%), tuberculosis control (5.1%), parasitic disease control (4.1%), and oral hygiene (1.2%)²⁵.

2-1-4 Community Health Activities Undertaken by Livelihood Extension Workers

Hand in hand with various major legislative measures introduced concerning the public health and medical system in post-war Japan, at the behest of GHQ and as part of the “democratization of rural villages,” three major post-war rural reforms were carried out: strong action towards agrarian land reform, the creation towards agricultural cooperatives, and the introduction of the rural livelihood improvement movement. The aim of this movement, introduced under the Rural Livelihood Improvement Law of 1948, was to “improve life in farming villages and train smarter farmers” through the spread of scientific expertise and knowledge about agriculture and living conditions in farming communities. Under this Law, rural livelihood improvement centers were set up in all prefectures of Japan, and two types of extension workers were appointed: agricultural extension workers, most of whom were men and who were responsible for providing guidance in agricultural techniques; and livelihood extension workers, all of whom were women and who were responsible for providing guidance on how to improve living standards in farming communities. Known more familiarly as “*Nokai-san*” (Mr. Better Farms) and “*Seikai-san*” (Mrs. Better Lives), they

²³ The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Year’s History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai.

²⁴ *ibid.*

²⁵ *ibid.*

**Box 8-4 Community-based Health Initiatives Centered on an Urban Public Health Center:
Toyonaka Public Health Center**

Given its distance of around 12.5 kilometers, or about twenty minutes by train, from downtown Osaka, Toyonaka City, a municipality adjoining Osaka City's northern border, is a typical satellite city that developed as a dormitory suburb for people with jobs in the offices and factories to its south. With the designation of the Toyonaka Public Health Center as a model public health center in 1948, its personnel and organization were expanded and the existing facilities were enlarged with the active support of the Toyonaka Municipal Government. As a result, its functions as a public health center were expanded, and its target activities spread into public health education. At the time, public health centers conducted primarily practical projects such as tuberculosis screening and maternal and child health guidance, and there were few public health centers that actively engaged in health education as part of their activities.

In 1949 Toyonaka Public Health Center drew up a "Three-Year Plan for Health Education." This was the master plan for its comprehensive and organized promotion of public health campaigns. The Plan's principal objects included setting up a framework within the Center for conducting organized activities; gathering basic data and conducting basic surveys to elucidate the particular characteristics of the region under the Center's jurisdiction; identifying different social resources; publicity campaigns to encourage various elements to organize. In addition, to promote health education, efforts were made to organize and train the community, with the idea that "if all residents in the Center's catchment area are to be the target audience for health education, then community organizations must also be active throughout the catchment area, and moreover must have the enthusiastic backing of the residents themselves." By the end of this three-year preparation stage, organic community health activities had been developed by existing organizations (such as medical and dental associations), and by various newly organized community groups, in collaboration with the Public Health Center. These activities can be outlined as follows.

The Toyonaka Mothers and Children Group, made up of mothers who were clients of the Toyonaka Public Health Center and by housewives in the neighborhood, actively assisted in the Babies Group and Mothers' Classroom, through which the Center provided birth and childcare guidance for expectant mothers. This Group also held film sessions, lectures, and nutritional cooking classes. It also worked actively with the Center on seasonal events such as Sanitation Week in April and the Summer Health Improvement Campaign, and Sexually Transmitted Disease Prevention Events and Tuberculosis Control Week in September.

A variety of school health measures were undertaken in Toyonaka, including the establishment of health education as a part of the school curriculum by the School Health Promotion Association, a body formed with the participation of organizations involved in school health such as public health centers, boards of education, and medical and dental associations. In addition, this Association set up subcommittees (including tuberculosis control, oral hygiene, environmental sanitation, parasitic disease control, and eye care), which provided specialist guidance and promoted surveys and research with the assistance of the relevant organizations.

The Public Health Association, made up of Toyonaka businesses with an interest in food and environmental sanitation, with the assistance of the Center provided health education to their employees through in-house voluntary management guidance and through their businesses. The Association also established a food hygiene promotion committee, whose aim was to raise

awareness in businesses and consumers, and to encourage strict compliance with hygiene practices such as washing hands before preparing food, to prevent food poisoning. In addition, once a year it also gave commendations for the best stores and facilities within the Center's catchment area, and also conducted study tours of model food factories and facilities in neighboring prefectures.

The Infant Health Promotion Association, made up of individuals with an involvement in kindergartens and child care centers, and the Infant Research Group, a specialist organization which conducted specialist research of infant health issues, were pioneers in Japan with a number of infant health initiatives.

Hygiene education was also conducted as part of the community education activities conducted by education research institutes, libraries, and community centers in Toyonaka City. In addition, for areas whose distance from the Center denied them easy access to its services, ground-breaking innovations were also trialed, such as a resident posting system for public health nurses.

From the above, activities were promoted that placed the emphasis on education campaigns centered around the Toyonaka Public Health Center. Comprehensive public health activities were conducted, for the particular area of health to be treated and for the particular age group targeted, by a wide variety of community groups and other organizations. Probably the most striking feature of this experiment was that success was achieved, in a new town where people had very few local ties or extended family, through community-based health activities that got started by creating community groups.

Source: Hashimoto, Masami (1968) *Chiiki Hoken Katsudo - Koshueisei to Gyosei-gaku no Tachiba kara* [Community Health Activities – From the Standpoint of Public Health and Public Administration], Igaku Shoin., and Dai-Ichi Mutual Life Insurance Company (1969) *Hoken Bunkasho 20-nen no Ayumi* [Progress for 20 Years of Insurance Culture Awards], Daiichi Seimei Hoken Sougo Kaisha.,

both helped to raise the standard of living in rural communities, but in terms of community-based health, the results achieved by Seikai-san are better known.

Women with qualifications as teachers or nutritionists were recruited as *Seikai-san*. After training in the participatory problem solving method recommended by GHQ, with dedication and creativity they devoted their efforts to improving the day-to-day lives of farming families, improvising and making the most use of existing resources from the same viewpoint as the wife in the family. Liaising closely with agricultural extension centers, local government officials, public health centers and public health nurses, paying heed to the concerns of village officials and other influential figures and elders in the community, and by working through the village's network of women's groups and lifestyle improvement groups, livelihood extension workers undertook activities to improve the standard of living of the local residents, through initiatives that contributed to a broad improvement

in health and sanitation. Examples of such activities were improving residential infrastructure (better ovens, kitchens, water supply facilities, and baths); improving diets (using preserved foods and preparing communal meals during busy farming periods, and raising small livestock); communal eradication of flies and mosquitoes; health education (cutting down on excessive work, and leisure time education); and family planning awareness campaigns.

Specific activities which produced tangible results, such as reducing the amount of household work, also helped wives and mothers (who would be the principal individuals implementing these activities) with getting the approval of their husbands and parents-in-law. Community-based health activities led by all the residents of a village or region with the encouragement of a Seikai-san played a major role in raising health standards among the rural population, which made up 70% of Japan's population.

2-2 Examples of Successful Projects

We will now present some successful cases of community-based health programs in Japan. These are (1) Sawauchi Village in Iwate Prefecture, where the lead taken by the local government succeeded in improvements in public health and medical services; (2) Yachiho Village, where the Saku Central Hospital, played a major role; and (3) Okinawa, which managed to develop community-based health programs despite minimal medical resources and disadvantageous geographical conditions.

2-2-1 Sawauchi Village: Community-based Health Activities Under the Local Government Initiative²⁶

Sawauchi is an impoverished village located in the central north of the main Japanese Island of Honshu, some 60 kilometers southwest of Morioka City. Situated in a mountainous region close to the border with Akita Prefecture, it is snowbound each year between the months of December and May.

The most notable feature of the community-based health initiatives undertaken in Sawauchi is that they were combined with regional development projects in the form of snow clearing in the winter months and nameko mushroom cultivation. These led to the empowerment of the local residents, that in turn germinated self-supporting measures for subsequent public health activities.

Other major characteristics of the Sawauchi experience were that the local government, headed by the village mayor, took the lead in these initiatives, and that they aimed for bottom-up change from the residents themselves, notwithstanding the time-consuming nature of the relevant processes. Both the winter snow clearing and the nameko mushroom cultivation schemes were achieved by collaboration with the local residents. The first

step taken was to increase residents' knowledge through greater education, that was needed in order to enhance democratic processes in the village. Next, encouragement and support was given for the creation of one community group after another, such as a housewives' association, a youth club, a youth branch of the agricultural cooperative, and a village office employee association. Furthermore, in order to coordinate the village's health activities, a "health liaison worker" was appointed for each neighborhood, and a "public health committee" was created representing community groups as well as professionals with an involvement in Sawauchi's healthcare system and its schools.

A "Halve the Infant Mortality Rate Campaign" was conducted, organizing various entities, including these community groups. Programs were developed in which doctors, the village authorities, public health nurses, the board of education and various community groups would work together seamlessly. Examples of such activities were infant health checks, outreach diagnosis and treatment services, the purchase of an ambulance, film sessions to raise awareness of the tax cost of the national health insurance scheme, a campaign to expand the organization of youth clubs, and seminars on hygiene, childrearing and nutrition run by the housewives' association. As a result, Sawauchi's infant mortality rate, which at 70.5 per 1,000 births was almost double the national average of 39.8 in 1955, fell to zero in 1962.

In addition, in the belief that health education would not take hold in the village unless a proper medical system was established, measures were taken to raise the quality of the village hospital. Doctors posted to the Sawauchi Hospital did not generally stay long, which meant that the quality of its medical staff was often poor, and consequently Sawauchi residents viewed the hospital with great

²⁶ Prepared with reference to Kikuchi, Takeo (1968) *Jibun-tachi de Inochi wo Mamotta Mura* [A Village that Protected their Own Lives] Iwanami shoten. Oikawa, Kazuo (1984) *Soncho Arika - Sawauchi-mura, Fukazawa Masao no Shogai* [Village Mayor - Sawauchi Village, The life of Fukazawa Masao. Shincho sha, Idashimoto Masami (1968) *Chiiki Hoken Katsudo - Koshuisei to Gyouseigaku no Tachiba kara* [Community-based Health Activities - From the Standpoint of Public Health and Public Administration], Igakushoin.

distrust. However, as a result of the mayor's efforts over more than six months, in 1959 with the cooperation of Tohoku University, he was able to engage some keen young doctors. As a result of the renewed confidence in the hospital owing to the improvements in its human and physical resources, Sawauchi's residents were now prepared to join forces with the hospital to get health campaigns up and running.

A preventive philosophy of avoiding sickness in the first place also prevailed in Sawauchi, aiming to reduce the number of people who only saw the doctor after falling ill. To that end, in order to combine remedial diagnosis and treatment services with programs of sickness prevention, the official responsible for community health and national health insurance in Sawauchi was appointed to serve concurrently as the hospital's business manager. As stroke was the village's leading cause of death, health checks were provided free of charge for all adult residents in the village, including blood pressure checks, electrocardiography, urinalysis and funduscopy, with the specific aim of reducing the incidence of strokes. These measures led to setting up and maintaining a register of people with high blood pressure, ongoing measurement and health guidance by public health nurses, and improvements to the harsh living environment in winter. The bold step was taken to give 100% health insurance coverage to people over the age of 60 in 1960, and to infants in 1961. As a result of these efforts, and the growing realization among Sawauchi residents of the importance of prevention and early detection, the village's medical consultation rate came to be among the highest in Iwate Prefecture, but a reduction was achieved in costly medical treatments for fatal and serious illnesses,

and so these initiatives succeeded in lowering its medical expenditures overall.

To summarize the characteristics of initiatives undertaken by Sawauchi Village: measures were combined with regional development projects (snow clearing and nameko mushroom cultivation), which provided impetus for subsequent public health measures; residents were encouraged to organize themselves and embark on further voluntary activities; quality of the services provided by the village's medical facilities were raised, boosting people's confidence in them; comprehensive measures were carried out by getting a number of different organizations to collaborate; and through measures that emphasized prevention and early detection, the village succeeded in reducing its overall medical expenditure.

2-2-2 Saku Central Hospital and Yachiho Village: Hospital-based Community Health Activities²⁷

When a surgeon by the name of Toshikazu Wakatsuki took up his post in the spring of 1945 at Saku Central Hospital in the village of Yachiho, a typical Japanese isolated mountain village, the Hospital had never accepted inpatients, and in reality functioned as a medical clinic. Dr. Wakatsuki held the firm attitude that the Hospital should meet whatever medical needs the local residents might have.

At the time, there was not one facility that was officially able to perform abdominal surgery in the vast mountainous region of Minami Saku, which then had a population of well over 200,000. Dr. Wakatsuki therefore decided to offer this service, and consequently accept inpatients at the Hospital. In addition to general surgery, he also performed a whole range of surgical procedures, from caesarean

²⁷ Prepared with reference to Wakatsuki, Shunichi (1971) *Mura de Byoki to Tatakau* [To Fight with Illness in Villages] Iwanami Shoten., Wakatsuki, Shunichi (1971) *Noson Igaku* [Medical Care in Rural Villages] Nihon Koshueisei Kyokai., Namboku, Nagi, Keishi (1994) *Shinshu ni Joi Ari - Waikatsuki Shunichi to Saku Byoin* [Good Doctor in Shinshu - Doctor Shunichi Wakatsuki and Saku Hospital] Iwanami Shinsho, and Hashimoto, Masami (1968) *Chiiki Hoken Katsudo - Koshueisei to Gyosei-gaku no Tachiba kara* [Community Health Activities - From the Standpoint of Public Health and Public Administration], Igaku Shoin.

sections to breast cancer operations, often referring to medical texts. This won him the great confidence of the local community, that then formed the basis for the Hospital's subsequent developments.

Health education activities were the next step, by way of an outreach diagnostic service that went out into the village, and also in the form of medical theater performances by the Hospital staff. Surprised at how often residents in rural areas who came to the Hospital were beyond medical aid and how little health knowledge they had, Dr. Wakatsuki described this as "an endeavor to get out from the Hospital into the community, so as to detect illnesses early and get early treatment for residents." This endeavor succeeded in uncovering hidden disease burdens and individual cases among farming communities.

Diseases and conditions peculiar to farming communities were discovered as a result of epidemiological surveys and occasional sociological surveys. These diseases included gallstones caused by parasites, "kohte," a painful condition afflicting farmers' wrists during busy periods, the problem of cold farmhouses, and "Farmer's Syndrome." The Hospital developed treatments for these ailments, and as well monitored the ongoing situation using field surveys, and worked to spread awareness of preventive measures. These activities were based on scientific evidence, and following of the first conference in 1947 of the Nagano Prefecture Association of Rural Medicine, a National Association of Rural Medicine came to be established in 1951. Spurred by the issue of cold farmhouses, research was conducted into heating, and the external causes of "Farmer's Syndrome" were identified as physical and mental fatigue, poor nutrition, and cold weather during winter. These are some examples of the research that led to improvements in the standard of living of residents of rural communities.

In addition, medical technologies were improved to meet the health needs of the rural residents one by one and with great care. One new hospital ward after another was constructed, including an infectious diseases ward in 1951, a

bone tuberculosis ward and a psychiatric ward in 1957, and an adult diseases center in 1964.

In 1959, through a partnership with the Yachiho Village Office, a mobile consultation service that had formerly been conducted on an irregular basis was expanded into a regular medical examination service called the "All Village Health Management Project," which targeted all village residents over the age of fourteen. The results of simultaneous medical examinations of all eligible villagers were recorded in a "health register," which allowed the village to monitor the health levels of its residents as a whole. At the same time, individual villagers were given their results in the form of a "health card," which helped to foster an understanding and awareness of their own health. These records did not only contain the results of medical examinations. Another feature was that they also recorded lifestyle and environmental factors, so they could assist residents with improving their lifestyles by allowing them to see the correlation between their lifestyle and environment on the one hand, and their health on the other. The support and cooperation of local residents was crucial to the complete implementation of the "All Village Health Management Project," and for that purpose a "public health committee" was set up with learned representatives from the village, and in each community a "health guidance officer" was appointed. The youth and housewives' branches of the agricultural cooperatives also provided support in all aspects. Through rigorous early detection and treatment, the Yachiho All Village Health Management Project achieved a reduction in the incidence of serious disease. This in turn led to a definite drop in the village's medical costs per insured individual, compared to both neighboring villages and the national average. Given that the reduction in medical costs was several times greater than the costs of health management, Dr. Wakatsuki proposed that the costs of health management should be covered by insurance as "payment for preventive measures."

To summarize the characteristics of the initiatives undertaken by the Saku Central Hospital: the needs of rural residents were met

one by one and with great care; the underlying nature of those needs meant that they were identified only after health workers and professionals actually took up residence in the village; and those needs were identified using epidemiological, sociological and other scientific methods. Other notable features are that the health levels of rural residents were monitored on an ongoing basis through the health register and their individual health cards; success was achieved in reducing medical costs through prevention and early treatment; and, as a result of the investigations made into the underlying causes of diseases afflicting the villagers, steps were taken to promote improvements in residents' basic living conditions and in their farming work practices.

2-2-3 Community-based Health Activities in Okinawa

For almost thirty years following WWII until 1972 the territory of Okinawa was under U.S. administration, which meant that its public health and medical system followed a slightly different developmental path from that on the Main Japanese Islands. The territory of Okinawa comprises 160 islands both large and small scattered across a vast area of ocean measuring 1,000km from east to west and 400km from north to south. Difficulty in accessing medical treatment is therefore a major issue for its residents. The devastation wrought by the war also meant that Okinawa lost much in the way of trained medical personnel and resources, so it had to start again from virtually nothing. Despite this, Okinawa residents now have the longest rates of longevity in Japan, thanks to community-based health programs that received strong backup from local authorities.

1) Response to the Doctor Shortage

There was an extreme shortage of healthcare personnel in Okinawa in the immediate post-war

period. For instance, whereas there had been 34.4 doctors for every 100,000 people before the war (in 1936), after the war (in 1946) this ratio had collapsed to 12.2, or around one third the previous figure. Although doctors originally from Okinawa before the war did gradually return home from wartime postings and former occupied territories, even in 1950, some five years after the war, Okinawa had a total of just 131 doctors, or 18.8 per 100,000 people.

In order to overcome this extreme shortage of doctors, for six years between 1945 and 1951 the U.S. military government²⁸ prohibited doctors from private practice, and instead operated an entirely government-run medical system. The authorities dealt with the emergency caused by the shortage of trained personnel during this period by posting doctors as government employees to medical facilities in different parts of the territory according to the local needs. Pharmaceuticals and medical supplies were all supplied by the U.S. military.

The territorial administration also set up a system of "assistant doctors," whereby people with experience as medical assistants (such as former Imperial army medical orderlies) were given special dispensation to perform a limited range of treatments after a one to two week retraining period. Assistant doctors were posted to outlying islands and remote areas with a shortage of doctors, taking on the role of provider of community-based medical services in their postings.

Efforts were also directed towards training more doctors. In 1949 the territorial administration launched the Contract Medical Student Study Abroad Scheme, which allowed many Okinawan students to study medicine on the Main Japanese Islands. This was replaced in 1953 by the Publicly Funded Medical Student Study Abroad Scheme, that continued until 1986. Doctors trained under these schemes subsequently made a major contribution as providers of community-based medical services in

²⁸ From 1950, the U.S. civilian government.

Okinawa Prefecture, both as clinicians and as leaders in the training of other medical personnel.

2) System of Resident Posting for Public Health Nurses in Okinawa

Okinawa's public health nurses were qualified nurses who were authorized to administer limited medical treatments after a brief training period. Planning, guidance, support and coordination of the activities of public health nurses in Okinawa were the responsibility of the public health center to which they were attached. Nurses were stationed in underpopulated areas and outlying islands where there were no doctors. Their role was to be single-handedly responsible for the health of local residents while living among them. In particular, as part of tuberculosis control programs, public health nurses would make home visits to provide health guidance and supervise medication. In remote areas with no medical services, they even initiated tuberculosis treatment. Public health nurses encouraged chairman of neighborhood association and community organizations, such as housewives' associations, youth men's associations, and elderly citizens' centers, to participate in tuberculosis prevention and screening programs. These efforts ensured that the entire community cooperated in health education and underwent testing for tuberculosis. Public health nurses also combined forces with local governments and schools to promote various public health projects.

This system achieved great results. The strong support base provided by the regional government was a factor in that success (see Box 8-5). A major characteristic of this system was the centralization of personnel management in the hands of the regional government, namely the Government of the Ryukyu Islands and its successor (from 1972) the Okinawa Prefectural Government. Determination by the central authorities of who was appointed where, and for how long, ensured that nurses' postings were fair and equitable, and helped to eliminate any feelings of uncertainty and inequity on the part of the nurses, who at some stage would unavoidably have to be sent to

an outlying island or remote area with scant resources or information sources. A major factor behind the success of the system of resident posting was the strong relationship of trust between the administration (principally, the managers of Nursing Divisions) and the field workers (the public health nurses), that underpinned the entire process of posting, supervision, and monitoring.

3) Private Sector Activities

Another noteworthy feature of community-based health activities in Okinawa was the beneficial consequences of community participation and publicity campaigns in the mass media.

We have already seen how, as part of tuberculosis control programs in Okinawa, public health nurses resident in local communities actively lobbied chairman of neighborhood association (such as ward chiefs), as well as community organizations such as housewives' associations, youth clubs and elderly citizens' centers, the entire community became involved in health education came to be conducted by and people were encouraged to undergo tuberculosis screening. The "Ryukyu Tuberculosis Prevention Society" was a private organization established in 1953 to conduct community education, publicity campaigns, and group screening. Subsequently, in 1956, recovered patients took the lead in forming the "Okinawa Patient's Association" to provide patients with guidance on managing their day-to-day lives and with counseling on medical treatments, and also conducted publicity campaigns for tuberculosis prevention. In this way, private sector support programs were a major driving force in the campaign against tuberculosis.

Parasitic disease control programs began in Okinawa with the establishment of the private "Ryukyu Parasite Testing Center" in 1961 by a pharmacist who felt strongly about the need for parasite control measures in rural villages. With assistance from technicians in public health centers and institutes of public health, the Center conducted stool sample testing. With the assistance of doctors from the public and private sector, they

Box 8-5 The Key to the Success of the Resident Posting System for Okinawa's Public Health Nurses

Transfers of personnel in the resident posting system for Okinawa's public health nurses were formally controlled by trustworthy administrators in the central regional government. Postings would alternate between 5-6 years on the main island of Okinawa and 2-3 years' service on an outlying island. In addition, since public health nurses on outlying islands were inevitably isolated with no immediate support, they needed every possible support their manager could provide. The Nursing Division Manager responsible for the outlying island where a public health nurse was to be posted would offer her words of encouragement immediately prior to her posting, saying, "I will look after you and your health for the duration of your posting, so you can devote all your energy to looking after the health of the local residents." The manager would also accompany the nurse on her first journey to her posting, and take her around and introduce her to the municipal officials and leading citizens as part of the handover of her duties. Over the course of her posting, the manager would telephone frequently, and ask how her programs were going and if she was short of supplies. Managers also provided counseling and advice, and would also regularly visit the nurses and give them training and guidance. All this support allowed public health nurses posted to outlying islands to engage in their duties in these very challenging day-to-day conditions with the feeling of security that they weren't being neglected, and that someone was looking after them. In addition, the public health nurses attached to each public health center would meet once a month to discuss community health problems and particular difficulties that they faced. These regular gatherings served as forums where they could gain assurance as well as valuable advice on their work.

Source: Nakasone et al. (Supervisor), Ogawa, Sumiko (Chief Editor) (2002) Public Health Nurse in Okinawa, Production by Video Pack Nippon, Planning & Sponsored by JICA.

also provided public health education to various groups, including schools, municipalities, and housewives' associations.

In 1963, the Center grew into the Okinawa Association of Parasite Control, an incorporated foundation that became a central figure in the field with the "Zero Parasite Campaign" that ran for five years from 1965. The Zero Parasite Campaign was conceived as a joint project with the media such as local newspapers, radio and television stations. It was the first fully-fledged mass media campaign in Okinawa. The radio program "The Journey of Zero Parasite Campaign" was broadcast as a long-running series, providing the impetus for harnessing the power of the media to raise public awareness of parasitic infestation as a major social problem. The Campaign also placed emphasis on information provision to local residents, and nearly 250 events on

parasite control were held each year in communities and schools by doctors and public health nurses, including health education sessions and film screenings. At these events, reports were given on the state of progress in the Zero Parasite Campaign, and making those results available to the public had the beneficial effect of raising community awareness of participation. As a result of the Campaign, private sector activities came to be reflected in government policies, with the result that the government covered part of the cost of stool sample testing.

As a result of transfers of population to disease-ridden areas, for example war-related evacuations, there was an explosive increase in malaria among the population of post-war Okinawa. To combat this outbreak, rigorous measures were instituted under the guidance of U.S. military doctors, including the detection of

patients through blood testing followed by treatment, elimination of mosquito vectors using DDT, and administering preventive medicines to residents of affected areas. These measures resulted in a dramatic decline in the number of malaria cases, and following the last five cases in 1961, indigenous malaria was eliminated from Okinawa. A principal cause of this success was enlisting the active cooperation of local residents in malaria control measures. This was achieved through community education, using lectures, posters, leaflets and media announcements, changing the awareness of the local population, the majority of whom had previously thought that malaria was fatal. In addition, in order to exterminate the mosquito vectors, under the guidance of public health centers people were recruited on a temporary basis from each community to spray DDT. Local residents also acted in eliminating underbrush and stagnant pools of water from around their properties, and community groups assisted by encouraging people to take blood tests. Widespread community participation in this manner was a major driving force in the success of the malaria control campaign.

In summary, the characteristic Okinawan initiatives were: despite an extreme shortage of healthcare personnel and facilities, a number of pressing health issues were overcome by making effective use of the limited resources available; utilization of the publicity power of the mass media; and through public health education, and active community participation. In particular, the resident posting system for health staff such as public health nurses, and the back-up system provided for them, provides a number of suggestions to developing countries with regard to capacity building.

2-3 Mechanisms of Community-based Health

Using a holistic analysis of the characteristics of the principal players previously introduced, along with three specific examples of community-based health initiatives, in this essay we will examine the dynamics and mechanisms that operate in community-based health in Japan. Community-based health measures are extremely varied, as they

depend on the particular nature of the community to which they are applied. While it is therefore not easy to provide a model that can be presented as representing “community-based health,” from a number of different actual measures in this essay we will attempt to elicit some common base elements. By extracting what could be described as the “essence” of community health, and by considering which factors have to be heeded in order to achieve a healthy community, we will attempt to define one aspect of the mechanisms of community health.

2-3-1 Collaboration between Different Organizations

While the lead organization in a community-based health program will vary depending on the particular circumstances, common to these measures is that governments, medical institutions, public health nurses, other public agencies and community organizations work together in an organized manner. Community-based health activities take on an energy of their own in an all-inclusive manner only when the activities of the participating groups become dynamic and organic through working together for a common goal. Hashimoto (1968) cited as the principal constituent elements of community-based health activities: 1) expert leadership (e.g. medical associations, universities, and research institutes); 2) community-led participation (e.g. various private sector groups and neighborhood organizations); and 3) government authorities (e.g. regional governments, public health centers, and local governments). Participation by these three players, each with their own different methods and objectives, is thought moreover to be an important factor in extending the range of community-based health activities. Sakuma (1978) has categorized the merits and demerits of community medicine and community health programs according to the type of leading player (see Table 8-3).

With respect to the organization of a community for the purpose of a community health program, Sawauchi Village and the Saku Central Hospital are examples where local neighborhood units such as school districts and neighborhoods were made the smallest units. These units were

assigned personnel such as health guidance officers who would represent the residents, and while maintaining close contacts with the community, met regularly at the municipal level, collaborated at the municipal level, holding regular meetings.

As the peak body in the community health hierarchy, a public health committee was established to allow exchanges through regular meetings

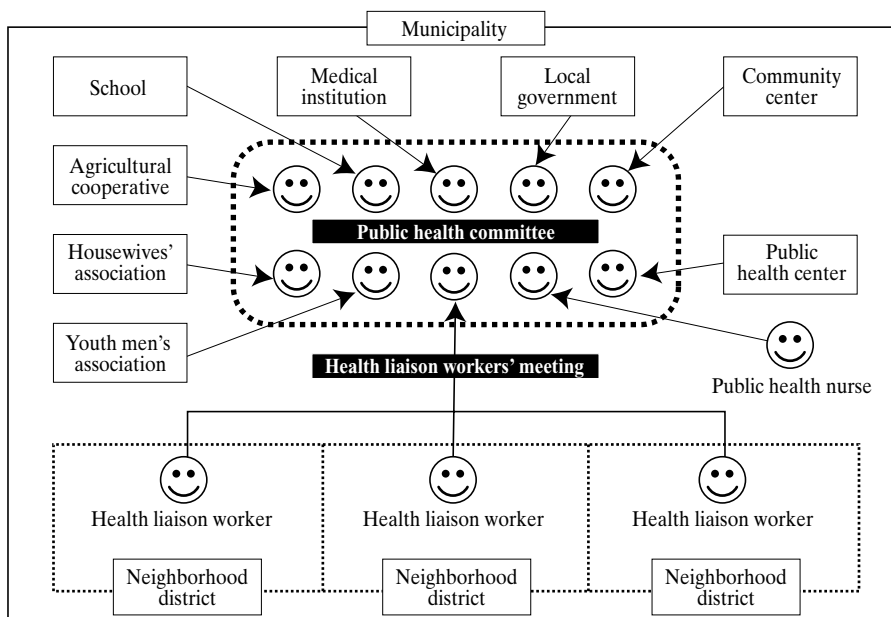
between representatives of health guidance officers, organizations with responsibility for specialist leadership, responsible government officials, and leading citizens from the local community. This sort of structure can be put forward as an effective mechanism (see Figure 8-2). Hashimoto (1968) said that although small communities such as school districts and villages are the most cohesive units for

Table 8-3 Comparison of Different Leadership Models for Promotion of Community-based Health, Medical Services and Social Welfare

Leading player	Main merits	Main demerits and problems
Local government	Securing budgets, collaboration with and making best use of administrative organization	Securing doctors and other professionals, problems of cooperation with medical associations, complexity of paperwork
Public health centers	Proven experience in Community-based health, securing certain specialists	Lack of personnel and resources, poor ability to lead community organization activities
Medical associations	Cooperation and activities by doctors, cooperation with other medical service personnel	Lack of collaboration with local residents, difficulty collaborating with government and other professionals
Academics	Advantageous for drafting plans and developing theories	Lacking in practical abilities, participation in planning tends to be sporadic
Local residents	Local residents can take the lead in planning and activities	Difficulties securing doctors and other professionals, and making time for activities
Specialist organizations	Can develop activities based on their own decisions	Tend to become isolated, have problems coordinating with other organizations
A combination of the above	A selective combination of the above merits	Ill-defined leadership, tendency to confrontation and competition

Source: Sakuma (1978) p. 31

Figure 8-2 Diagram of the Organization of Community-based Health



Source: Produced by the authors

community-based practical activities such as pest eradication, they are however too small to be effective if society resources are to be mobilized for any program to develop a community organization. This sort of two-stage organization formation can both give rise to a sense of unity among local residents and allow effective measures by government authorities and organizations responsible for providing specialist leadership. In addition, when people at the grassroots level come together at one site in regular meetings, allowing an exchange of views between the peak organization and the various participants, this is an effective means for sharing problems and for devising solutions.

2-3-2 Active Participation by Local Residents

No matter how much time it takes, it is important to get local residents to participate in community-based health activities, through democratic discussion in community organizations. Sustainable community-based health activities will not be possible unless each individual community member changes their thinking, exercising their minds in these discussions in order to overcome powerlessness, resignation, superstitions and counterproductive customs. While the support of medical services personnel and the administration will of course be necessary, the local residents themselves who will receive services will obtain the best available services if they have input into the content and form of those services. Community residents will be empowered through the confidence that they experience from their own achievements, leading to other programs and thus giving rise to a self-sustaining ability to develop activities in general. It is also important for medical and government authorities to take the position of "thinking with the community," and it goes without saying that it is necessary to view things from the perspective of local residents.

In Sawauchi Village, snow removal programs and nameko mushroom cultivation built trust in government officials, whereas at the Saku Central Hospital, Dr. Wakatsuki earned the people's trust through surgical operations, in both cases forming the basis for subsequent community-based health activities. With entry points such as these, whose results readily seen by people in the community, it becomes easier to gain people's trust, in turn making it easier to encourage local residents to become involved.

2-3-3 Problem Solving Begins with Understanding the Present Situation

Characteristic of Japanese initiatives is the scientific and efficient approach taken, in that before attempting to solve the community's problems, the community is assessed in its present state (including specific characteristics and medical needs), problems are identified and analyzed, and then existing resources are fully utilized in solving those problems. Scientific methods are used to conduct an analysis of problems and issues by the central government, local authorities and doctors as a matter of course, and also by public health nurses and livelihood extension workers. Interested parties in Japan have considerable latent capacities in this regard.

Outreach activities are valuable for assessing lack of time available to farming families particularly in busy seasons; 4) personal feelings of reserve or constraint owing to feudal concepts, patriarchy or the relationship between mothers- and daughters-in-law; and 5) the idea that seeing a doctor is a luxury²⁹.

In addition, there is much about community residents that healthcare staff can understand only when they go out among them. Dr. Shimizu, the deputy director (in 1992) of Saku Central Hospital stated "Previously, medicine would assess people only from a biological aspect, as if they were just an organism. But by going out into the community,

²⁹ Wakatsuki, Shunichi (1966) "*Noson ni okeru Iryo to Koshueisei* [Medical Care and Public Health at Rural Villages]," *Iryo to Koshueisei* [Medical Care and Public Health], Igakushoin.

³⁰ Wakatsuki, Shunichi and Shimizu, Shigefumi ed. (1992) *Ishino Mita Noson no Henbo – Yatsugatake Sanrei Goju-nen* [The Transformation of the Rural Village Seen by a Doctor –Yatsugatake Sanrei for 50 Years–] Keiso Shobo.

Box 8-6 From Community-based Health to Regional Promotion - Healthy Vegetable Production as the Impetus

Case 1: Nishi Aizu Town, Fukushima Prefecture

The town of Nishi Aizu in Fukushima Prefecture (population: 9,000) lies nestled in mountains near the border with Niigata Prefecture, in Japan's central north-west. Its population is shrinking, and mostly only the elderly remain. The residents' diets contain too much salt, and in line with a situation often seen in this part of Japan, being shut indoors by heavy snowfalls means its residents do not get enough exercise in winter. The town consequently suffers from a high incidence of strokes and lifestyle-related diseases, and with an average life expectancy in 1985 (73.1 years for men and 80 for women) lower than the national average, it was dubbed the "town of early death." With increasing numbers of bedridden elderly residents, the town saw its medical bills escalate unchecked, blowing out the deficit in its national health insurance budget, in turn necessitated onerous increases in the residents' tax burden.

At a lecture held in the town in 1997, a talk was given by the director of an agricultural sciences institute that advocates the traditional Chinese philosophy of food as medicine, and provides guidance on the cultivation of fruit and vegetables full of minerals. The town mayor liked what he heard and asked the director to provide the town with farming guidance. The director made a "nutritional diagnosis" of some of the town's farmland, and found that the soil was dying because of too many fertilizers and agricultural chemicals. The town accordingly curbed its use of fertilizers and chemicals, and the soil was given supplements of the minerals that it lacked. When cultivation began in the spring of 1999, the benefits were immediately apparent, and a crop of very palatable fruit and vegetables was harvested, with a higher sugar content and rich in vitamins and minerals. The number of devotees of the "healthy vegetables" grew rapidly, farmers began to offer farm-gate sales, and they were even used in local school lunches. They fetched a twenty to fifty percent premium at markets in Tokyo, and the town received a most respectable number of home delivery orders.

While naturally there were health benefits from eating the vegetables, such as reducing the incidence of allergies and better well-being from increased physical activity, as production picked up another benefit appeared. Cultivating the vegetables gave a purpose in life to elderly residents who had known no other life but farming.

In addition, a campaign was conducted to improve residents' diets by modeling their meals on the diets in Okinawa Prefecture, whose residents enjoy the longest life expectancy in the world. A project was also launched whereby diet improvement guidance workers, who had received training in food nutrition, would visit people's homes and give them guidance for a healthy diet. As a result of all these activities, life expectancy in Nishi Aizu gradually improved, to an average of 77.6 years for men and 84.1 years for women in 2000, also delivering a reduction in the town's tax bill to meet its national health insurance costs.

Source: "An Entire Town Grows Healthy Vegetables - Nishi Aizu in Fukushima Prefecture Extends its Residents' Average Life Expectancy," Nikkei Shinbun (June 15, 2003)

Case 2: Kita Mimaki Village

In 1976 Kita Mimaki, a village with a population of around 5,500 located to the west of Komoro City, began an "All Village Health Management Project" with the support of the Komoro Kosei Hospital. With the municipal government and the agricultural cooperative playing the

pivotal role, health screenings using medical examinations surveying people who had missed out on checkups, result reporting sessions, and one-on-one individual counseling sessions, were conducted throughout the village. An examination of the Project's results over a ten-year period revealed that anemia was a major problem for the village. A diet survey conducted in 1986 of all adults in the village showed a significant difference between the anemic group and non-anemic group in terms of their consumption of meats, fish, soy products and vegetables, food types with a strong connection with anemia. This confirmed that efforts were needed to improve the villagers' diets.

A public health nurse from the village office and mothers from the village who attended the "National Conference of the Campaign Against Synthetic Detergents" in Suwa City in 1987, heard a lecture that described the benefits of millet, which contains lots of vitamins, calcium and iron. Thinking that this would be just the thing to prevent anemia, they at once purchased nine kilos of millet seed, which they sowed in the fields of the health guidance officer and some volunteer farmers. In the fall, they harvested seven tones of millet. The village government and the agricultural cooperative joined forces with local residents in this project, the former purchasing a grain polishing machine and the latter offering storage sites. In late fall, when the village harvest festival was held, a range of millet dishes that had been prepared by the health guidance officer and the housewives' branch of the agricultural cooperative were put on display and offered to visitors to sample. Millet, whose cultivation by the village had started out as a means to combat anemia, evolved into a "village promotion project" when it was designated a specialty of the village the following year in 1988, thereby attracting interest throughout the local region. As a result of various measures implemented to combat anemia through the inclusion of millet in the local people's diets, in 1988 the rate of anemia in the village fell to its lowest on record. Following the success with millet, the housewives' branch of the agricultural cooperative began to produce Mimaki Tofu, using locally produced soya beans grown in converted rice paddies. Mimaki Tofu became so well known that production could barely keep up with the demand from private homes and for school lunches.

Source: Sakamoto, Kazuyo ed. (1990) *Iryo wo Koete-Komoro Kosei Sogo Byoin · Chiiki Hoken Katsudo no Jissen* [Beyond Medical Care-Komoro Health and Welfare General Hospital · Practice of Community-based Health Activities] Nihon Keizai Hyoron-sha.

doctors begin to be able to understand their patients in their social context."³⁰ In other words, by undertaking outreach activities, for the first time medical personnel are able to "think with the local residents."

2-3-4 Holistic Approach

Starting with mother and child healthcare, parasitic disease control programs and tuberculosis control projects, community-based health initiatives in Japan have ultimately led to overall community development. In many cases, the fundamental causes of the various diseases were often revealed to be the residents' sub-standard living environments, including housing, diets and work practices. Community-based

health initiatives result in improved lifestyles. By conducting outreach activities from the perspective of "thinking with the local residents," and through the problem solving method that starts from assessing the current situation, measures naturally become "multi-sector" in nature. In one case which conspicuously demonstrates this process, through better vegetable cultivation methods and the cultivation of new vegetables, initially just with the aim of improving the local residents' diets, not only did the community's general health levels improve, but those vegetables became a specialty of that region, contributing to the incomes of the district. In addition, in many farming families the cultivation of

vegetables became the main purpose in life for their older members, who knew no other life but farming (see Box 8-6). These examples show that it is possible for community-based health improvements to bring other benefits in the form of rural development, higher incomes and improved lifestyles, and that ultimately they can achieve well-being in people's lives. Improving general levels of health is the first step in lifting people out of poverty.

3. Community-based Health Systems in Developing Countries in the Light of Japan's Experience

The most pressing issues facing low and middle income countries today, and in particular rural villages, are the lack of medical facilities and medical service personnel, and the inability of residents to access medical services, perhaps even to the extent of ignorance of their existence. Both Japan's experience for about fifteen years following the Second World War, and Okinawa's experience under administration by the U.S. military, include overcoming situations similar to those in developing countries by means of community-based health initiatives. They can therefore offer models for the application of community-based health in developing countries. Some specific examples from those experiences are given below. When considering these experiences, it should however be emphasized that the first step should be to conduct a survey to find out what the country or communities already have in the way of human resources and facilities, and what sort of role these existing resources can fulfill.

3-1 Provision of Community-based Health Services Centered on Public Health Centers

Nowadays almost all developing countries have established public health facilities called health centers or health posts. A system of community-based health based on health centers and health posts is considered effective for regions with no medical facilities. Health centers and health

posts are lacking in adequate trained personnel and finances, however, and are little trusted by the local people. Another issue is that health centers do not make the best use of community resources (such as schools and trained personnel).

On the other hand, with only limited medical facilities after the war, Japan built and maintained a network of public health centers across the country, as both the most peripheral part of the public healthcare framework and as the frontline organization in the community-based health system. Japan's public health centers differ from health centers in many of today's developing countries in that they function more efficiently, the principal being that they were fully incorporated into the public health administrative framework, which constituted a coherent chain from the central government to the public, in a line from the Ministry of Health and Welfare to regional governments to public health centers to the community. Another factor was that Japan's public health centers were able to secure adequate budgets, along with various professionals and equipment. In addition, public health centers did not provide medical services, but instead focused on prevention, early detection and community education. They also concentrated their efforts on tuberculosis and maternal and child health, the most pressing health issues of the time. In addition, as well as being the most peripheral part of the administrative framework, it is also noteworthy that public health centers linked together both community resources (medical clinics, hospitals, and schools) and human resources (public health nurses, practicing mid-wife, livelihood extension workers, and community groups), and served as the coordinator for these groups.

Much of the Japanese experience of building and expanding public health centers, as well as much of the experience in bringing community resources together and playing a coordinator role, could be useful for developing countries in building and strengthening their own health centers, and in increasing their capacity to coordinate activities with the local community.

3-2 Appropriate Placement of Public Health Workers

In order to overcome an extreme shortage of doctors, for example because they have either no medical school, or just one, some developing countries have trained personnel called mid-level practitioners (MLPs)³¹. Many developing countries also have a variety of assistant nursing professionals who are responsible for public health programs in health posts and health centers³². Although much support is provided for the training of these personnel, a major problem is that once trained they are often unwilling to take up positions in the very communities, such as farming villages, which lack adequate healthcare services, notwithstanding the tremendous need of these communities for such healthcare staff. Some of the reasons they give are feelings of isolation in rural communities, the uncertainty of not knowing when they can return to a central posting, frustration that they are not keeping up with technical advances, and dissatisfaction with low remuneration.

After the war, when it has an acute shortage of trained medical personnel, Okinawa achieved excellent results by establishing both a public health nurse system and a system of “assistant doctors” who were permitted to perform a limited range of treatments. At the same time, for remote regions in Japan that suffered from an acute shortage of medical staff, an Okinawa’s public health nurse resident posting system was adopted, whereby by living in local communities with the local people these nurses could provide healthcare services to the community on a 24-hour, 365-day basis.

A resident posting system for healthcare personnel who are authorized to perform some medical treatments is effective for communities that have difficulty accessing medical services, and Japan’s experience shows that they can achieve much, even if they do not have a medical qualification. On a daily basis, public health nurses would visit people’s homes and obtain information regarding family members and their lifestyle, that would assist in diagnoses and treatments. These women performed many of the duties of what today would be called a family doctor. Their efforts inspired security and trust in their clients towards public health nurses and their programs.

Japan’s system of dispatching healthcare staff to remote locations, such as villages without medical services, is also applicable to developing countries. For example, under the Okinawan resident posting system, personnel were managed in a fair and equitable manner, allowing public health nurses to attend to their duties diligently, with peace of mind over their own situation. Professional standards of personnel management were applied, with nurses receiving regular support and training opportunities from their immediate managers while on their postings, and there was also the regular program of bringing together the public health nurses attached to each public health center, where they could share their problems and discuss ways to solve them. Another important factor was that national and municipal public health nurses were well remunerated³³, which meant that they could head out to their posting and carry out their duties with a sense of duty, and without any

³¹ While their training period and job title varies from country to country, as a general rule even if they are not doctors they are trained as medical services personnel who can provide certain treatments, and they are regarded as an integral part of the community-based health system. They are called, for example, Health Assistants (HAs) or Assistant Health Workers (AHWs), and are often appointed to manage health centers.

³² Their job title varies from country to country. Some examples are Assistant Nurse-Midwife (ANM), and the Village Health Worker (VHW).

³³ According to Moriguchi and Hyou (1993), “in 1952 in their second year of employment, national public health nurses in Y Village earned a higher salary than a teacher with a university degree, the remuneration of national public health nurses in I Town was exceeded only by that of the deputy mayor, and they were given the use of a motorized bicycle.” According to Nahara (2003), public health nurses were “members of the village elite, second only in status to the mayor.”

sense of grievance. As shown by the example of the Saisei-kai in Hokkaido, the strategy of returning people to their original communities after sending them away for training as healthcare staff is effective in securing medical personnel for remote communities. The Nepal School and Community Health Project (SCHP), conducted through cooperation between JICA and the Japan Medical Association between 1992 and 2001³⁴, achieved considerable success with this strategy³⁵. The principle of Primary Health Care (PHC) espoused in the Alma Ata Declaration also suggests the desirability of health workers who are to work in a particular community to be selected from that community, since these workers can readily settle down in the community and get to know the local people³⁶.

In developing countries, residents are sometimes not even aware of the existence of healthcare services, and they may have a number of latent health needs that they do not realize. Outreach activities are one of the most effective approaches in this situation. Measures are needed that to get healthcare staff in developing countries to walk around a village as part of their practical training, so that they can experience for themselves how effective outreach activities are. Providing health guidance through outreach activities assists with disease prevention, and the early detection of disease also encourages patients to make timely visits to medical facilities. Prevention and early detection of diseases is especially necessary in developing countries, where it is difficult to access advanced medical treatments, and medical resources are limited.

Developing countries also need to expand their medical training programs, alongside their

training of allied medical personnel. In Japan a variety of measures were taken to that end, such as the Okinawan Publicly Funded Medical Student Study Abroad Scheme, setting up specialist training institutions responsible for remote area medical services such as the Jichi Medical School (see Box 2-1 in Chapter 2), and establishing medical faculties in regional areas. These initiatives could also serve as models for the training of medical personnel in developing countries.

For the purpose of training medical services personnel, however, it is important to not simply study a variety of systems. What is required is the formulation of a long-term plan for the training of medical services personnel that conforms to the national long-term plans for training skilled personnel in general, after making a thorough survey of existing medical resources.

3-3 Active Participation by Local Residents

In developing countries today, awareness and participation on the part of local residents is needed more than ever before to raise community health levels. With the active participation of local residents, community-based health programs can become self-sustaining. In Japan, around the country, community groups arose to tackle public health problems at the community level. In Okinawa, faced with an extreme shortage of medical personnel, community-based health programs with broad participation by local residents contributed greatly to controlling parasites, tuberculosis, and malaria. Developing countries often already have community organizations of one sort or another based on gender, age, or occupation. It will be important to

³⁴ Funding for the project was provided by the Japan Medical Association. In this respect, it differed from the usual technical cooperation by JICA.

³⁵ Jinba, Masamine (2000) “*Nepal Noson ni okeru Koshueisei Katsudo no tameno Jinzai Ikusei –Nepal Gakko, Chiiki Hoken Project niyoru Bottom-up Shiki Approach no Jirei* [Human Resources Development for Public Health Activities at Rural Villages in Nepal –Case Study of Bottom-up Approach for the School and Community Health Project in Nepal], *Koshueisei Kenkyu* [Research on Public Health] Vol. 49 No. 1 pp. 37–43.

³⁶ Umeuchi, Takuo (2001) “Primary Health Care,” *Kokusai Hoken Iryo Gaku* [International Health and Medical Study] Kyourin Shobo.

stir these community groups into action and make positive use of those groups.

With an entry point whose results are immediately apparent, it is easier to encourage the community to actively participate. Since any person undoubtedly wants good health, much use should be made of the advantages inherent in the field of public health and medical services in attracting participation by local residents. Attention should also be directed at literacy education as is already being conducted in various countries. Under the above-mentioned SCHP in Nepal, literacy education is being provided to women between the ages of 15 and 45, demonstrating great effectiveness as an entry point for getting women in particular to become actively involved in community-based health projects³⁷.

We have examined specific examples of entry points such as snow removal and nameko mushroom cultivation in Sawauchi Village, and surgical procedures at Saku Central Hospital, although entry points will vary depending on the particular characteristics of each community. A number of coincidences have occurred in the examples given, so it is difficult to generalize from these entry points. An entry point can be identified for a particular community, however, by looking with great care at each set of needs of the local residents. It is also often the case that such a meticulous attitude will of itself bring about a transformation in the local residents.

In some developing countries, notwithstanding the success that some community groups can achieve in certain areas with the support of donors, the problem remains that those activities will often be difficult to apply on a nationwide basis, or will unravel once the donors' support comes to an end. When a community group arose in Japan to deal with a particular problem, the administration would

analyze and systemize their achievements, adopt them as government policies, and then budget for funding to expand the project throughout the country. Reflecting on Japan's experience in community-based health, as indicators for the spread and sustainability of activities by community groups, attention should be given to official commendations given for good practices, mass advertising campaigns conducted in the media, standardization of projects by government, and securing of government funding for projects when they were adopted as government policies.

3-4 Collaboration between Different Organizations

In order to conduct projects efficiently in the face of limited community resources, collaboration between a variety of organizations is essential. When organizations with different backgrounds tackle a common problem, results that no organization can achieve alone are possible. Japan's experience has shown that projects can then be transformed into a dynamic "movement." One specific method for such collaboration adopted by Japan to organize initiatives in the area of community-based health was participation by three particular players: 1) specialist leadership (hospitals, medical associations, universities, and research institutes); 2) active participation by local residents (various private sector groups and local neighborhood organizations); and 3) administration (regional governments, public health centers, and local governments)³⁸. Another method was the two-level organization process involving first a lower level organization of local neighborhood units, such as school districts and neighborhoods, as the smallest organizational units in the system, followed by the creation of a specialist organization at the municipal level that oversees the lower level organizations (see Figure 8-

³⁷ Jinba, Masamine (2000) "Nepal Noson ni okeru Koshueisei Katsudo no tameno Jinzai Ikusei -Nepal Gakko, Chiiki Hoken Project niyoru Bottom-up Shiki Approach no Jirei [Human Resources Development for Public Health Activities at Rural Villages in Nepal -Case Study of Bottom-up Approach for the School and Community Health Project in Nepal], *Koshueisei kenkyu* [Research on public health] Vol. 49 No. 1 pp. 37-43.

³⁸ Hashimoto, Masami (1968) *Chiiki Hoken Katsudo - Koshueisei to Gyosei-gaku no Tachiba kara* [Community Health Activities - From the Standpoint of Public Health and Public Administration], Igaku Shoin.

2). These methods are also worthy of consideration by developing countries in organizing their own community-based health initiatives.

3-5 Scientific Approach to Problem Solving

A major feature of Japanese initiatives was the scientific and efficient approach adopted by all parties, from the national government, local governments and doctors to public health nurses and livelihood extension workers, of resolving problems by assessing the particular characteristics of the community in question and its current medical needs, analyzing the relevant problems, and making the best use of existing resources. Since such problems cannot be resolved through a haphazard approach, what is ultimately required in developing countries is improved capacity building. The methodic resolution of problems (namely, first conducting a survey to gauge what the problems are, then devising measures to deal with them, and allocating resources rationally) will be more efficient in the end, and will probably also resolve the problems sooner. It is important that the developing country be the principal party that assesses the current situation. If that assessment can succeed in raising the awareness of the relevant parties, it holds promise for their attitudes towards undertaking initiatives to address subsequent problems.

3-6 Community-based Health and Multi-Sector Approach

It is no exaggeration to say that all factors pertaining to lifestyle, including living environments, income, and interpersonal relations within the community and the home, have an effect on the health of people within a community. In order to raise community health levels, it will therefore be necessary to combine health projects with an activity that targets the lives of the local community generally, such as education or rural development.

As mentioned above, community-based health initiatives naturally become more holistic when outreach activities are conducted from the perspective of “thinking with the local residents,”

and when the process of solving a community’s problems begins with an assessment of its current situation. Although gauging problems through fieldwork and solving the fundamental causes of those problems is often a difficult process, it has enormous potential for bringing well-being into people’s lives.

JICA has also conducted assistance in projects that have used an approach of combining community-based health projects with rural development programs for the community as a whole. For example, under the “Family Planning and Gender in Development Project Phase II” in Jordan in 2000~2003, after consultation with decision-making bodies in the community, income generating activities for women were adopted as the entry point. With the agreement of the husbands, fathers-in-law and mothers-in-law in the villages, and by getting men and women to think about working together to raise the level of health of mothers and children, it was decided to increase the number of family planning practitioners in rural villages. This project was planned on the basis that rural development and community health are inseparable. A multi-sector development perspective is the key to improving community health.

3-7 Conclusion

Community health should be tackled in an integrated manner, where a variety of players and a variety of measures work together based on the particular characteristics of the community in question. In addition, rather than as a particular fixed goal to be achieved, community-based health is better seen as a dynamically changing process involving constant trial and error, all the while aiming for greater well-being in people’s lives. Community-based health is by no means simply a problem solving method. Provided that people in developing countries and their supporters work as partners with local residents and see problems through their eyes, and scientific analysis lies at the basis of any ongoing and steady progress, little by little the people in communities can be mutually empowered through

even the smallest of achievements. While the progress achieved will be incremental, community-based health can indeed be regarded as a means

for gradually bringing people closer to achieving well-being in their lives.

Chapter 9

School Health Programs

Although it is essential to work with a local organization which takes a major responsibility to conduct public health activities in developing countries, it is hard to find such organizations precisely because government institutions and community organizations are generally weak. On the other hand, most developing countries do have educational facilities, in some shape or form, that provide elementary education to local children. Many of these schools have long played a central role in their community. It would be efficient to use such a school as the base for public health activities, and it would also have a major impact on the community. Providing health education to schoolchildren not only raises their individual health status, but we could expect to see an increase in the local residents' knowledge of health issues as a result of the children passing on the knowledge they acquire to other children, and all in turn pass it on to their parents.

While school health programs in Japan first began in Meiji Era of the late nineteenth century, the school health system of today has evolved in response to new trends in medical science and to the degree of development of Japanese society. At the beginning of Meiji Era, around 1870, school hygiene programs were launched as a means to control infectious diseases endemic at that time, such as smallpox and cholera. Then in the period immediately after the end of the Second World War, other school health programs were conducted to combat other diseases, in particular tuberculosis and gastrointestinal parasites. These programs not only succeeded in protecting schoolchildren from diseases, they also produced the additional benefit in that as schools were used as the primary base for programs to control diseases in the community, this

had a major impact in getting the local community involved in public health activities generally. As we entered the 1990s, the future course for school education placed greater emphasis on collaboration between schools, families and the local community. The connection between school health and community health was further boosted when local school health boards were set up, a concrete example of this collaboration.

As an inseparable part of Japan's school health experience, the school lunch program conducted in this country cannot be overlooked. Large-scale school lunch programs started in Japan with the aim of protecting schoolchildren from the consequences of poverty and inadequate diet, at a time of severe food shortages. Before long, however, the school lunch program was managed independently, considered as a part of the educational activities, and further, it provided a means of education. As a result, children became physically stronger, and people in the communities were able to raise their consciousness about their eating habits and improve their nutrition levels. Japan's experiences will be applicable in improving the situation in developing countries where people confront the same foods and nutrition problems.

In recent years, the WHO has been pursuing the expansion of its program "Healthy People and Healthy Cities" along with the program "Health Promoting Schools," and in a number of aspects of public health and medical services, it has been developing activities that use "school health" methods. In addition, UNESCO is currently promoting its FRESH Initiative (Focusing Resources on Effective School Health) as a comprehensive model for health education¹). Acting in cooperation

¹ UNESCO homepage (http://www.unesco.org/education/efa/know_sharing/flagship_initiatives/fresh.shtml)

with UNESCO in this initiative, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has been preparing a proposal to the World Food Program (WFP) to apply the school lunch model in developing countries. In this world trend, Japan's experience in school health programs can also suggest ways to improve community-based health and public health systems in developing countries at various stages of development.

1. The History of School Health Programs

Reflecting the development level of Japanese society at any given time, school health programs in Japan have always been implemented in ways appropriate to that level. School health programs began with preventing diseases and managing the health of schoolchildren. It has since expanded beyond those roles however, and now covers activities such as preventive health education for school-aged children, and promoting stronger collaboration between schools and the local community.

1-1 Pre-war School Health Programs

School health programs began in Japan with the establishment of the nation's educational system in 1872. Smallpox and cholera were prevalent at that time, and the first school hygiene measures were programs to control these infectious diseases. Infected individuals were banned from attending school, and subsequently all infectious diseases generally were brought within the scope of school health measures. Health checks conducted in Japanese schools today first began under the name of "vitality examination." The purpose of these examinations was to determine children's physiques and strength, through measurements of height, weight, chest circumference, grip strength and lung capacity. Attention was also given to school sanitation, and detailed standards were set out for the structure and size of school buildings and classrooms, as well as for toilets, plumbing, heating and lighting.

In 1898 the school physician system was introduced nationally, under which a school physician was allocated to all public primary schools in the nation. The core tasks of school physicians were to monitor school environmental health and conduct physical examinations, and were not expected to provide medical treatment at first. During Taisho Era, the second decade of the twentieth century, however trachoma was designated for treatment by school physicians, and treatment rooms were set up in schools where eyewashes were conducted and topical eye medication applied. MEXT's predecessor, the Ministry of Education, also actively promoted medical diagnosis and treatment in schools. Considerable effort was undertaken to control roundworm, hookworm and other gastrointestinal parasites in schoolchildren, and to treat skin ailments such as eczema and head lice.

Following the creation of the school physician system, physicians' workloads expanded rapidly. To meet the need for a professional to assist them, full-time school nurses were appointed. In 1929, the Ministry of Education stipulated that the duties of school nurses were to include disease prevention measures, assistance with diagnosis and treatment, disinfecting, caring for children under observation, assisting with health checks and school meals, and hygiene training. In 1941, the emphasis of school nurse duties changed from assisting with medical treatment to providing education and instruction. Furthermore, to demonstrate that they were members of a school's teaching staff, school nurses were designated "health instructors," and their appointment in schools was made mandatory.

1-2 Post-war School Health Programs

Immediately following the end of the Second World War, Japan was struck by a major outbreak of tuberculosis, which became a serious health hazard not just to schoolchildren, but also to the population at large. In 1946, preference was given to schoolchildren aged ten years and older for the yearly Mantoux Testing and BCG Immunizations. The 1949 revisions to the School Physical Examination

Table 9-1 Trends in School Health Programs

1 Pre-war School Health Programs	
1873	School system proclaimed; infectious disease prevention measures implemented
1878	System of “vitality examinations” (health checks) commenced
1890	School facilities regulations adopted (school environmental health)
1898	School physician system introduced
1900	School nurse system introduced
1941	School nurses designated as nursing instructors; their appointment in schools made mandatory (under the National Schools Order)
2 Post-war School Health Programs	
1946	Mantoux tests and BCG immunizations; parasite egg examination and extermination programs
1947	Nursing instructors renamed “health instructors”
1949	Health coordinator system created
1951	Tuberculosis Control Law promulgated: state to bear full cost of detailed examinations and immunizations
1954	School Lunch Law adopted
1958	School Health Law enacted
1988	Local government student health sections and school lunch sections amalgamated
1997	Report of Council for Health and Physical Education (stresses importance of collaboration between schools, families and local communities)
2000	“Kenko Nihon 21” (Healthy Japan 21) and “Sukoyaka Oyako 21” (Healthy Family 21) Campaigns launched (Ministry of Health, Labour and Welfare initiatives)

Ordinance provided for the addition of a detailed examination for tuberculosis to the items for examination. The Tuberculosis Control Law was enacted in 1951, providing for detailed examinations and immunizations to be conducted entirely at public expense. These measures facilitated the early detection and treatment of tuberculosis, and after peaking in 1951 the rate of new cases of tuberculosis began to decline slowly. Furthermore, examinations for parasite eggs and rigorous extermination programs carried out by Japanese schools also led to a spectacular decline in the prevalence of roundworm, hookworm and other gastrointestinal parasites among schoolchildren, where the immediate post-war period had seen very high infestation rates. Through repeated and regular action and treatment taken against other conditions including scabies, head lice and trachoma, in a few years

these too were wiped out. In addition, school lunches, which before the war had been provided only to impoverished or physically infirm children, were now made available to all schoolchildren, with the aim of protecting the nation’s children from the consequences of poverty and an inadequate diet. By 1950 the uptake rate for the school lunch program had reached 69%.

The School Health Law was enacted in 1958, creating the basic organizational framework for school health programs in Japan. GHQ had already taken the lead in inaugurating fully-fledged measures for health education as part of school health, but with the new law Japanese school health underwent a major conversion, from providing health care to providing education. Health and physical education courses became an integral part of school educational activities (which included individual subjects, morals, and school events),

and health education was transferred to the jurisdiction of the School Education Law. The School Health Law stipulated matters pertaining to school health planning; school environmental health; health checks (replacing the “vitality examinations”); health counseling; infectious disease control; school physicians, school dentists, school pharmacists, and nurse’s offices; reporting information to public health centers; and financial assistance for school diseases. Prior to this, in 1949 health coordinators, who were charged with the conceptual planning, implementation and administration of school health plans, were to be appointed to schools as members of their team of school health professionals. The appointment of health coordinators was important from the perspective of coordinating between school education and school health, and the coordinators themselves would be expected to fulfill a role similar to that of a school health coordinator in the U.S.A.

Systematic school health programs that took shape in the 1970s and the 1980s were modified in response to changes in society. In 1996 the Central Council for Education declared “Room to Grow” and “Zest for Living” as the keywords for the future course of school education in the twenty-first century, and it emphasized the importance of collaboration between schools, families and local communities. As a specific development in this process, emphasis was placed on the

comprehensive strengthening of school health boards and on setting up community school health boards. At the base of this approach lies the principle of “safeguarding and improving health based on the concept of health promotion.” There are great possibilities that this principle can be tied in with the concepts of the above-mentioned Healthy People and Healthy Cities Program the WHO is promoting in developing countries.

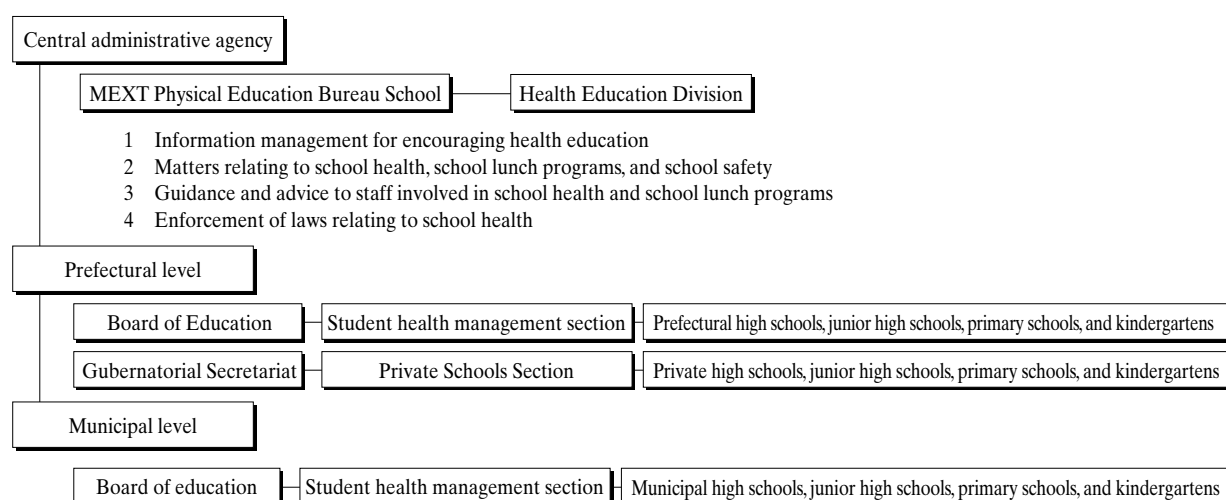
2. Main Initiatives in School Health

2-1 Administration of School Health

School health activities in Japan developed as part of school education, so systematic problems related to school health are naturally closely associated with the regulatory framework for school education. Japan’s school health administrative organization can be illustrated simply by the following descending chain of command: MEXT ⇔ Prefectural Boards of Education ⇔ Municipal Boards of Education ⇔ Schools.

The central government agency responsible for school health is the School Health Education Division (SHED) in MEXT’s Physical Education Bureau. It works in conjunction with the other MEXT Bureaus. The main areas for which SHED is responsible are the following:

Figure 9-1 School Health Administration



Source: Compiled by the author based on the data from Takano, Yo and Yanagawa, Hiroshi ed. (2000)

Box 9-1 Regular Health Check Schedule according to School Year

Health checks occupy an important place in Japanese school health. The medical examinations conducted today have their origin in the physical examinations that began in 1898 as a result of the “Schoolchildren and Children Physical Inspection Regulations” adopted the year before.

In the post-war period, the enactment of the School Health Law in 1958 laid the foundations for today’s system of health checks, including the dropping of the name “vitality examinations” for currently used. When Japanese people talk about these “medical examinations,” they are in fact usually referring to the “regular” health checks that are normally conducted in April of each year. The content of these health checks have evolved in line with trends in the diseases prevalent among school-aged children at the time, as well as advances in medical technology. The parameters examined in medical examinations as of April 2003 are many and varied, as the following table shows.

Regular Health Checks: Year Conducted and Examination Parameters

As of April 2003

Item	Examination or investigation	Condition looked for	Kindergarten	Primary (Year)						Junior High (Year)			High (Year)			University	
				1	2	3	4	5	6	1	2	3	1	2	3		
General health survey																	
Height Weight Sitting height																	
Nutritional status		Poor nutrition, signs of obesity, anemia, etc.															
Spine, chest Limbs Bones, joints		Bone or joint disorders															
Vision	Eye chart	Students with unaided vision	Unaided vision														
		Students with aided vision (spectacles, etc.)	Corrected vision														
			Unaided vision														
Color vision	Color vision test chart	Color vision disorders															
Hearing	Audiometry	Hearing impairment															
Eyes		Infectious diseases, other external eye ailments, ocular alignment															
Ears, nose, and throat Conditions of mouth and throat		Ear conditions; nasal and sinus conditions Disorders of voice or speech															
Skin		Infectious skin diseases Eczema, allergies															
Teeth and oral cavity Temperomandibular joint dysfunction		Caries and periodontal diseases Bite abnormalities, trismus Pronunciation disorders															
Tuberculosis	Indirect plain chest radiography	Tuberculosis															
	Direct plain chest radiography sputum testing, chest auscultation and percussion																
Heart	Laboratory investigations Other tests	Cardiac disease Cardiac abnormalities															
	Electrocardiography																
Urine	Urinalysis Diabetes mellitus	Renal disease															
Parasite eggs Sellotape method	Direct smear method Pinworm eggs	Roundworm eggs															
Respiratory system Circulatory system Gastrointestinal system Nervous system	Laboratory investigations Other tests	Tuberculosis, Cardiac disease, Renal disease, Hernias, Language impairment Psychological disorders, Bone or joint abnormalities, Movement disorders															

Note: – almost all students tested for this. – tested if necessary or for particular students who need to be tested for this. – can be omitted.

Color vision testing from 2003 (that is, can be omitted from examination).

Source: Health and Welfare Statistics Association

- 1) Promotion of health education in schools as a part of social education.
- 2) School health programs, school safety programs, school lunch programs, and disaster relief payments.
- 2) Providing guidance and advice concerning the health of schoolchildren.
- 4) Providing guidance and advice for school physicians, school dentists, school pharmacists, nursing teachers, school nutritionists and school lunch program officers.

The local government agency with responsibility for school health is the student health management section attached to each prefectural and municipal board of education. Its duties include the health and safety of teaching staff and students, welfare and recreation services, and school lunch programs.

2-2 Organization of School Health Programs

School health programs comprise three classes of activities: health education, health management, and public health organization activities. Health education is divided into health guidance and health learning; classroom teachers, nurse teachers and health teachers are responsible for these. Health management is divided into environmental management and personnel management. The former includes environmental safety, improving the environment, and sanitation inspections. The latter is subdivided into health management and lifestyle management. Health management issues include health checks (see Box 9-1), disease prevention, accident prevention, and the management of students with mental and physical handicaps. Lifestyle management involves the provision of guidance to students on lifestyle issues both in and outside school. Finally, public health organization activities are conducted to ensure the effectiveness of all school health management and health education activities. Through school health board and student council activities, the aim is to strengthen collaboration between schools, families and the local community, as well as collaboration with relevant

institutions and community groups such as student councils, housewives' associations, neighborhood associations, and PTAs. Collaboration with the local community not only addresses schoolchildren's health issues and improves schools' environmental health, but can also have a major impact in healthcare for the local community.

2-3 Parasitic Disease Control

Immediately following the war, the rate of gastrointestinal parasite infection in Japan exceeded 60% (see Figure 5-2 in Chapter 5). The hookworm infestation rate was also around 10%, causing those affected to develop anemia and malnutrition. These high infestation rates plummeted over the following two decades, and parasitic disease is hardly ever seen in Japan today. The principal causes for this improvement are Japan's economic growth and the accompanying improvements in sanitation, along with the switch by Japanese farmers from organic to chemical fertilizers. School health programs also made a major contribution to this improvement. At primary and junior high schools, inspections for parasite eggs were conducted twice a year as a school health measure, and individuals testing positive underwent thorough parasite extermination.

These programs were implemented by four parties working together: schools, government, parasite control associations, and parasitologists. Schools participated through classroom teachers and health teachers distributing and collecting stool test containers and distributing antihelminthics. The government played its part by providing financial assistance under the School Health Law and the Parasite Disease Prevention Law. The Japan Association of Parasite Control participated by devising extermination strategies and by providing group stool testing and treatments, and parasitologists provided support for the other three participants. Schoolchildren were also given health education on a regular basis, along with guidance on how to improve their school and home environment. The most salient feature of these parasite control initiatives was that they did more than simply exterminate

parasites - they were conducted as part of school health education.

2-4 School Lunch Programs

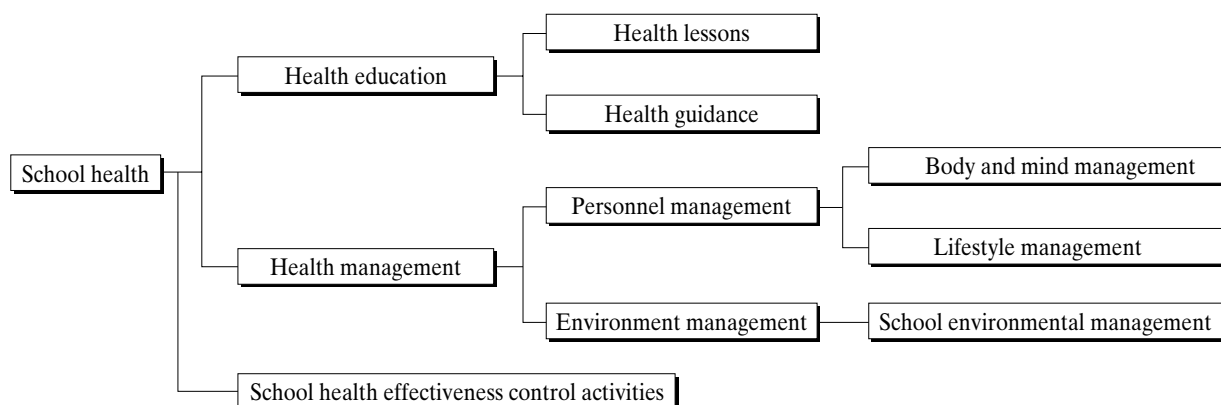
The origin of school lunch programs in Japan is said to be traceable to 1889, when lunches were offered at no charge to children from poor families in a private school in the Yamagata Prefecture, town of Tsuruoka (now Tsuruoka City). Before the war, up until 1945 however, school lunch programs were restricted to a few impoverished or physically infirm schoolchildren. More universal school lunch programs began only in the post-war period (a time of severe food shortages), with the objective of protecting schoolchildren from the consequences of poverty and an inadequate diet. The programs used supplies of powdered skim milk and other food aid received from the U.S. and other countries. A government circular released in 1946 stated that “in terms of strengthening schoolchildren’s physiques and providing nutritional education, it would be very beneficial to provide as many schoolchildren as possible with appropriately nutritious meals in schools.” Thus, besides impoverished or physically infirm students, all children were eligible for the school lunch programs.

Aid organizations working in Japan at the time included Licensed Agencies for Relief in Asia (LARA), which provided food aid from American NGOs; a UNICEF food program, which supplied powdered skim milk; and

Government Aid and Relief In Occupied Areas (GARIOA), the US occupied territories relief government fund which turned the donations of flour it received into a source of funds for meals programs. The programs received massive public approval at the time, and by 1950 the uptake rate for the school lunch program had reached 69%. GARIOA was disbanded, however, in the wake of the 1951 signing of the San Francisco Peace Treaty. Since GARIOA had been the financial source for purchases of food used in the meals program, this inevitably led to increased costs for the program, in turn forcing a number of schools to shut their programs down. In response, a nationwide movement arose, demanding the continuation of school lunch programs with government financial assistance, and there were calls to give the entire program a legislative basis.

In 1954 the School Lunch Law was enacted, establishing the basic framework for Japan’s school lunch programs. Article 1 of this law stated that “School lunches are to aid the healthy development of the mind and body of children and students, and contribute to improving the dietary habits of the general population.” Article 2 stated that the school lunch program is “to realize the objectives of education during the years of compulsory education,” making clear the fundamental principle that the school lunch program was part of schools’ educational programs. Organizations that established schools providing compulsory education (that is, primary schools and

Figure 9-2 Organization of School Health



Source: Ministry of Education, Culture, Sports, Science and Technology

junior high schools) were to endeavor to make school lunches available, and national and local governments were to exert efforts to work towards the healthy development of the system through the spread of the program.

This law also provided for financial assistance, both with the costs of setting up facilities and equipment needed to start a school lunch program, and to schoolchildren whose parents might have difficulties in paying for meals. The law continues to provide such assistance today. The party responsible for implementing the school lunch program is the organization that founded that school. The cost of facilities and equipment needed to run the program along with the costs of personnel are also the responsibility of the school board. The cost of food ingredients and other expenses are the responsibility of the child's guardian. If a guardian cannot afford this expense, and is eligible under the Daily Life Protection Law, the government can assist them with part of the cost.

The School Lunch Law stipulates that efforts are to be exerted to achieve the following targets in order to realize the aims of education:

- 1) Cultivate a correct understanding and proper habits in students with respect to meals in their daily life
- 2) Enrich children's lives at school, and cultivate cheerful social interaction
- 3) Strive to get children to adopt sensible dietary habits, to improve their nutritional intake, and to improve their health
- 4) Guide students to a proper understanding of the production, distribution and consumption of food resources

The school lunch program was devised to enable schoolchildren to eat meals that provide them with balanced nutrition. It contributes greatly to safeguarding and improving the health, and to strengthening the physiques, of schoolchildren in their growing years. The menu is specially designed to provide balanced nutrition using a combination of different foods, that children will enjoy eating. Care is taken so that

through the school meal children can get 55% of their daily requirements of calcium and some of the vitamins, that children tend to lack in their daily lives. This is another example of how school lunches play a large role in schoolchildren's nutritional intake.

Recent years have seen the emergence of problems affecting schoolchildren such as unstructured meal patterns, and unbalanced nutritional intake including excessive consumption of fats. Through the school lunch program, children in Japanese schools can be expected to acquire the correct knowledge of food, along with the dietary habits for putting that knowledge into practice.

3. Japan's School Health Achievements - Application in Developing Countries

School health in Japan has changed in various ways in accordance with social conditions and the state of development of the nation. Many positive outcomes have accordingly been achieved while responding to the demands of the times. In the immediate post-war period, schools were the center of programs to control and prevent widespread tuberculosis and high rates of parasite infestation, and in a short period of time there were massive declines in the prevalence of both. Schools were used as the base for the conduct of many disease prevention programs, and therefore contributed to improving the health of the community. At the same time, regular health checks allowed the early detection and treatment of diseases in schoolchildren. School lunch programs contributed greatly to safeguarding and improving children's health, and to strengthening their physiques. Finally, health education provided to schoolchildren did more than simply raise children's knowledge of health matters; it also served as an entry point for introducing health knowledge into their families, and thus fulfilled a major role in improving the health in the communities.

The outcomes described here were achieved against the social backdrop of their respective eras. These experiences and approaches could

also assist with redressing the health and hygiene issues that developing countries currently face. A discussion will follow here on some of Japan's experiences that may be applicable to developing countries.

3-1 Parasitic Disease Control

As discussed earlier, parasitic disease control programs in Japan did more than simply exterminate parasites. They were also implemented as a part of school health hygiene education. The most salient feature of parasite control programs in Japan after 1945 is that they were run by the local residents and sustained over the long-term using their own resources, meaning the community was spurred into engaging in activities that ultimately raised community health levels and their own living standards. As the means to that end, these programs were tied to school health, since the local residents' interest in parasite control could be aroused through their children. Hara (1999) has suggested the following as reasons for this linking with school health.

- (1) Primary schools and junior high schools represent coherent groups of people, allowing effective health control programs.
- (2) Because school-aged and pre-school children have high rates of gastrointestinal parasite infestation, they constitute the principal source of infestation for the entire community. Treating them is therefore highly effective in reducing overall infestation rates.
- (3) Testing for and exterminating gastrointestinal parasites involve public health education processes and outcomes that people can see for themselves. When parasite control programs are adopted in schools to educate children about parasite diseases and infection prevention methods, this knowledge can be passed on through the children to their families and the local community.
- (4) Children often have a strong tendency to listen to their teachers rather than their parents. This is because parents and

grandparents tend to give in to their children.

- (5) Schools and teachers are the psychological leaders of the community. The involvement of teachers influences local residents, making public health activities easier to implement.
- (6) If outcomes such as test results and the benefits of extermination are provided to the community, it arouses the interest of local residents. Word spreads to people from news reports and others in the community, and the activities are expanded to other schools and communities.

The basic concept here involves linking school health to community development. By using school health as a vehicle and taking "gastrointestinal parasite control programs" as an entry point, public health programs can be developed for the general community. This concept of an "entry point" can be employed in developing countries, replacing "gastrointestinal parasite" with "diarrhoeal disease" or "malaria" as appropriate, depending on the particular situation in the developing country in question. In large measure, this approach also uses the concept behind the integration projects that were discussed in the context of family planning in Chapter 4. In recent years, awareness has been growing around the world of school health and gastrointestinal parasites, and Japan is expected to make a contribution in the future to this field of international cooperation. At the present time, technical cooperation projects that use the school health approach in gastrointestinal parasite and malaria control programs are being developed at Thailand's Mahidol University and in four neighboring countries, Cambodia, Laos, Myanmar, and Vietnam. These projects are utilizing Japan's experience in school health (see Box 9-2).

As was mentioned in "1-2 Post-war School Health Programs," tuberculosis control initiatives were conducted in Japan combining the measures available under the School Health Law and the Tuberculosis Control Law. It is an example of the

major achievements possible with this approach. In developing countries, tuberculosis overwhelmingly strikes age groups older than schoolchildren, however, and DOTS (see p. 97) has become the mainstream form of tuberculosis control in recent years. Given those factors, other than the concept of health education, Japan's school health approach may be difficult to apply.

3-2 School Lunch Program

Since 1945, Japan's school lunch program has contributed greatly to improving the health of schoolchildren, to strengthening their physiques, and to their acquisition of proper dietary habits. As was mentioned in the preceding section, it should not be forgotten that, through children, knowledge and information about proper diet and nutrition was passed on to their families, in turn contributing to better health and hygiene in the local community.

MEXT's International Cooperation Policies Office submitted a proposal to the World Food Program (WFP) for an assistance program that would expand school lunch programs into developing countries modeled on Japan's experience, in cooperation with UNESCO. In response, the WFP and UNESCO conducted a survey of Japan's school meal program over March 12-15, 2003. The survey team visited several schools and shared kitchen facilities throughout Japan, where its members tasted program meals. It also conducted an exchange of views with members of a number of boards of

education. The survey team was favorably impressed as shown in the following observations:

- 1) A school meal program that started with overseas aid after the war had since taken root as a system sustained by domestic resources and efforts
- 2) Under the School Lunch Law, the school lunch program has been designated a part of school educational activities, providing education through the medium of food
- 3) Management of the program gave due consideration to safety and hygiene

Following this survey, the next course of action for this proposal will be the organization of study tours and the holding of international workshops for interested parties from developing countries regarding Japan's school lunch program. Representatives from MEXT also gave a presentation on Japan's school lunch program at the Workshop on Comprehensive School Health and Nutrition held in October 2002 in Chang Mai, Thailand under the joint auspices of UNESCO and the WFP. Workshop participants from developing countries showed great interest in the program as a successful example of a comprehensive model for health education, and it attracted many questions and generated considerable discussion. Japan's experience in school lunch programs since 1945 could accordingly be very instructive as a model for developing countries. In order to achieve effective collaboration and cooperation measures that suit the needs of the

Box 9-2 Summary of the International Control of Parasitic Disease Asia Center Project

At the 1997 Denver Summit, the prime minister of Japan at the time, Ryutaro Hashimoto, announced a development cooperation project (usually known as the Hashimoto Initiative) that would put Japan's experience in parasite control programs to good use in developing countries. Japan subsequently set up international parasite control centers in Thailand, Kenya and Ghana, where it developed personnel training programs principally for workers involved in parasitic disease control programs in neighboring countries. At Mahidol University in Thailand (inaugurated in 2000), training was given to personnel from Laos, Cambodia, Vietnam and Myanmar. This training principally comprised lectures that drew fully on the collective eradication, hygiene education and collective parasite testing methods developed in Japan in the 1940s and 1950s, mainly for application in primary schools.

particular country that intends to take up Japan's proposal, MEXT has already sent survey teams to a number of countries, to gauge how Japan's knowledge and experience in school lunch programs and school health can be applied.

3-3 Collaboration with Schools, Families and the Local Community

In order to implement community-based health programs in developing countries, a local entity or institution that can serve as a base in the community is essential. While small communities in many developing countries may not have a public health center, they almost always have a government or private school providing elementary education to local children, and the teachers in those institutions often fulfill a leadership role in the community. In addition, children who receive health education at schools in turn become "teachers," passing on what they have learned to their families and the community. The knowledge that they acquire spreads from child to child and then from children to parents, and ultimately can be expected to increase the health knowledge of all local residents. This demonstrates the possibilities to utilize school health in order to improve the health of local communities.

It is important to take a comprehensive approach involving collaboration with families and the local community in order to effectively link school health to community health. However, in developing countries, all too often the damage caused by top-down programs can be seen at the grass-roots level and in comprehensive development planning, little or no progress is being made at the national level.

In Japan, since 1945 a number of different parties have joined forces in comprehensive "rural development" and "social development" initiatives. According to Sato (2002), rural development in Japan represents a practical application of the Japanese "multi-sector approach," involving not only efforts to improve the necessities of life (under the slogan of "lifestyle improvement"), but also improvements in a diverse range of sectors such as education, public health and medical services, sanitation, and welfare services (see p. 153 to be checked). Parties from different levels (including regional and local governments, public health centers, agricultural extension centers, schools, agricultural cooperatives, and village organizations) were enlisted to implement the multi-faceted policies produced by central government agencies. Each individual outcome had a positive bearing on other outcomes, leading to a general increase in the affluence of rural communities. The potential for coordination between local community stakeholders that these top-down programs from central government offered was fully exploited, and as a result, out in the field these programs were put into practice using a multi-sector approach, and tied to overall rural development. School health and school lunch programs are included among the range of sectors mentioned by Sato, and school health was promoted by collaboration between teachers, school physicians, public health nurses, and livelihood extension workers. Schools were also actively involved and used as the venue for livelihood improvement campaigns. Japan's "escape from poverty" can be said to be partly the result of the school health and other

² As part of school health in Japan in recent years, efforts have been made to foster collaboration with local communities. In the Council for Health and Physical Education's 1997 report, MEXT declared safeguarding and improving people's overall health based on the principle of health promotion to be the future course for school health activities. In 2000 the Ministry of Health, Labor and Welfare announced the "*Kenko Nihon 21*" (Healthy Japan 21) and "*Sukoyaka Oyako 21*" (Healthy Family 21) programs, and with the enactment of the Health Promotion Law in 2002, health promotion plans are being formulated for each community. These are signs of the rapid progress being made in linking school health with community-based health. Public health organization activities have in recent times been a major feature of school health in Japan, where there are strong reasons for aiming for comprehensive school health through collaboration between schools, families and the local community. The opposite applies, however, at the healthcare grass-roots level in developing countries, where there are strong efforts to link with school health in order to improve healthcare services in local communities. Since community health services in many developing countries are not very advanced, the concept of "school health," as held in developed countries, may often fall on unreceptive ears.

comprehensive initiatives that have involved such collaboration with local communities. Such school health measures may be applicable in improving public health in developing countries². As was described earlier, at the international level the Health Promoting Schools and Healthy People and

Healthy Cities Programs are being expanded. In several developing countries the WHO is striving to link health promotion with school health, and linkages between school health and community-based health are likely to advance further in the future.

Chapter 10

Emergency Medical Care

In recent years, the provision of emergency medical services is beginning to attract attention as an important public health challenge in developing countries. Table 10-1 shows the major causes of death, and also DALYs (Disability-Adjusted Life-Years)¹, in ascending order of frequency in middle and low income countries. With early intervention, the highlighted conditions have been shown to be treatable. In other words, conditions that account for one-third of the major causes of death in developing countries (the total of the highlighted conditions is 33.8%) can be treated by emergency medical services. The issues against those diseases may differ in each developing country according to the stage of development. In

Southeast Asian Countries, the demand for trauma care and emergency care has increased dramatically, due to the increase in traffic accidents accompanying the rapid rise in population and urbanization, and the increase in lifestyle-related diseases, such as heart disease and diseases of the central nervous system, associated with lifestyle changes². For many years, selective programs in the field of maternal and child health, and pediatric infectious disease control programs, have been conducted in rural regions of low income countries as part of global public health initiatives. Most of these programs do in fact require urgent medical care for children such as diarrhoeal diseases, acute respiratory diseases and measles, besides

Table 10-1 Major Causes of Death and DALYs* in Medium and Low Income Countries

Cause of death	% of all deaths	Cause of loss of DALYs	% of all DALYs lost
1. Ischaemic heart disease	11.5	1. Lower respiratory infections	6.8
2. Cerebrovascular disease (stroke)	8.9	2. Perinatal condition	6.7
3. Lower respiratory infections	7.3	3. HIV/AIDS	6.6
4. HIV/AIDS	6.1	4. Meningitis	4.6
5. Perinatal condition	5.1	5. Diarrhoeal disease	4.6
6. Chronic obstructive pulmonary disease	4.7	6. Depression	4.0
7. Diarrhoeal disease	4.4	7. Ischaemic heart disease	3.5
8. Tuberculosis	3.4	8. Malaria	3.0
9. Traffic accident	2.4	9. Cerebrovascular disease (stroke)	2.9
10. Malaria	2.3	10. Traffic accidents	2.8
11. Hypertension	1.7	11. Tuberculosis	2.6
12. Measles	1.6	12. Congenital abnormalities	2.3
13. Lung cancer	1.6	13. Chronic obstructive pulmonary disease	2.3
14. Suicide	1.5	14. Measles	2.0
15. Hepatic cirrhosis	1.4	15. Hepatic cirrhosis	2.0

With early intervention, the highlighted conditions have been shown to be treatable.

* Disability-Adjusted Life-Years

Source: Razzak and Kellermann (2002)

¹ This is an indicator that comprehensively measures time (life-years) lost due to disease or disability, using the method of Murray et al.

² Chawla (1999)

obstetric emergencies. Because initiatives addressing these conditions have been developed as vertical programs, they have not contributed to the establishment of an emergency medical care system, providing “detection,” “transport,” and “treatment,” as part of a comprehensive public health system.

In recent years, the World Bank has included emergency medicine as one of its minimum packages of public health services³. The Integrated Management of Childhood Illness (IMCI) Strategy, jointly run by the WHO and UNICEF, also emphasizes the importance of triage⁴ and emergency care⁵. In this way, emergency medical care is rapidly being incorporated into health care systems to deal with medical conditions regularly seen in developing countries⁶.

The Japanese emergency medical system began around 1963 with reinforcement of the emergency transport system and the system of designated emergency medical facilities, in response to a rapid rise in the number of traffic accidents. This was followed by the systematization of emergency medical care, the establishment of the qualification of Emergency Medical Technician (EMT), and improvements in pre-hospital care, achieving the standards of emergency medicine of today⁷. Japanese initiatives in emergency medicine that may be applicable to developing countries in meeting their own challenges in this area include: emergency transport by the fire department; the “dial 119” emergency assistance system; the system of medical institutions accepting emergency patients; reinforcement of the pre-

hospital care system⁸; establishment of a system of “Emergency Medical Information Centers”; and nationwide expansion of designated emergency medical facilities. These initiatives will not all be applicable unchanged to the challenges in emergency care faced by developing countries today, but many of the basic ideas and systems they contain will provide useful hints in making improvements in the field of emergency medicine.

In this chapter, we first introduce the important trends in emergency medical care in Japan, and then discuss the aspects of Japan's experience that may be applicable to developing countries. Finally, we will analyze Japan's experience in terms of international cooperation with developing countries, based on the present state of emergency medicine in each developing country, according to its stage of development. In particular, we will examine emergency medical care for road trauma victims in metropolitan areas of Southeast Asia, and emergency obstetric and pediatric care in rural areas of low income countries.

1. Trends in Emergency Medical Care

1-1 Establishment and Expansion of Accident and Emergency Medical Centers (1960's~early 1970's)

Emergency medical care is often referred to as the starting point of medicine⁹. This is because it is often necessary to see patients with early symptoms, and determine whether there is a risk that they will in the future develop into a more

³ World Bank (1995)

⁴ This refers to a system of prioritizing treatment and transport for patients appropriate to the severity or degree of urgency of their illness or injury. Triage is required when a large number of casualties require assistance at the same time, such as in a natural disaster. In developed countries, triage is also used in pediatric emergency medical care, and not just in disasters.

⁵ Gove (1997)

⁶ Razzak and Kellermann (2002)

⁷ Hasegawa et al (2002) “*Kyukyu, Kyujitsu Yakan Iryo* [Emergency and Holiday Night Medical Care],” *Kokumin Eisei no Doko* [Activities in National Health], Vol. 49, No. 9, Health and Welfare Statistics Association. pp. 202–206.

⁸ Emergency treatment, either at an emergency scene or in the ambulance during transport

⁹ Okinaka et al (1976) “*Tomen Torubeki Kyukyu Iryo Taisaku Nitsuite* [The Measures against Emergency Medical Care in the Immediate Future],” *Kinkyu Iryo Kondankai Hokoku*, pp. 191–210.

serious condition, and in the case of emergency patients with severe conditions, it is often necessary to make the correct diagnosis, with no time for tests, and initiate treatment before the patient’s condition worsens.

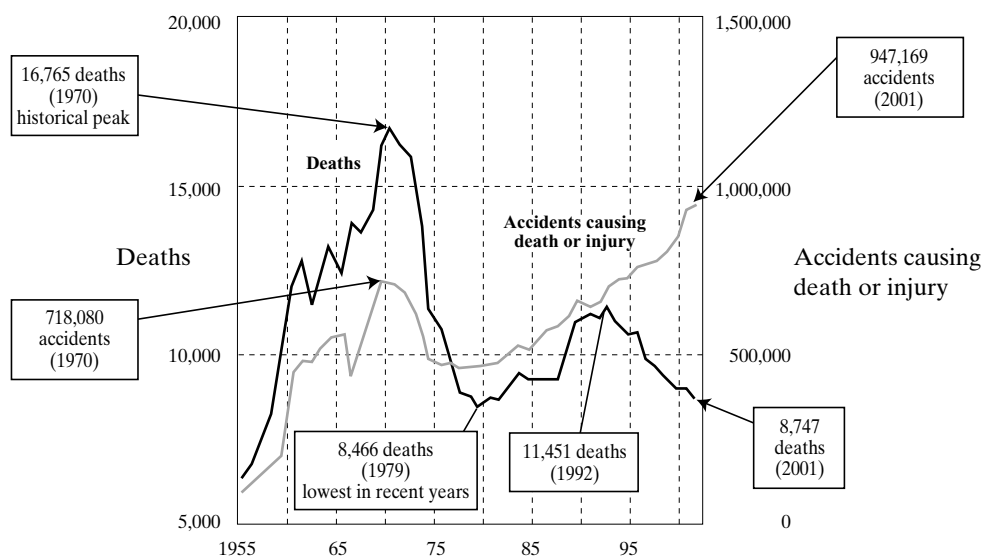
Emergency medical care in Japan was initially provided voluntarily by doctors mainly in private

practice, but controversy arose, leading to the introduction of a system to oversee the provision of emergency medicine in the early 1960s (see Table 10-2). This period corresponded to a time of advanced economic growth for Japan, a rapid increase in the rate of car ownership, and an associated jump in the number of traffic accidents

Table 10-2 Development in Emergency Medical Care in Japan

April 1964	Partial amendments Fire Defense Law make municipal fire brigades responsible for the transport of patients, such as those involved in accidents or natural disasters.
February 1964	Fire Department designated to transport emergency patients, designated emergency medical facility (emergency hospital) system commenced.
1974	Plans for a system of medical clinics offering holiday and night services (after-hours emergency centers).
July 1977	Ministry of Health and Welfare issues “Guidelines for Emergency Medical Service Strategy,” establishing system of initial, secondary and tertiary emergency medical services, to which emergency patients are allocated depending on the severity of their illness or injury.
July 1982	September 9 was designated as “Emergency Day” every year, with the surrounding week (Sunday to Saturday) to be “Emergency Medicine Week.”
April 1986	Fire Defense Law amended, allowing emergency patients with non-surgical conditions to be transported by ambulance.
April 1991	“Emergency Medical Technician (EMT)” program introduced, allowing emergency treatment to be given during transport under medical direction.
December 2002	The fundamental direction for a high quality and efficient emergency medical system suitable to the 21st century was announced.
December 1997	It was announced that, in order to improve pre-hospital care, the scope of action for EMT would be widened, to include defibrillation, endotracheal intubation and the administration of drugs.

Figure 10-1 Trends in Traffic Accident Deaths and Accidents Causing Death or Injury



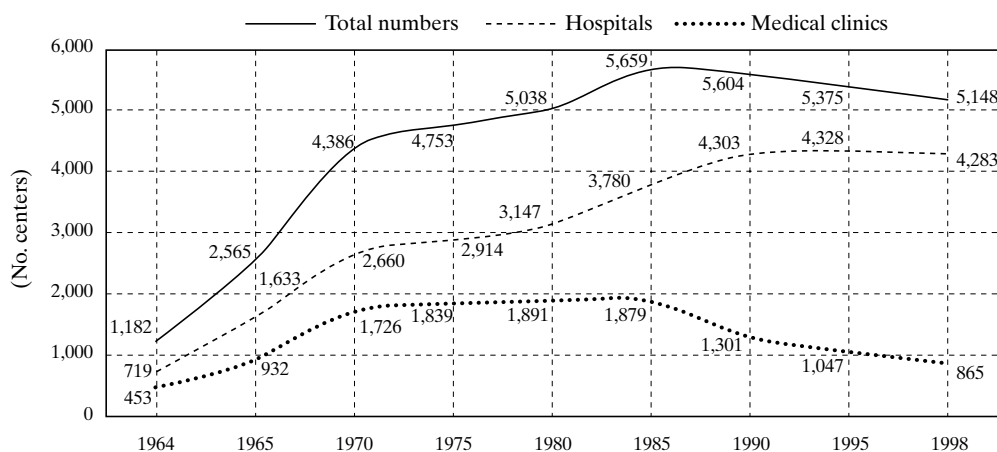
Source: Ministry of Land, Infrastructure and Transport, Road Bureau, Basic Planning Material

(see Figure 10-1). Amendments to part of the Fire Defense Law in April 1963 made municipal fire brigades responsible for the transport of patients, such as those involved in accidents or natural disasters. Accompanying this move, in order to expand the network of medical institutions able to accept emergency patients, the Ministry of Health and Welfare issued a Directive in February 1964, initiating the "Designated Emergency Medical Facilities System."¹⁰ This allowed for hospitals and medical clinics, mainly those with full surgical

services, that fulfilled certain criteria to apply to the Prefectural Governor for registration as emergency hospitals and emergency clinics.

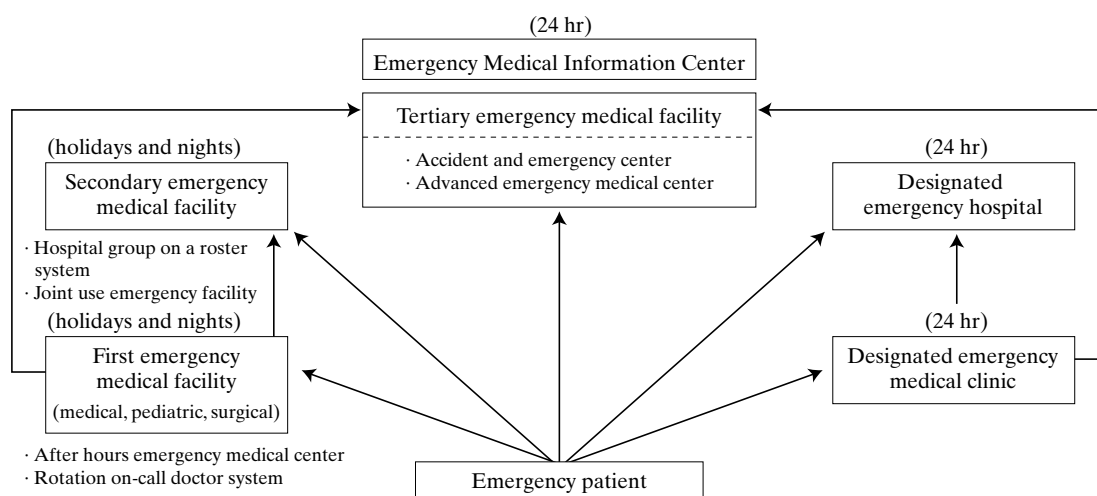
From 1967 until 1975, the establishment of "Emergency Medical Centers," based in public medical institutions, was promoted as part of measures to deal with traffic accidents. To ensure the availability of medical care for emergency patients after hours (weekends, holidays and nights), from 1972 "After-Hours Medical Service Strategy Committees" were set up at each public health center. From 1974, a

Figure 10-2 Numbers of Emergency Medical Facilities



Source: Otsuka (1991)

Figure 10-3 The Emergency Medical Care System



Source: Otsuka (1991)

¹⁰ Otsuka, Toshifumi (1991) *Kyukyuiryo* [Emergency Medical Care] Chikuma Library 67.

system of medical clinics offering holiday and night services (after-hours emergency medical centers) in every region was commenced.

1-2 Systematization of Provision of Emergency Medical Services (Late 1970's~1980's)

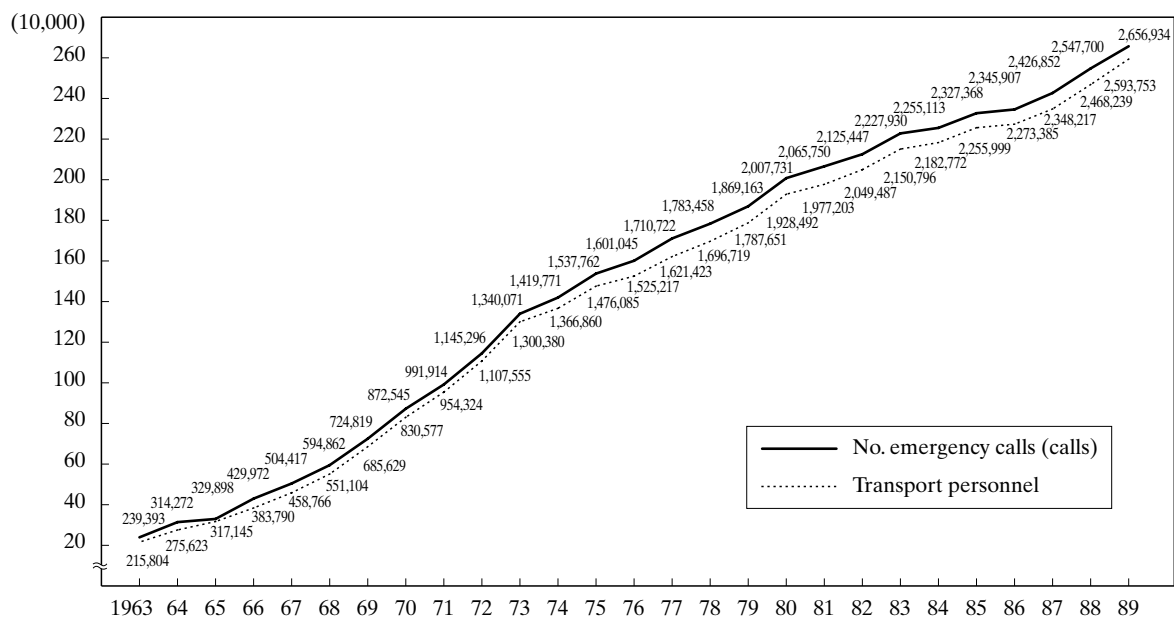
The number of designated emergency medical facilities increased steadily after its introduction (see Figure 10-2). The designated emergency medical facility has played a valuable role in emergency medical care in Japan, but the phenomenon of “emergency patients being passed from one hospital to another” developed¹¹, leading to calls for a new, more effective system.

In July 1977, the Ministry of Health and Welfare issued the “Guidelines for Emergency Medical Service Strategy,” aiming to institute effective management of emergency medical services. These guidelines instituted a three-tier system of emergency medical care, allocating patients according to the severity of their illness or

injury. Patients with mild conditions, not requiring hospital admission, received “initial emergency medical care”; patients with more severe conditions, requiring hospital admission, received “secondary emergency medical care”; and patients with serious conditions, unable to be dealt with by the second tier, received “tertiary emergency medical care” (see Figure 10-3). This systematization of the delivery of emergency medical care has led to a steady increase in the number of emergency calls and the number of emergency transport personnel (see Figure 10-4). At the same time, to ensure smooth communications between emergency medical facilities and the fire departments that undertake the transport of emergency patients, Emergency Medical Information Centers have been established in each prefecture¹².

The aging population and increase in lifestyle-related diseases has seen a marked increase in the number of emergency patients with non-surgical conditions, while the number of patients with

Figure 10-4 Trends in the Numbers of Emergency Calls and Transport Personnel



Source: Shinozaki et al. eds (1991)

¹¹ Sugimoto, Tsuyoshi (1996) “*Kyukyu Iryo to Shimin Seikatsu –Hanshin Daishinsai to Sarin Jiken ni Manabu* [Emergency Medical Care and Civilian’s Lives –Learn from great Hanshin Earthquake and Sarin Gas Incident] Herusu shuppan.

¹² Hasegawa et al (2002) “*Kyukyu, Kyujitsu Yakan Iryo* [Emergency and Holiday Night Medical Care],” *Kokumin Eisei no Doko* [Activities in National Health], Vol. 49, No. 9, Health and Welfare Statistics Association. pp. 202–206.

surgical conditions, mainly trauma, began to decline in the mid-1970s. Medical and pediatric emergencies now account for almost half of all ambulance trips. The Fire Defense Law was amended in April 1986, officially sanctioning ambulance transport for emergency patients with non-surgical conditions. The qualifying criteria for emergency hospitals and emergency medical clinics were also revised to reflect the increase in emergency patients with non-surgical conditions.

1-3 Expansion of Pre-hospital Care Provision (1990~1996)

With the introduction and acceptance of the new emergency medical system, quantitative targets were being met, but demand grew steadily for a higher quality and more accessible system of emergency medical care. Examination of the situation led the Ministry of Health and Welfare to conclude that an expansion of pre-hospital care was urgently needed, and in April 1991 the “Emergency Medical Technician (EMT) Program” was introduced, allowing emergency treatment to be given during transport under medical direction. The first national qualification examination was held in April 1992, yielding the first cohort of 3,177 EMTs¹³. Recommendations have also been made to establish an accident and emergency center in each prefecture, promote “doctor cars” (ambulances carrying medical practitioners as crew), train more doctors and nurses in emergency medical care, and increase research into emergency medicine.

As we have seen, the Japanese system of emergency medicine has undergone a gradual expansion. The rate of successful resuscitation of cardiac arrest patients has increased but little, however, and in comparison to Western countries, survival rates remain low. For survival rates

following cardiac arrest to improve, it is important that bystanders¹⁴ commence cardiopulmonary resuscitation during the interval between making the 119 emergency call and the arrival of the ambulance. Accordingly, training courses were held in each region for community residents to learn Basic Life Support (BLS, resuscitation techniques without specialized equipment). These were conducted by a first aid education and awareness network set up in 1993. The number of people attending at least the 3 hour basic resuscitation seminar has increased each year, with a total of 2,656,074 attendees over the 6 year period from 1992 to 1997¹⁵.

1-4 A New Approach to Emergency Medical Care (1997~present)

The emergency medical system in Japan has developed as a dual structure (see Figure 10-3). Firstly, based on the Fire Defense Law and the system of “Designated Emergency Medical Facilities” commenced in 1964, a system of medical institutions that will accept emergency patients brought in by ambulance was established. Secondly, the Ministry of Health and Welfare established a system of initial, secondary and tertiary emergency medical services in each region. The result was anxiety and confusion on the part of the public and ambulance staff alike, so to resolve this problem, in December 1997 the fundamental direction for a high quality and efficient emergency medical system suitable to the 21st century was announced. The new system integrated the designated emergency medical facilities based on the Fire Defense Law with the emergency medical services established with financial assistance from the Ministry of Health and Welfare. The term “designated hospital” was therefore abandoned, and replaced by emergency

¹³ Sugimoto, Tsuyoshi (1996) “*Kyukyu Iryo to Shimin Seikatsu – Hanshin Daishinsai to Sarin Jiken ni Manabu* [Emergency Medical Care and Civilian's Lives – Learn from Great Hanshin Earthquake and Sarin Gas Incident] Herusu Shuppan.

¹⁴ Family or other bystanders at an accident scene, or the scene of a sudden illness.

¹⁵ Fire and Disaster Management Agency Emergency Statistical Update Final Edition “Present State of Improvements in Emergency Services” (<http://www.fdma.go.jp/html/new/99gyoumu.html>)

hospital/emergency medical clinic (24 hour services) and hospitals on a roster system (hospitals that accept emergency patients only on their rostered days). At the same time, the system of “first, secondary and tertiary” emergency medical services within each secondary medical catchment area was finalized in the “Medical Services Plans” formulated by each prefectural government.

1-5 Future Challenges

Japan’s emergency medical system, initially developed to deal with an increase in the number of traffic accidents, subsequently met quantitative goals in establishing emergency medical facilities able to deal with any medical emergencies, and then sought to improve the quality of emergency medical care by upgrading the provision of pre-hospital care. Social changes, in particular the aging society and the falling birthrate, produce a number of challenges to the provision of high quality and efficient emergency medical care.

1-5-1 Pediatric Emergency Medical Services

Pediatric emergency medical services is an important challenge to developed and developing countries alike, and in particular has recently become a controversial issue in Japan. The demand for pediatric emergency medical services has increased due to elevated childrearing anxiety, associated with reduced birthrates and women entering the workplace. On the other hand, pediatricians in private practice are aging, and there is a shortage of pediatricians willing to work after hours. This has led to an imbalance between supply and demand, aggravated by erosion of regional emergency medical services, with persistence of small-scale emergency medical centers lacking facilities for pediatric cases. These

factors have led to pediatric patients, suitable for an initial emergency medical service, converging on the pediatric departments of regional general hospitals. This causes overwork and exhaustion in the pediatricians working at these hospitals, fuelling the social controversy¹⁶. A fundamental overhaul of the pediatric emergency medical system is required to address this situation, improving the quality of pediatric emergency medical care and correcting imbalances between regions. This should include the establishment of dedicated pediatric emergency medical centers, building medical teams with the emphasis on specialized pediatric nurses and other paramedical staff, and restoring pediatrician numbers through a revamp of undergraduate and postgraduate medical training.

1-5-2 Improvements to the Pre-hospital Care System (Emergency Medical Technicians)

A short-term goal in this area is expansion of the treatments emergency medical technicians (EMTs) are authorized to provide¹⁷, and expansion of the clinical experience they gain during the training process. In the medium to long-term, further improvements to the pre-hospital care system will require a thorough, scientific appraisal of the EMT program (including expansion of the range of approved treatments).

1-5-3 Emergency Medical Care in Remote Areas and Outlying Islands

The first plan for medical services in remote areas and outlying islands commenced in 1956 (establishment of medical clinics in remote areas), and the ninth plan commenced in 2001. A shortage of medical and dental practitioners is the

¹⁶ Ichikawa, Kotaro (2003) “*Shoni Kyukyu Iryo no Shorai Tenbo Niokeru Shonika Gakkai no Yakuwari* [The Role of Pediatric Society for the Future Prospect of Pediatric Emergency Medical Care],” *Nihon Shonika Gakkai Zasshi* [The magazine of Japan pediatric society] Vol. 107, No. 1, pp. 125–129.

¹⁷ In order to improve the survival rate of patients who go into cardiopulmonary arrest, it was recognized that the scope of action for EMTs needed to be widened. The 3 approved treatments to be introduced will be electric shock (defibrillation) not requiring a doctor’s instruction, endotracheal intubation under a doctor’s instruction, and the administration of some drugs under a doctor’s instruction.

ever present challenge, however. A system of emergency transport using helicopters and airplanes exists for some remote areas and outlying islands, with the cooperation of the relevant authorities, but a nationwide network of such services is needed.

2. Main Initiatives in Emergency Medical Care

As outlined in “1. Trends in Emergency Medical Care,” a number of initiatives have been conducted in Japan for the purpose of developing an efficient and high quality emergency medical system. Here we will introduce some of these initiatives that may be applicable to developing countries in solving their own emergency medical care problems.

2-1 Emergency Transport by Fire Department Personnel

From around 1955, Japan experienced a rapid increase in traffic accidents, due to a plethora of cars filling the narrow streets, inadequate traffic laws, and no distinction between the road surface and the sidewalk. Victims of traffic accidents were sometimes transported by police patrol cars attending the accident scene, and if they needed to remain horizontal, sometimes hearses were used. Fire engines began to fulfill this function of patient transport for two reasons: they had sirens, and they had space for patients to lie down. It was formally decided in 1963 that fire departments would become responsible for the transport of emergency patients. The system of designated emergency medical facilities as the destination for emergency patients was established in 1964. The emergency medical system in Japan can therefore be said to have been established to deal with road trauma, and records clearly state that emergency patient transport by fire engines was for patients involved

in outdoor accidents.

Fire fighting services were originally attached to the police department in Japan, but the police department was dismantled after the war by order of General Macarthur and GHQ. For a time, each municipality had both a local government police force and a national police force¹⁸. Fire fighting services gained their independence from the local government police force in 1948, and fire fighting organizations have been attached to local government ever since. The commencement of emergency patient transport by fire trucks led to emergency systems uniquely suited to each community. This could also have caused considerable problems, with emergency transport vehicles only able to operate within the narrow confines of their own municipality. As we shall see, the introduction of Emergency Medical Information Centers in each prefecture enabled the collection and dissemination of information across municipal boundaries, and the provision of a particularly efficient overall system.

As examples of emergency patient transport services in advanced countries, in the U.S. ambulance services are provided by local governments, community volunteer organizations, and hospital groups, whereas in France, ambulance services are provided by emergency medical organizations attached to hospitals, under legislative control. Few developing countries have a national emergency medical system in place, but some regions and cities have a variety of ambulance services, some hospital-based, others provided by local government, community organizations, and volunteer groups. A method such as that adopted by Japan, first establishing emergency services at the community level (local government), then setting up a wider information network, is worth consideration by developing countries as they set up their own emergency medical systems.

¹⁸ The police subsequently found that this duplicate system severely hindered police activities such as arresting criminals within the municipal boundaries, so in 1954 the various police forces were reunited at the prefectural level, restoring the situation to its present stable form.

2-2 “Dial 119” System for Emergency Assistance

With the 1963 revisions to the Fire Defense Law in April 1963, local governments became responsible for emergency services, while emergency medical facilities underwent a program of expansion. At the same time, a system was introduced whereby anyone dialing the number 119 on the telephone, anywhere in the country, was connected to their local “emergency service dispatcher.” This system, whereby emergency services are accessible by a single telephone number nationwide, is unparalleled anywhere in the world. Two major factors in the success of the Japanese emergency medical system are that the “Dial 119” system is easy for the public to use, and facilitates response by emergency services.

2-3 Expansion of Designated Emergency Medical Facilities

The system of “Designated Emergency Medical Facilities” was initiated in 1964 in response to commencement of emergency patient transport by the fire department, to provide hospitals and medical clinics that would accept these patients. Medical institutions voluntarily applied under this system to the Prefectural Governor for registration. The system of designated emergency medical facilities, part of the response to a sudden increase in traffic accidents, applied to medical institutions that were able to accept emergency patients around the clock. It was characteristic of the establishment of Japanese emergency medical facilities that these conditions were not made compulsory, but it was expected that medical institutions would independently and voluntarily make the effort to satisfy the criteria for registration. This made possible the provision of emergency medical services suited to the capacity of the services. This capacity gradually expanded, eventually leading to the independent development seen today.

2-4 System of First, Secondary and Tertiary Emergency Medical Services

In July 1977, Ministry of Health and Welfare issued the “Guidelines for Emergency Medical Service Strategy,” establishing a new system of first, secondary and tertiary emergency medical services, to which emergency patients are allocated depending on the severity of their illness or injury (see Table 10-3).

- 1) Initial emergency medical care is appropriate for patients with mild conditions, not requiring hospital admission, and is provided by after-hours emergency centers, established and operated by regional public organizations, or by a rotation on-call doctor system, run by the local medical association.
- 2) Secondary emergency medical care is appropriate for patients with more severe conditions, requiring hospital admission, and is provided by a roster system of hospitals in a given area, or by a joint use emergency facility.
- 3) Tertiary emergency medical care is required for patients with serious conditions, such as head injuries, stroke, or myocardial infarction, and is provided by emergency medical centers established by each prefecture.

This emergency medical care system was later amalgamated with the system of designated emergency medical facilities, forming the basis for the present system. In particular, the concept of functional differentiation of emergency medical facilities, with the second tier of medical services completing the emergency medical system close to the sphere of everyday life, is an important one. Medical institutions in developing countries are also often organized in 3 tiers, with public health centers in the first tier, provincial hospitals at the second tier, and central hospitals at the third tier. The Japanese system of division of responsibilities, and referral when necessary, is therefore likely to be applicable.

2-5 Establishment of a System of “Emergency Medical Information Centers”

In order to promptly transport an emergency patient requiring urgent medical attention to the most appropriate emergency medical facility, it is important to have a wide reaching emergency medical information system. This is the most immediately effective way of avoiding the phenomenon of “emergency patients being passed from one hospital to another,” and also allows the most efficient use of existing medical resources¹⁹. With this aim in mind, since 1977 emergency medical information centers have been established, each covering an entire prefecture, and collect information across municipal boundaries. These information centers gather information around the clock from each emergency medical facility regarding their bed states, ability to perform surgery, etc., and passes

on this information to interested parties such as the fire department and medical institutions.

The existing system was expanded in 1987, and renamed the “Large-scale Disaster and Emergency Medical Information System.” As of April 2001, it is operational in 38 prefectures nationwide. In addition to the previous emergency medical information system, the new system has a disaster medical information mode, with a common data entry system. Utilizing the internet to maintain a nationwide network, this system will become important in managing the medical response in the event of a disaster.

In this way, the emergency medical information system centralizes the dispatching system for all the municipal fire departments, unifies the information from emergency medical service providers over a broad area, and provides a superior information management system.

Table 10-3 Plan and Criteria for Restructure of the Emergency Medical System

Classification	Eligibility criteria
First emergency medical care	Provide treatment for emergency patients with relatively mild illness or injury.
After hours emergency medical center	In general, cities (municipalities) with population of at least 50,000 should have 11 centers. (If the population is over 400,000, there should be one center for every 200,000 population. However, the fractional number is over 100,000 population, they should have 5 more centers.)
After hours dental clinic	Established by cities on request from the prefectural government or Governor.
On call doctor system	After-hours medical treatment is available from on-call doctors on a roster organized by the local medical association.
Secondary emergency medical care	Provide treatment for emergency patients with more severe conditions, requiring surgery and/or hospital admission, in general referred from initial emergency medical facility.
Hospital group on a roster system	In general, each secondary emergency medical care system serves a given catchment area, with several hospitals providing after hours medical care using a roster system.
Joint use emergency facility	Apart from the above system, a section of a hospital run by the local medical association can be opened at night and on holidays, with the cooperation of local medical associations.
Tertiary emergency medical care	Provide 24 hour treatment for emergency patients with serious conditions requiring high level medical care, such as stroke, myocardial infarction, or head injuries.
Accident and emergency center	At least 1 dedicated center in each prefecture (multiple centers in some prefectures due to population or geographical factors), or one center for every 1 million head of population.
Emergency medical information center	Gather information from emergency medical facilities, and relay this information to medical institutions and the fire department. One center in each prefecture, to serve the whole prefecture.

¹⁹ Hasegawa et al (2002) “*Kyukyū, Kyūjitsu Yakan Iryō* [Emergency and Holiday Night Medical Care],” *Kokumin Eisei no Doko* [Activities in National Health], Vol. 49, No. 9, Health and Welfare Statistics Association. pp. 202–206.

2-6 Reinforcement of the Pre-hospital Care System

Pre-hospital care comprises emergency care provided by bystanders or volunteers in the community, at the scene of an accident or illness, and the EMT program, transporting emergency patients to hospital. It usually takes from five to six minutes from dialing 119 to the ambulance arriving at the scene. Resuscitation rates, on the other hand, drop to 50% after 4 minutes of cardiopulmonary arrest, and 25% after 5 minutes. To improve survival rates and prognoses of people who have gone into cardiopulmonary arrest, it is therefore essential that bystanders or family members at the scene of an accident or sudden illness make the emergency call and render first aid²⁰. With this in mind, resuscitation training courses for bystanders were commenced in 1993. The number of people attending these courses has steadily increased, and the proportion of patients with cardiopulmonary arrest who received BLS from bystanders is also increasing each year (13.0% in 1995, 15.1% in 1996, 16.9% in

1997, 19.7% in 1998).

Survival rates when bystanders give BLS are 1.9 times those when bystander BLS is not available, demonstrating a clear life-saving effect (see Table 10-4). First aid seminars for bystanders are therefore an essential part of improving pre-hospital care, and can be considered the support base for pre-hospital care. Community-based care activities by volunteers are also extremely important in developing countries, showing a common direction for basic activities.

The EMT program, as a profession specializing in emergency transport, commenced in 1991. EMTs undertake a 2 year course of school-based learning and clinical training following graduation from senior high school. They then obtain their qualification after passing a national qualification examination. With directions from a doctor, EMTs are therefore able to perform advanced resuscitation techniques in the ambulance during transport, including obtaining an airway, artificial respiration, defibrillation, and administering injections. At present, the “Foundation for

Table 10-4 Life-saving Effect of Bystander Emergency Care (January~December 1998)

	No. of patients with cardiopulmonary arrest	No. of patients surviving at 1 month	1 month survival rate
With first aid	15,923	830	5.2%
Without first aid	85,047	1,733	2.7%
Total	80,970	2,563	3.2%

Source: Fire and Disaster Management Agency Emergency Statistical Update Final Edition “Present State of Improvements in Emergency Services” (<http://www.fdma.go.jp/html/new/99gyoumu.html>)

Table 10-5 Effects of Introduction of Emergency Life-saving Technician (January~December 2001)

	No. of patients with cardiopulmonary arrest	No. of patients surviving at 1 month	1 month survival rate
With EMT treatment	29,386	1,839	6.3%
Without EMT treatment	9,767	340	3.5%
Total	39,153	2,179	5.6%

Source: Fire and Disaster Management Agency and Ministry of Health, Labour and Welfare “Study of Widening the Range of Activities of Emergency Medical Technicians” (<http://www.zck.or.jp/activities/2405/>)

²⁰ Kouda, Hiroaki (2002) “*Bai Sutanda no Juyosei to Kyukyu Kyumeishi no Yakuwari* [The Importance of Bystander and Roles of Emergency Medical Technicians],” *Kurinishia*, Vol. 49, No. 508, pp. 211–214.

Box 10-1 Emergency Obstetric Care

Although the demand for emergency obstetric care is high in developing countries, in Japan no system has been introduced in this area. The reasons for this include: there is less demand for emergency obstetric than for emergency pediatric care; although pediatric emergencies can occur at any time, obstetric emergencies are usually associated with childbirth; antenatal care is more readily available than in developing countries; and institutional births account for almost 100% of births in Japan. Other background factors that prevent the lack of a formal emergency obstetric care system from causing problems are the ease of access to midwifery centers and medical institutions, the links between midwifery centers and medical institutions, and the system of referral from primary to secondary medical institutions.

Ambulance Service Development,” a nonprofit organization, along with training schools based in 10 designated and other cities, train 1,400 EMTs each year. As of April 1, 2001, Japan had 4,563 ambulance services, with a total of 56,557 employees. Of these, 10,497 held the EMT qualification (18.6% of all ambulance service personnel), with 9,461 in active service (16.7%). There were 2,592 ambulance services with EMTs, or 56.8% of all services, and the Fire and Disaster Management Agency is promoting their training so that every ambulance service will have EMTs on staff.

The effects of the introduction of the EMT program can be seen in Table 10-5. The 1 month survival rate for patients treated by emergency medical technicians was 6.3%, 1.8 times (or 2.8% greater than) that of 3.5% for patients treated by regular ambulance personnel. The difference between survival rates has increased over the years, from 0.7% in 1995 to 1.7% in 1999, indicating an increased effect of the introduction of the EMT program. The result of treatment by paramedics in the U.S. is said to be a 15% improvement in the 1 month survival rate, suggesting that Japanese ambulance services still fall far short of Western standards.²¹

It has been pointed out by a number of observers that further improvements in survival

rates for patients that suffer cardiopulmonary arrest will require widening the range of permitted activities by EMTs. In December 2002, it was announced that, based on a support system for all ambulance staff, including EMTs, steps would be instituted to improve the quality and raise the standards of emergency services, increasing the range of treatments allowed for EMTs. Specifically, the three approved treatments to be introduced will be: 1) defibrillation, not requiring a doctor's instruction; 2) endotracheal intubation, under a doctor's instruction; and 3) the administration of some drugs, under a doctor's instruction.

3. Emergency Medical Services in Developing Countries in the Light of Japan's Experience

The particular challenges faced by a developing country in the field of emergency medicine are influenced by the stage of development of the country. In countries with delayed development, the conditions that constitute the main demand for emergency medical services will be pediatric conditions such as acute respiratory infections, diarrheal disease, measles, malaria, and obstetric emergencies

²¹ Fire and Disaster Management Agency and Ministry of Health, Labour and Welfare “Study of Widening the Range of Activities of Emergency Life-saving Technicians” (<http://www.zck.or.jp/activities/2405/>)

associated with complicated deliveries. In countries with a higher degree of development, apart from the above, demand for emergency services will also come from an increase in traffic accidents accompanying a rise in population, and an increase in lifestyle-related diseases, such as heart disease and diseases of the central nervous system, associated with lifestyle changes. Geographical considerations will often influence provision of emergency medicine, as it is of course possible that different patterns of disease will be seen between urban and rural areas within the same country, and access to medical services is often difficult in rural areas. We will discuss below how Japan's experience can be applied in developing countries, dividing them into two broad categories according to stage of development.

3-1 Road Trauma Care Centered in Municipalities in Southeast Asia

In considering how Japan's experience in setting up an emergency medical system can be of use in meeting the challenges faced by developing countries, our attention is first drawn to road trauma care in countries that are relatively advanced in development. For example, Asian nations such as Thailand, Indonesia and India are presently experiencing major social problems due to an increase in traffic accidents and industrial disasters associated with rapid urbanization and industrial development. In these countries, the pivotal role in the provision of emergency medicine is played by hospital emergency departments, where treatment is administered for road trauma. At the same time, programs are being instituted to improve pre-hospital care. These circumstances are therefore similar to those extant when the Japanese emergency medical system was commenced, so the Japanese experience should be applicable. JICA is presently conducting a technical cooperation project, the "Thailand National Project Trauma Center Project (TRAUMA)." We will analyze the Khon Kaen National Trauma Center as an example.

Japanese cooperation in this hospital has concentrated on the following aspects: 1) hospital

care; 2) pre-hospital care; 3) prevention and harm minimization in traffic accidents; 4) training and research center; and 5) modeling. In particular, Japan's experience has been brought to bear in the areas of pre-hospital care and the prevention and harm minimization in traffic accidents. Activities related to pre-hospital care include: reports to the local community, as well as first aid training and public information sessions; establishment of an emergency dispatch center; training of paramedics and volunteer ambulance personnel; and the formulation of guidelines for emergency services and rescue groups. Activities related to the prevention and harm minimization in traffic accidents include: public awareness programs; consultation with State Safety Committees; safety education for drivers, community leaders, and schools; road safety campaigns; and the conduct of surveys related to traffic accidents.

The main problems faced at the moment are: 1) although the ambulance service was set up to deal with an increased number of traffic accidents, the number of patients with non-surgical conditions requiring emergency transport is rising steadily; 2) because all emergency patients are taken to three designated hospitals in each region, while patients with mild trauma are increasing, more patients with severe medical conditions are being transferred from other medical institutions, necessitating re-examination of collaboration between hospitals; and 3) the emergency medical system in Khon Kaen City is under the jurisdiction of the Khon Kaen Hospital, so the question of whether this "Khon Kaen Model" can be applied throughout Thailand, from the cost perspective, is of major concern. As we can see, emergency medicine in Thailand, at first established to cope with an increase in traffic accidents, is going through similar processes to Japan's. Effective solutions to the above problems can therefore be found in Japan's experience: 1) establish an emergency medical system that allows for non-surgical patients from the start; 2) establish a three-tier medical system;

3) establish a system based on local government, with close cooperation between ambulance, police and medical services, and not hospital-based.

In the future, an “Emergency Medical Information Center” system, that can coordinate information over a broad area, will become necessary, at which stage consideration should be

given to a uniform nationwide emergency call system, such as the Japanese “Dial 119.” The Japanese excel at the establishment of information management systems like this one, and cooperation from experts in public health and medical systems, information technology, and administrative services will be important in setting up such a system.

Trauma Center Project, Thailand



Information sign for Khon Kaen Emergency Medical Information Center



Emergency Medical Command Center at Khon Kaen Hospital



Accident and Emergency Room at the Khon Kaen National Trauma Center



Training in defibrillation at the Khon Kaen National Trauma Center

Box 10-2 Challenges for Developing Countries in 3 Processes of Emergency Medical Care

Three core components of emergency medical care on the provider side are: 1) care in the community; 2) care during transportation; and 3) care on arrival at the receiving medical facility. In other words, in order to achieve the greatest possible reductions in morbidity and mortality from injury and illness, prompt commencement of treatment, rapid access to a medical facility, and appropriate care at that facility, are all essential. These aspects are strongly influenced by the stage of development of a developing country, and by geographical factors.

1) Care in the Community

The outcomes of traffic accidents and acute medical conditions depend on early recognition of the severity of the injury/illness, and the need for medical attention. Important factors in emergency care in the community include whether an emergency call system exists for reporting traffic accidents, and the prompt provision of first aid by bystanders. Access to health care in obstetric and

pediatric emergencies is also a major consideration in smooth provision of care in the community. In Zimbabwe, a significant proportion of maternal deaths are caused by avoidable factors, including the failure of health workers to identify serious complications and to refer pregnant women in a serious condition to a higher level of care.

2) Care During Transportation

Problems with transportation in emergency medical systems should be considered under two headings, care during transportation and whether there is an appropriate system of emergency transport. The quality of care during transportation is important in determining outcomes in traffic accidents and acute myocardial infarction, and some developing countries have introduced programs to improve survival rates, such as “doctor cars” (ambulances carrying medical practitioners as crew), and EMT programs. In many low income countries, however, the absence of appropriate emergency medical transport is a common barrier to emergency care. This may arise because of any of several factors inhibiting access, including the lack of an appropriate vehicle to transport patients from the community to the primary health care facility, the absence or inadequacy of roads, a lack of fuel, and the inability to pay for transport services. In urban Guinea-Bissau, 25 out of 125 acutely ill children died either on their way to hospital or while waiting to be seen at an outpatient clinic.

Ambulances are often used to transport patients from a primary medical care facility to a higher level of care. Some form of communication is needed to request an ambulance from the higher medical facility and in many cases there is no electricity, and no telephone services. In Malawi, it is often the case that a family member has to make the trip to the provincial hospital by bicycle to make the request for an ambulance to be sent out. In other words, in regions with no effective means of communication, it is not enough to simply furnish an ambulance. A method of notification, such as solar-powered radio communication, is essential.

3) Care on Arrival at the Receiving Medical Facility

The availability of prompt and appropriate treatment on arrival at a medical facility is the third component of emergency medical care. A health care facility’s capacity to provide medical care is determined by both human and structural factors. Human factors include the number and type of health care workers and their level of training. Structural factors include space, medications, supplies, and specialized equipment. The level of demand placed on the facility by the surrounding population can also affect which services are offered, and whether they can be accessed at short notice in an emergency. The situation regarding “hardware” and “software” varies greatly according to the country, region, and level of facility.

Medical facilities that can only deliver poor quality care have been shown to produce poor quality outcomes. Emergency triage and treatment (ETT) is generally the weakest link in an emergency medical system. A study in Malawi revealed that the condition of many children arriving at clinics with acute conditions deteriorated while they were waiting to be seen. This resulted in deaths and disability that may have been avoidable. In Mexico, “verbal autopsies” of 132 children who died revealed that the majority had been seen by a physician within the previous three days. Inappropriate medications and delayed referral to a tertiary hospital were judged to have contributed to more than half the deaths. A project aimed at improving initial triage and treatment drew up ETT guidelines, and evaluation of these guidelines has already demonstrated that they significantly decreased the time required to assess children in need of urgent medical attention.

Source: Produced by the authors, based on Fawcus (1996), Sodemann (1997), Tamburlini (1999), and Razzak & Kellermann (2002)

3-2 Emergency Obstetric and Pediatric Care in Rural Areas in Low Income Countries

For emergency medicine in rural areas in countries with delayed development, or middle to low income countries, Japan's experience with grass roots initiative in the fields of "maternal and child health" or "community-based health" may be more applicable than the emergency medical system that has developed since 1963. Below we will discuss how these initiatives can be modified to suit emergency medical care, under the following headings: 1) Care in the community; 2) Care during transportation; and 3) Care at the receiving medical facility

3-2-1 Care in the Community

In the above mentioned regions, the greatest

demand for emergency medical care comes from obstetric emergencies and acute illnesses in children. Once again, the three core components of emergency medical care on the provider side are care in the community, care during transportation, and care on arrival at the receiving medical facility. In many developing countries, medical emergencies often develop at home, so it is necessary to develop a system of early identification in the community and prompt access to health care. Community volunteers already play an important role, so a system that provides them with training in simple but vital interventions (e.g. establishing and maintaining a patient airway, controlling external bleeding, and immobilizing fractures using available materials) will be effective.

Box 10-3 A Feasible Emergency Medical Care Model for Developing Countries

A number of initiatives are currently being trialed in developing countries to meet the challenges faced in providing emergency medical care. Countries with delayed development are severely limited in what they can do by shortages of human and material resources, and find it extremely difficult to establish a comprehensive emergency medical system such as is seen in developed countries. Apart from some disease-specific and facility-specific programs, there are no successful models for systematically improving the overall provision of emergency medical care in developing countries. Fortunately, many developing countries already have programs focused on emergency obstetric care and/or the integrated management of childhood illnesses (IMCI). Such programs may provide the necessary framework for the creation of an inclusive, all-diseases approach to emergency medical care.

Razzak & Kellermann identify the following activities necessary to meet the central challenges in establishing an emergency medical system:

- 1) Community education on accessing emergency medical care, and administering first aid.
- 2) Establishment of a simple communication system for notifying the emergency medical system of patients requiring emergency medical care.
- 3) Provision of a means of transport (preferably motorized) for moving patients to the nearest medical facility.
- 4) Establishment of triage criteria to ensure efficient and timely utilization of existing resources at every level of the health care system.
- 5) Training of health center personnel in the basic principles of emergency medical care
- 6) Preparation of basic kits of instruments, supplies and medications, enabling trained personnel to provide appropriate care at each level of the system.

They also suggest the following strategies for creating or improving emergency medical

systems in developing countries:

- 1) The private sector and non-profit organizations are playing increasing roles in the health systems of many developing countries, these groups should also be consulted before implementing emergency medical systems.
- 2) Clear minimum standards for emergency medical care should be developed through consultation with interested parties.
- 3) Established primary care centers should be used as casualty collection points for ETT, in addition to their preventive and primary care functions. This will require staff training, and the provision of a simple kit of essential equipment and supplies.
- 4) Programmes should be implemented to teach the fundamentals of first aid to large numbers of volunteers.
- 5) The training of doctors and other health care professionals should include the principles of emergency care, including triage and treatment decisions.
- 6) Studies should be conducted regarding means of reducing costs, such as the use of cost recovery (user fee) systems, emergency loan funds for financing improvements to systems, and the development of emergency medical transport at no cost through private voluntary efforts.

Source: Razzak & Kellermann (2002)

3-2-2 Care During Transportation

The prevailing models of emergency medical transport used in developed countries are extremely expensive, and would be impractical for low income countries. Severe resource constraints, roads in poor condition, and fuel shortages seen in poor developing countries force the utilization of other options. In Tanzania, for example, modes of emergency transportation include motorboats, canoes, bicycles with trailers, tricycles with platforms, tractors with trailers, reconditioned vehicles, and ox carts.

3-2-3 Care at the Receiving Medical Facility

The greatest problem with emergency medical care once the patient has reached a medical facility is emergency triage and treatment (ETT). A number of international public health projects aimed at improving ETT are under way at present. An example of Japanese cooperation is a successful pediatric medical care project run in Egypt at the Cairo University Pediatric Hospital (CUPH). This project introduced pediatric triage and flow planning (efficient waiting lines for illiterate

patients who crowd into the hospital as soon as it opens), as well as some basic measures such as thorough infection control and nutrition supplementation in the intensive care ward, and transferring patients no longer critical to regular wards. The triage and flow planning systems in particular are now well established, and the CUPH is able to fulfill its role as the only public pediatric emergency medical facility in Egypt.

As we have seen above, even without high-level medical facilities and transport systems, it is possible with a little ingenuity to ensure a reasonable level of emergency medical care. The key may be the use of existing human and material resources, and concentration on analyzing and solving existing problems. Please refer to Box 10-3 for an earlier analysis of possibilities for emergency medical care in low income countries.

An example of cooperation in IMCI (Integrated Management of Childhood Illness) is a program in Nepal involving a number of donor organizations including JICA. This project suggests ways in which an emergency medical

system may be established at the community level as part of the overall field of pediatric medical care. IMCI generally involves activities at all levels of the health system, from primary care center to tertiary hospitals, but the Nepal project, placing particular emphasis on community-based programs, was known as the Community-based IMCI Project. Female Community Health Volunteers (FCHVs) were given five days of IMCI training, improving recognition of acute respiratory infections (ARI) so that the incidence of severe pneumonia declined significantly. Possible reasons for this include the following: although medical facilities (health posts) are open limited hours, FCHVs are on call 24 hours in the villages, and are very easy to access if there is a

sudden change in a child's condition; prompt treatment of ARIs means fewer exacerbations; severe cases are promptly referred to higher level medical facilities; and the guidelines for the treatment of the individual conditions specified in IMCI are easy to understand. This shows that by basing operations in the community, IMCI projects are strongly linked to emergency medical care. Japan's experience in achieving improvements in maternal and child health without developing a specific emergency obstetric care system has been reflected in cooperation in this project, and further suggests new possibilities for low income countries for initiatives in developing their own emergency medical systems.

IMCI in Nepal



Community level IMCI training

Chapter 11

National Health Insurance

Currently, many developing countries lack a medical insurance system with universal coverage, so access to medical services is difficult, particularly for people living in poverty. The link between sickness and poverty cannot therefore be broken, creating a large barrier to the elimination of poverty. In these circumstances, starting with the newly industrialized countries and the countries that are developing economic power and have comparatively stable administrative capabilities, the opportunity arises to aim for national universal insurance.

Japan is unique among advanced countries in having a publicly managed universal health insurance system. Furthermore, it has the distinction of having been established before Japan entered a period of advanced economic growth, an example that should be useful to developing countries. The greatest characteristic of Japan's public medical insurance system is that it is a Universal Health Insurance Coverage, featuring a very high level of equality that enables "anyone, anywhere, any time" to receive the same quality of medical treatment for a small out of pocket contribution.

This chapter will first provide a summary of the history of Japan's medical insurance system, then introduce the current system, and discuss the characteristics of Japan's medical insurance system in comparison with a number of other countries. In conclusion, we will sum up Japan's experience that may be relevant to developing countries in establishing their own medical insurance systems.

1. History of the Medical Insurance System

1-1 Birth of Medical Health Insurance (1900~1944)

Medical health insurance in Japan started in early 1900, when some government enterprises and large private corporations introduced mutual benefit associations, but the national system started with promulgation of the Health Insurance Law in 1922. This law was extremely limited in scope, however, covering only employees in businesses covered by the Industrial Law and the Factories Law, and adequate medical treatment was not guaranteed (in 1920, there were about 770 labor unions, of which about 45 unions were functional)¹. Agricultural workers, who comprised the majority of Japanese people at that time, were not covered, and in agricultural villages subjected to panic after World War I, the weight of medical expenses increased the burden of poverty.

On the other hand, organizations resembling health insurance cooperatives had existed as mutual-aid organizations in rural villages since the Meiji Era (1868~1912) in Japan. The government introduced the National Health Insurance Law in 1938 to extend this system into a national system to cover those not formally employed, particularly farmers. In the following year of 1939, the Employees Health Insurance Law and Seamen's Health Insurance Law were enacted, further expanding the range of people benefiting from

¹ The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Year's History, Ministry of Health and Welfare (descriptive version)] Kosei Mondai Kenkyukai.

health insurance coverage². During World War II, at the end of 1943, the National Health Insurance system had already spread to 95% of municipalities throughout Japan, and with the exception of the major cities, near universal health insurance had been achieved, making this the “First Age of Universal Health Insurance”³.

1-2 From the End of the War to the Establishment of Universal Health Insurance (1945~1961)

When the confusion after the end of World War II settled, establishment of universal health insurance was for some while regarded as a major aim. Although the First Age of Universal Health Insurance was achieved before the end of the war, Japan suffered great economic and social damage during World War II, and was affected after the war by serious economic depression and high prices, bringing the National Health Insurance system near to a collapse. At that time, about one-third of Japanese, largely engaged in agriculture and their own businesses, were not covered by health insurance, so it was a priority to introduce health insurance to cover these people⁴.

For several years after 1945, every effort was devoted to rebuilding the health insurance finances, through revision of the average monthly wage, an increased health levy rate, and expansion of the number of people eligible for health insurance. In 1956, the social security system committee issued its “Recommendations concerning Medical Insurance.” These recommendations gained considerable public support, and in 1958 a new National Health Insurance Law was enacted, with the Universal Health Insurance Coverage for all people commencing in April 1961.

1-3 Phase of Revisions to the Health Insurance System (1962~1981)

Universal Health Insurance Coverage was thus introduced as described above. There was, however, a disparity in that insurers in National Health Insurance alone incurred a co-payment of 50%, whereas those covered by employee health insurance had no co-payment component. To correct this disparity, efforts continued up to 1980 to reform the system to reduce the patient's burden and make it easier for the economically disadvantaged to receive treatment, by means such as reducing the maximum co-payment for the National Health Insurance system to 30%, and using taxation funding to pay for health insurance payment deficits. These methods are considered to have greatly improved consultation rates, particularly for elderly patients.

In 1973, the government introduced the elderly medical fees payment system, whereby medical costs of the elderly were paid by public funds, and this year was called the “First Year of Welfare.”

1-4 Phase of Response to the Aging Society (1982~present)

Although the aging of the population had already started in Japan in 1955, and the birth rate continued to decline after that, the mortality rate of the elderly declined so rapidly that the speed of aging of the population increased beyond expectations. As society aged quickly, the financial burden of medical costs for the aged drastically increased, and from 1982, the social security system underwent reform. In the medical insurance system also, in 1982 the prevention, treatment and rehabilitation of illnesses was

² Murakami, Yoichiro (1996) *Niju-seiki no Nihon (9) Iryo - Koreishakai he Mukatte* [Japan in 20th Century (9) Medical Care – Toward Aging Society] Yomiuri Shimbun Sha.

³ The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Year's History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai., Hiroi, Yoshinori (1999) *Nihon no Shakai Hoshō* [Social Security of Japan], Iwanami shinsho.

⁴ The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Year's History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai.

Table 11-1 Major Developments in the Japanese Medical Insurance System

1922	Health Insurance Law enacted
1938	National Health Insurance Law implemented
1961	Universal health insurance coverage achieved
1982	Law for the Health and Medical Services for the Elderly enacted
1984	User co-payment of 10% introduced to employee health insurance
1997	User co-payment lifted to 20% for employee health insurance
2000	Long-term Care Insurance Law implemented (user co-payment of 10%)
2000	Fixed co-payment of 10% introduced for the elderly (elimination of partial payment of pharmaceuticals cost)
2001	Aged health insurance, user co-payment of 10% introduced
2003	User co-payment lifted to 30% for employee health insurance, basis for calculation of health insurance premiums changed from monthly to annual income

* Currently undergoing evaluation of fundamental reform for the 21st century.

standardized, and the Law for the Health and Medical Services for the Elderly was enacted, requiring partial co-payment of elderly medical expenses. A scale of appropriate medical expenses (increasing the user co-payment rate, etc.) was also promoted.

As the aging of the society continued, the increased prevalence of chronic illnesses such as lifestyle-related diseases caused rising treatment costs, while health insurance income slowed due to reduced income growth as the economy entered a period of slow growth, creating a structural deficit for the various medical insurance systems. In response to this situation, in 1997 system reforms were instituted, such as changing the health insurance benefit and contribution rate, and in 1998 the aged health costs contribution was revised⁵.

In 1994, the Long-term Care Insurance Law was promulgated (implemented from 2000), and part of the moneys provided for aged treatment were provided to welfare services, promoting an integrated approach to medical treatment, health insurance, and welfare.

In 2002, the government unveiled its overall

plan for reform of the health system, and in March 2003, the Cabinet adopted the “Basic Policy concerning the Health Insurance System and Medical Remuneration System.” It is currently evaluating fundamental reform proposals, including the creation of a new Elderly Health System (replacing the Aged Health System), aimed at constructing a sustainable health insurance system for a truly aged society.

2. Overview of the Public Medical Insurance System

2-1 Outline of the Medical Insurance System

National public health systems can be broadly divided into two categories: either the government itself is the provider of medical services (as in the United Kingdom and Sweden); or the social insurance system compensates individuals for the cost of medical expenses (as in Germany and France). Japan’s system is modeled on the German health insurance system, and therefore falls into the latter category.

⁵ Nakamura, Yoshio (1998) *Kosei Gyosei* [Government Administration of Medical Affairs], Gyosei.

Under the medical insurance system in Japan, beneficiaries can access medical services at any medical institution in the country on the production of a valid healthcare certificate. As Table 11-2 shows, the current health insurance system comprises several independent sub-systems, which can be broadly classified as either employee (or occupational) health insurance for employed workers, or regional National Health Insurance, generally for self-employed persons. Employee's health insurance plans include health insurance (where the insurers are the government and the health insurance associations), seamen's insurance and mutual aid associations. Across-the-board healthcare for the

elderly (70 years and over⁶) is a common feature of all systems.

The level of benefits paid varies according to the medical insurance plan, as well as factors such as the circumstances of the insured (the employee or individual) and the insured's family, and whether treatment is received as an inpatient or outpatient. Under employee's health insurance and the National Health Insurance System, the insured and dependent relations are required to contribute 30% of costs (as of April 2003). Elderly persons contribute only 10%, with a monthly ceiling of ¥3,000 for outpatients and ¥37,200 for inpatients. Expensive medical procedures are subject

Table 11-2 Summary of the Japanese Medical Insurance System (as of June 2003)

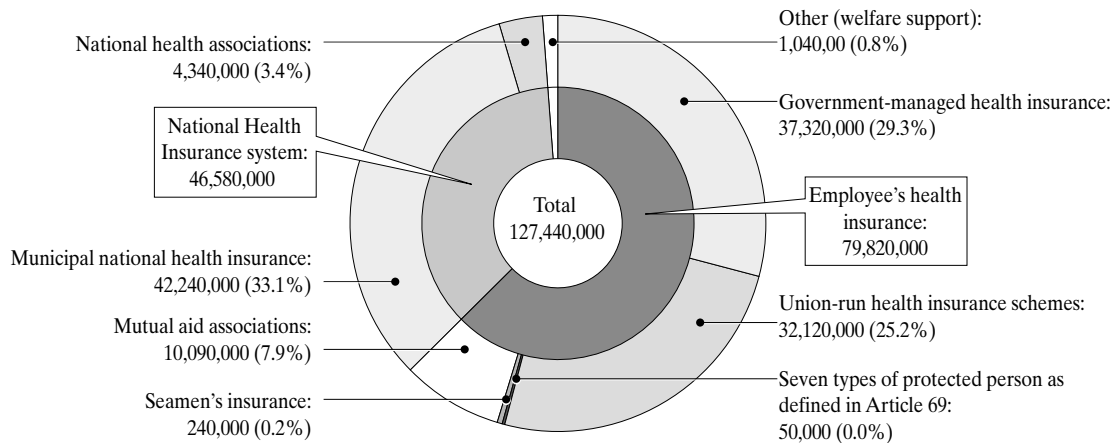
Scheme		Eligibility	Benefits		Funding	
			Co-payment	Maximum limit on contributions in the case of expensive medical procedures	Premiums	Treasury/subsidies
Health insurance	Government	Employees of small and medium enterprises	(1) Insured and family members = 30%			Premium rate = 8.2%
	Health associations	Employees of major enterprises	(2) Medication purchased separately	Premium rate depends on circumstances of insured; usually split 50/50 between employee and employer (legal maximum = 9.5%)		—
Seamen's insurance		Seamen				—
Mutual aid associations		Public servants (national government) Public servants (local government) Private education teaching staff				None
National Health Insurance system (municipalities)* ¹		Farmers and farm workers Self-employed persons	(1) Insured = 30% (2) Medication purchased separately			Fixed portion and variable proportion (depending on ability to pay) for each individual household
Health insurance for the elderly* ²		Usually persons 70 years or older	(1) Outpatients = 10% (2) Inpatients = 10%		Contribution Government (national, prefectural, municipal) = 30% Contributions from insured = 70% (until Sep 2002)	

Notes: *1 Includes retirement medical insurance scheme.

*2 The minimum eligibility age for benefits will be progressively raised to 75 years between October 2002 and October 2012, and the government contribution towards the medical expenses of elderly persons will be progressively increased to 50%. Monthly ceilings on personal contributions and fixed-price contributions have been abolished and replaced with a uniform 10% contribution rate (20% in high income brackets).

Sources: Based on Ministry of Health and Welfare website, Health and Welfare Statistics Association, Nakamura, Yoshio (1998).

⁶ 65 years and over for persons where the insured is bedridden.

Figure 11-1 Breakdown of Enrollments in the Medical Insurance System

- NB:
- Classifications may differ between schemes.
 - Employee's health insurance membership applies to the insured and their family/dependents.
 - National Health Insurance membership applies to all persons other than employees.

Source: Ministry of Health, Labour and Welfare website

to a separate system under which contributions are waived above a maximum limit determined in accordance with the insured's income level⁷.

In addition, various forms of direct cash payment are also available, including sickness allowance, moving expenses, lump sum payments for childbirth and child rearing, childbirth allowances and funeral expenses.

Insurance premiums are either deducted from the employee's pay (for employee plans) or paid directly to the municipality operating the insurance system (for the National Health Insurance system). The amount of the premium payable is calculated as a fixed percentage of the insured person's income. The percentage rate (called the premium rate) differs between employee's health insurance plans and the National Health Insurance System. There is also variation among employee's health insurance plans, particularly between health insurance systems managed by mutual aid associations and unions and government-run plans,

and even among the former, the premium rate can differ depending on the job or position. The premium rate is 8.3% in government-managed health insurance plans; premium rates in non-government systems vary but the maximum rate under law is 9.5%⁸. The premium rate in the National Health Insurance system is a combination of a fixed sum per household and a percentage contribution based on income level. The exact method of calculation can differ between municipalities, who are the insurers.

2-2 Long-term Care Insurance System

In addition to the medical insurance plans described above, a long-term care insurance system was introduced in April 2000 to accommodate the needs of the rapidly aging Japanese society.

Long-term care insurance is administered by municipal authorities. It applies to all Japanese citizens aged 40 and over, who are divided into Type 1 (aged 65 years or older) and Type 2 (aged

⁷ From April 2003, the monthly ceiling is ¥35,400 for those in low income brackets, ¥79,890 for average earners and ¥220,110 for those earning ¥560,000 per month or more. An elderly person (aged 70 or more) who earns more than the threshold value is considered to be working, and pays ¥40,200 (average income bracket) or ¥15,000 ~ ¥24,600 (low income bracket).

⁸ Revised December 2002.

between 40 and 65 years) categories. Long-term care benefits are funded 50% by the state and 50% by insurance premiums payable by the insured. The premium in the Type 1 category is a fixed amount determined by each municipality separately, which is deducted directly from pension payments (where applicable). In the Type 2 category, premiums are collected by insurers in the form of an extra levy (a fixed amount throughout the country) added to medical insurance premiums. Benefits are payable to any Type 1 citizen recognized as being in need of nursing care or other support, and to Type 2 citizens requiring nursing care or support in connection with illnesses or conditions associated with aging, such as Parkinson's Disease. The long-term care insurance system covers nursing care services in the home, elderly people's homes, and other recognized forms of nursing care and support. Benefits are paid in the form of the services. The user contribution is 10%.

2-3 Welfare and Medical Expenses Support Systems

The medical insurance system described above is complemented by welfare support and publicly funded medical services.

2-3-1 Welfare System

Any household with a total income below the minimum cost of living as determined by the government, that also satisfies certain criteria (such as absence of financial support from other families) is eligible for welfare support. Medical expenses incurred by households on welfare support are paid out of health support, with no co-payment required.

2-3-2 Public Funding System for Medical Expenses

Public funding for medical services comes in many different forms, such as state guarantees,

social protection and social welfare. State guarantees include benefits for medical treatment paid under the Law for Special Aid to the Wounded and Sick Retired Soldiers. Social protection includes the provisions of the Tuberculosis Control Law, the Mental Health and Welfare Law, the Narcotics Control Law, and laws for Infectious Disease Control and Patients with Infectious Diseases. Medical services related to social welfare, meanwhile, are provided for under the Daily Life Protection Law, the Law for the Welfare of Disabled Persons and the Child Welfare Law.

Public funding is also provided for treatment of specified illnesses (specifically, 45 listed illnesses including SMON and myasthenia gravis) and for the care of children with chronic illnesses (10 listed illnesses including malignant neoplasia and asthma).

In addition to public funding at the national level, local governments also provide funding for a range of medical expense plans. Total public funding of medical expenses in FY2000, including funding provided separately by local government, was estimated at ¥1,605,100 million, which represents 5.3% of the total national expenditure on medical services⁹.

3. Structure of Medical Insurance Systems in Developing Countries in the Light of Japanese Experience

In this paper, we will consider ways in which Japan's experience in developing its medical insurance system may be useful to developing countries in the process of building their own medical insurance systems. We will begin by examining the defining characteristics of the Japanese medical insurance system. Next, we will contrast these with the needs and circumstances of developing countries today to identify those

⁹ Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku 2003* [Simple Hygiene and Public Health 2003] Nanko Do.

elements that may be applicable.

3-1 Characteristics of the Medical Insurance System in Japan

3-1-1 Universal Health Insurance Coverage

Probably the single most important defining characteristic of the Japan's medical insurance system is its universal nature, providing health insurance coverage to all citizens. This stands in contrast to the United States, for instance, where over 15% of the population is without health coverage due to the prohibitive cost of private health insurance, the primary source of healthcare. Although Japan's medical insurance system was originally modeled on that of Germany, even the German system does not provide universal coverage. Insurance groups in Germany are generally occupation or workplace based, and are funded entirely by insurance premiums with no contribution from public funds. Self-employed persons, the elderly, and workers outside the designated occupational groups, are therefore not automatically covered.

Japan's medical insurance system provides universal coverage through a combination of two distinct elements: workplace-based health insurance associations for employees, and state-run healthcare plans designed for workers in primary industry and their families, since primary industry employed the great majority of the workforce in Japan when the system was first established. In this sense, the Japanese system is now closer to that of the United Kingdom, where medical services are funded by taxes and provided free of charge¹⁰.

3-1-2 Major Role Played by the Government

In Japan, the national government maintains central control over medical funding. For example,

all insurance plans are subject to national compensation and remuneration controls. In this way, the system overall has more of a social welfare (income redistribution) flavor than a social insurance one. In social insurance, the insurer (the body operating the insurance system) is normally (or theoretically) a private sector entity (even though this entity may be subject to various forms of government regulation) and as such is afforded a degree of independence. Typical examples of this approach are the Sickness Funds seen in Germany, which have the authority to determine remuneration for medical services.

Japan has many different insurers, but they are all subject to central government controls in areas such as remuneration, thus ensuring that all citizens have access to the same quality of service at the same price. Furthermore, the government itself also acts as an insurer and operates its own insurance plan. The National Health Insurance System is funded from taxes, with the state maintaining harmony between taxes and insurance. This is a distinctive feature of a healthcare system developed by what was then a developing country¹¹.

3-1-3 Inclusion of those Not Formally Employed

One of the biggest issues for designing healthcare systems in developing countries is how to include those not formally employed, such as workers in agriculture, forestry and fisheries industries, and the self-employed. Michael Jenkins of the International Social Security Association (ISSA) points out that "farm workers and workers in the informal sector (self-employed workers and others who do not belong to formal organizations) have often missed out on the protection afforded by social security guarantees, and this is particularly applicable to developing countries."¹²

When a modern medical insurance system was being developed in Japan in the 1930s and 1940s,

¹⁰ Hiroi, Yoshinori (1999) *Nihon no Shakai Hoshō* [Social Security of Japan], Iwanami Shinsho.

¹¹ *ibid.*

¹² *ibid.*

primary industry accounted for nearly half of all workers, since the country had been slow to embrace industrialization. As the first country in the world to extend medical insurance to the informal sector, Japan was obliged to create its own unique model, parts of which persist symbolically in the National Health Insurance System today. When the National Health Insurance Act was enacted in 1938, municipal authorities and local industry associations (with the status of private organizations) were the basic building blocks of the health insurance system. Shortly after the war, in 1947, the independent local insurers were all brought under the control of the municipalities in order to promote the universality of the system. In 1958, the new National Health Insurance System established the principle of compulsory participation and created a truly universal system. This approach - beginning with small-scale local insurance plans and gradually broadening the reach of the system - has particular relevance for developing countries today.

3-1-4 Extremely High Number of Insurers

Japan has the government-managed health insurance system, individual workplace health insurance associations, and the National Health Insurance System in which municipalities act as insurers. Overall, Japan has many more different insurers than most other countries (see Table 11-3). Medical insurance system in Japan is a unique combination of one very large insurer (the government, which operates the government-managed schemes) and a very large number of small insurers.

3-2 Applicability of Japan's Medical Insurance Systems to Developing Countries

For many developing countries, the primary goal of providing all citizens with proper access to medical services is hampered by a lack of public funding. Although some form of user contribution is

necessary in order to ensure the continuing economic feasibility of the system, the 100% user-pays approach as seen in the United States is certainly not realistic. The mechanisms and processes that were used in Japan - beginning with small-scale public health insurance plans at the local level and subsequently introducing universal coverage under central government control - could provide the solution to funding problems. In this essay, we will consider how the Japanese experience may be applicable to developing countries today.

3-2-1 Preconditions to Make Universal Health Insurance Coverage Succeed

Kobayashi (2000) argues that a combination of favorable factors enabled the successful establishment of universal health insurance coverage in Japan. The first factor was the strong political will to provide universal healthcare. The broad political consensus on the importance of universal healthcare, not just within government but among politicians and the general public, was indispensable to this success. The second factor was the wholesale merger of municipal governments that took place during the Showa Era (1926-1989), which boosted the management and operational capacity of local government.

The third factor was the incremental approach to the introduction of universal health insurance coverage. After the National Health Insurance Act was enacted in 1938, the scope of eligibility was gradually extended over the next 23 years, until the health insurance system took on its current form. This approach was ideally suited to the circumstances of Japan at the time, when the nation lacked medical facilities, expensive medical procedures were rare, and the aging population was not an issue. Expenditure on medical services accounted for only a small proportion of Gross Domestic Product (GDP) (around 3% in the 1960s,

¹³ Nakamura, Yasuhide (2001) "*Hokeniryo Bunya niokeru Tonan Asia Shokoku no Patonashioppu no Kochiku* [Establishment of the Partnership between Southeast Asian Countries in the Field of Public Health and Medical Services]," NIRA E ASIA Research team ed. *Higashi Asia Kairo no Keisei* [The Establishment of the East Asian Corridor] pp. 245-275, Nihon Keizai Hyoron-sha.

compared to 7% in the 1990s)¹³.

The three main prerequisites for the introduction of universal healthcare can therefore be summarized as: strong political will, proper administrative capacity, and an incremental approach. Naturally, the incremental approach to broadening the system will

be governed by financial considerations: in other words, whether the overall rate of economic growth and development is sufficient to generate the taxes and premiums needed to continue extending the reach of the system. Similarly, the design of a health insurance system must take into consideration the

Table 11-3 International Comparison of Medical Insurers

USA	UK	Germany	France	Japan
State (Medicare) + private insurance	State (National Health Service (NHS)) [taxes]	Sickness Funds (approx 900 in eight groups)	Small number of Sickness Funds	approx. 5,300 (state, associations 1,800; national health schemes 3,400)

Social insurance groupings

Source: Based on Hiroi, Yoshinori (1999) p. 54

Box 11-1 A Comparison of the Medical Insurance Systems of the USA, UK and Germany

USA: In contrast to the approach taken by Japan, medical insurance in the United States operates purely according to market principles. Medical insurance is generally provided by private-sector insurance companies, and citizens are required to act as consumers in purchasing their medical insurance products. Larger employers often subsidize the medical insurance costs of their employees, but individual membership in a private medical insurance plan costs hundreds of dollars per month. As a result, some 15% of the population of the United States is without medical insurance. Many insurance companies specify which medical institutions their policy-holders may use, in order to keep costs down. A variety of restrictions also apply: for instance, before a patient can be admitted to a medical institution, the institution must obtain the approval of the patient's insurance provider. Many medical institutions are themselves privately run, with both funding and provision of medical services operated on private-sector principles. The government provides subsidies designed to supplement the free-market healthcare system, including Medicare, which funds the medical expenses of elderly persons (65 and over) and persons with disabilities (of all ages); and Medicaid, which covers low-income earners, persons with disabilities, and certain categories of children and pregnant women.

UK: The United Kingdom has opted for the welfare state model exemplified by the expression "from the cradle to the grave." Apart from a small number of private hospitals, the taxpayer-funded National Health Service (NHS) operates virtually all the medical institutions in the United Kingdom, at which all citizens are eligible for free medical services. In direct contrast to the United States, the state is responsible for the funding and provision of medical services. The United Kingdom system also differs from the Japanese system in providing free medical services funded entirely from tax revenue. The use of medical services in the United Kingdom is, however, subject to a range of restrictions. For instance, each citizen is required to register with one General Practitioner (GP) and is not permitted to see other GPs. Patients cannot visit a hospital unless referred by their GP; patients without referrals must pay the full cost of their visits. Recently,

shortages in the number of medical personnel such as doctors and nurses have reached critical levels, with patients often obliged to wait two to three weeks to see their GPs. Hospital treatment can involve a wait of several months. As a result, many people are choosing to take out private health insurance and use private medical institutions. Some public hospitals have even set up “private wings,” where fees are charged in the same way as a private hospital.

Germany: The health system in Japan was originally modeled on the German social insurance system, but has subsequently shifted towards the United Kingdom model of universal healthcare. There are accordingly some similarities between the German and Japanese healthcare systems today, but also some important differences. For instance, the German system is funded primarily by premiums levied by occupation-based insurance associations of insurers and policyholders. As in Japan, Germany has around 900 occupation-based insurance associations called Sickness Funds; however, whereas elderly Japanese are covered by special plans such as health insurance for the elderly and long-term care insurance, in Germany, the occupation-based health insurance systems are extended to elderly persons. Some 90% of hospital beds in Germany are in public medical institutions (including charity hospitals), whereas in Japan, around 80% of beds are in private medical institutions. Self-employed people and high income earners can opt out of health insurance, so the system cannot be considered truly universal. In order to pursue the goal of universal healthcare, Japan was obliged to move away from the original German model and use taxes to make up the funding shortfall from premiums for government-managed health insurance plans and the National Health Insurance System. The Japanese system today is therefore a cross between the universal healthcare approach of the United Kingdom, where medical services are funded entirely by taxpayers, and the social insurance approach of Germany.

International Comparison of Funding and Provision of Medical Services

	Japan	USA	UK	Germany
Provision	Private	Private	Public	Public
	About 20%	About 25%	Virtually 100%	About 90%
Funding	Public	Private	Public	Public
	Premiums + tax revenues	—	Tax revenues	Premiums

Note: The percentage figure in the Provision row represents the relative proportion of public (and/or national) hospital beds. In Germany, this includes hospitals run by non-profit institutions such as religious organizations and foundations.

Source: Based on Hiroi , Yoshinori (1999) Nihon no Shakai Hoshō [Social Security of Japan], Iwanami Shinsho

capacity of individual citizens to pay insurance premiums and co-payments.

3-2-2 Scale at Introduction, and Phased Expansion of a Medical Insurance System Suited to the Stage of Economic Development

Earlier in this Chapter, in “1. History of the medical insurance system” we identified the four

main phases in the history of the medical insurance system in Japan. Here, in order to analyze the relevance of the Japanese experience to developing countries, we will examine each phase in the context of the economic circumstances of the time, and consider how economic factors influence the scale and timing of the introduction of a medical insurance system.

Table 11-4 Economic Stages and Medical Insurance Stages in Japan

Stage of economic development	Phase of medical insurance system	Main forms of health insurance available	Scope/eligibility	Corresponding developing countries/regions
Early industrialization phase	Birth of medical insurance (1900~1944)	Local mutual benefit associations	Local residents (voluntary basis)	Senegal, Burkina Faso
		Enterprise-based mutual aid associations	Employees of state-run corporations and major private enterprises	
Beginnings of economic growth	From postwar recovery to genuine universal coverage (1945~1961)	Enterprise-based mutual aid associations	Employees of major enterprises	Kenya, Indonesia, the Philippines
		Government-managed health insurance schemes	Employees of small to medium enterprises	
		National Health Insurance System	Residents of designated municipalities, members of local industry unions	
		All three exist independently		
Rapid economic growth	Institutional reform period (1962~1981)	Enterprise-based mutual aid associations Government-managed health insurance schemes National Health Insurance System	All citizens	Thailand, the Philippines
		Centralized state control of all three		
Maturity	Adapting to the aging of society (1982~present)	All the above + Elderly Health System	All citizens	South Korea, Taiwan

Source: Compiled by the authors

Table 11-4 summarizes the four phases of the medical insurance system with reference to economic circumstances. In the early industrialization phase, modern industry had started to appear but full-scale industrialization was yet to begin. This period corresponds to the birth of medical insurance, provided only by local mutual-aid associations and employee health insurance plans operated by state-run enterprises and major private corporations. The next phase, the beginnings of economic growth, refers to the period from post-war recovery through to the start of economic growth. This phase saw medical insurance extended to include the informal sector (farm workers and the self-employed) throughout the country, a process that was to continue through to the development of a truly universal system extending coverage to all citizens (hence it is called “From post-war recovery to universal coverage” in Table 11-4). In the subsequent period of advanced economic growth, the system was gradually refined and modified to improve the equality of the universal coverage that had been established. This phase is accordingly known

as the institutional reform period. In the maturity period, as socio-economic development reached maturity, the population began to age, and stable economic growth was replaced with an economic downturn. The medical insurance system was required to adapt to these changes, particularly the acceleration of the aging process.

Let us now consider how the experiences of Japan can be applied in the context of the economic development of developing countries today.

(1) Early Industrialization

In the early industrialization phase, the majority of workers belong to the informal sector, typically agriculture and cottage industries. Health insurance is available only to a small proportion of the population, usually government workers and employees of large private corporations. This phase would correspond to many low-income countries. Unlike the Japanese experience, however, in nearly all developing countries today, foreign insurance companies are already providing health insurance services to the wealthy.

For countries at this stage of economic development, as was the case for Japan, the first step is to create a sound insurance system for government workers and employees of major corporations. The next step is then to set up local insurance schemes tailored to the needs and capacity of each region.

(2) Beginnings of Economic Growth

Countries in which the majority of the population is employed in the informal sector and where economic growth has started to take off can benefit from the Japanese model. Kenya, for instance, is working on the development of a universal health insurance system to promote economic growth and security. Kenya currently has a national hospital insurance fund managed by a government corporation, but it is designed only for the formally employed, and is subject to minimum income stipulations. As a result, coverage is extended to less than 10% of the population at present. The new administration, which came to power in December 2002, set up a task force to prepare for the launch of a National Social Health Insurance system for the entire population in July 2004. This development corresponds closely to Japan in the 1940s, when preparations were underway for the introduction of universal health insurance.

Hiroi (1999) observes that the National Health Insurance System, the mainstay of the Japanese model, has significant implications for many developing countries today in their attempts to extend health insurance coverage to workers from the informal sector (i.e. those not formally employed). Hiroi points out that the Japanese system was set up at a time when primary industry still accounted for a significant proportion of the working population (45% in FY1961), and initially served as a form of localized "farming insurance," with village-based cooperatives as the basic administrative units. In this sense, the Japanese system provides a useful model for developing countries and regions at a similar stage of development.

Many countries at this stage, however, do not yet have the administrative capacity to implement such a system. Development of administrative skills is thus a major issue. The national hospital insurance fund in Kenya, for instance, is hampered by problems of embezzlement and corruption by officials, which must be addressed through capacity building in government. Efforts to stamp out corruption should be incorporated into the process of constructing a carefully designed health insurance system.

(3) Advanced Economic Growth

Japan's experiences after the achievement of universal health insurance coverage are of relevance to developing countries which are currently enjoying rapid economic growth, and have constructed a universal health insurance system that still requires further refinement in certain respects, such as the scope of service provision.

Thailand, for instance, having been impressed with the success of the complex medical insurance system in Japan, requested technical assistance with personnel training in operational and administrative processing. Japan has been providing assistance in this area since 2003. According to Inoue (2003), the Philippines has been developing a universal health insurance system through a combination of three programs designed to cover regular employees, self-employed workers, and the poor. The system still requires further expansion, since it only covers some 70% of the population at present. This is where Japanese initiatives in refining and expanding its universal health insurance system after its initial introduction could prove most relevant.

(4) Maturity

Initial signs of aging of the population can be discerned among the newly industrialized countries, signifying that medical expenses will inevitably start to increase at some point in the future. In Japan, where the National Health

Box 11-2 The Medical Insurance System in South Korea

The medical insurance system in South Korea was modeled on the Japanese system. Launched in 1977, it originally applied only to companies with 500 or more workers, but was subsequently expanded to include civil servants, public and private school teaching staff, and companies with less than 500 workers. By 1989, coverage had been extended to all employees, employers and self-employed persons in urban areas. The success of the system can be attributed to a combination of strong economic growth of up to 12% per year, and strong leadership from the military government, as well as an increasing level of demand for greater equality from the general public.

Like Japan, South Korea already had many insurance associations (417 in 1989), which were steadily absorbed into the National Health Insurance Corporation established under the 1997 National Medical Insurance Law.

All South Korean residents are covered under the National Health Insurance System, including foreign nationals (upon application). The system is funded by insurance premiums (payable by insured persons), employer contributions, and government subsidies. Benefits are paid to insured persons and their dependent family members for a range of services including prevention and treatment of illness and injury, childbirth, health promotion activities, and rehabilitation programs. In 2001, premiums accounted for approximately 75% of total funding, with government subsidies making up the remaining 25%. Some benefits are paid directly, for instance for medical services, hospitalization and pharmaceuticals, while others are in the form of cash payments, for instance childbirth and funeral expenses. Co-payment rates are 40% for hospitalization, 61% for outpatient visits, and 30% for pharmaceuticals, all of which are significantly higher than in Japan. Every medical service and procedure has a fixed cost, which is the same nationwide.

Health insurance has exhibited explosive growth in South Korea, and medical expenses have increased at a similar pace. There is a growing disparity between city and country with respect to the utilization of the healthcare system. The provision of medical insurance is currently being reviewed in light of the funding crisis in National Health Insurance associations and the high user contribution rates.

Source: Based on Kim (2003)

Insurance System is administered at the local level and has always been designed to accommodate older persons after retirement, the aging of the population has boosted the proportion of elderly persons in the system, and is slowly transforming it into a health insurance plan for the elderly. As social and individual attitudes change, an increasing number of people in Japan are refusing to pay their National Health Insurance premiums. The government has yet to produce a coherent strategy to address these changes. While Japan is unable to provide any useful insights in this area to developing countries that are likewise grappling

with the challenge of an aging population, the Japanese experience does demonstrate the importance of developing and refining the system based on long-term population forecasts.

Although Japan's medical insurance system is relevant to developing countries in many ways, as noted by Hiroi, it nevertheless represents only one of many possible approaches. It is important for developing countries to examine the many different health systems around the world, in addition to the Japanese system, and to consider the strengths and weakness of each system in the context of their own level of economic development

and other extenuating local conditions and circumstances. While the Japanese system serves as a useful model for reference, it might also be prudent to consider the health systems in South Korea and Taiwan, where the user contribution is higher than in Japan and where the range of illnesses and injuries is more restricted, or in Singapore, where the concept of family dependents

has been jettisoned in favor of an enforced insurance savings system predicated on individual contributions (see Boxes 11-2 and 11-3).

Finally, it should be noted that economic conditions and globalization in developing countries today are considerably more complicated than those of post-war Japan, due to factors such as globalization and the level of

Box 11-3 The Medical Insurance System in Singapore

The health system in Singapore is not based on the welfare state model prevalent in much of Europe. Payments of medical expenses and nursing care in old age are considered to be an issue for individuals and families, not the state. The health system is a combination of enforced savings for health expenses and optional health insurance, with no notion of mutual aid.

The medical insurance system in Singapore is known as the 3M system: Medisave, Medishield and Medifund, together with the new long-term nursing care insurance component, ElderShield, which was launched in June 2002. These plans all operate under the basic principle of premiums levied on individuals and families, with the government providing benefits only for persons in poverty, and others requiring specific forms of assistance.

Employers and workers are required to pay a fixed monthly installment for every worker into the Central Provident Funds (CPF), into an account held in the worker's name. The CPF installment rates are normally 20% of the worker's salary plus another 20% paid by the employer, although these can vary depending on the worker's age (the rate declines with age) and general economic circumstances.

Installments paid into the CPF account are then apportioned among three accounts: a Medisave account, a normal savings account, and a special account. The Medisave account receives 6% - 8.5% of the installment, which is kept aside to pay for medical insurance in old age. As a rule, savings in the Medisave account cannot be accessed before the age of 55. However, due to the large number of elderly people who missed out on the Medisave system or have insufficient funds in their accounts, direct family members (siblings or children) are currently permitted to withdraw from their own accounts in order to pay for medical expenses of their elderly relatives. The Medisave account cannot cover all medical expenses for individuals and their families, which is why the Medishield plan was introduced in 1990. Although Medishield is technically optional, around 90% of CPF members have joined Medishield. Premiums are low, but the scope of benefits is limited: pre-existing conditions and mental illnesses are not covered, nor is medical treatment required as a result of civil disturbance or rioting. To this end, Medishield Plus was introduced in 1994 to provide additional coverage.

In 1993, the government launched the S\$2 billion Medifund, which pays medical expenses of those people unable to cover the costs themselves.

In response to concerns about the capacity of the 3M system to fund medical expenses for the elderly, the ElderShield plan was launched in June 2002. Operated by the private sector, ElderShield is an optional insurance package like Medishield, and is available only to persons between 40 and 69 years of age. Benefits are paid from 65 years of age, in the form of cash

payments of S\$300 per month payable for up to five years to persons recognized as requiring nursing care. By September 2002, 67% of the population in the 40-69 age bracket had joined the ElderShield insurance system.

The CPF system was launched in 1955 as a form of economic security to replace the retirement pension, but the objectives of the fund have been steadily broadened to the point where it can be used for housing loan repayments and educational expenses. Indeed, the CPF today is more like a lifelong social security savings plan.

It is often said that Japan should consider implementing aspects of the Singaporean healthcare system. It should be remembered, however, that Singapore is a smaller country than Japan, with a population of just 4.1 million people (this figure includes foreign nationals resident in Singapore for at least one year). The average age of the population is just 34.0 years, average life expectancies are 75.6 years for men and 79.6 years for women, and the proportion of elderly of the overall population reached 7% only relatively recently, in 1998. Finally, Singapore ranks sixth in the 2000 WHO Health Ranking, compared to Japan in tenth place.

(1S\$ = ¥65 approx as of January 2003)

Source: Based on Yu, Reirei (2003) "*Shingaporu no Koreisha Taisaku to Iryohoken Seido* [Measures for the Aging Society and Medical Insurance System in Singapore]," *Aging*, Spring, 2003, Japan Aging Research Center

Supplementary Chapter Environmental Sanitation

Focus: Water Supply and Waste Disposal, and Sewage Treatment

Even today in the twenty-first century, some eighty countries around the world do not have adequate water supplies. Of the world's 6 billion people, one billion do not have ready access to safe potable water, and at least one million children die each year from sicknesses caused from drinking contaminated water. While these figures basically highlight the North-South gap in how people's basic water and sanitation needs are being met, in recent years even in developing countries that gap has been widening between more affluent classes and lower-income classes¹. International concern is growing about this water problem in developing countries, and at the 3rd World Water Forum held in Japan in March 2003, criticism was voiced at the tardiness in securing safe and sanitary potable water supplies in developing countries. The Forum confirmed the need for countries around the world to assist with this issue.

Until the end of the post-war period, Japan too faced the same sort of problems as developing countries today. However as its economic strength increased, the nation slowly worked towards improving its sanitation, with the aim of supporting the health of the populace.

In this Chapter, we will examine how environmental sanitation was improved in Japan, tracing the improvement process by focusing in particular on the provision of water supply and waste disposal services, and sewage treatment infrastructure. We will then discuss the possibilities that Japan's experience can be utilized as a

reference to improve environmental sanitation in today's developing countries.

1. Trends in Environmental Sanitation

1-1 Pre-war Environmental Sanitation Projects (1868~1945)

Around the start of the Meiji Era in the early 1870s, some early interest was shown in environmental sanitation measures such as potable water distribution systems, waste disposal programs, sewage systems and improving the standard of residential designs, as measures to eliminate sources of infectious diseases, and cholera in particular. Occupied with the immediate response to whichever infectious disease was sweeping the country at any particular moment, the Japanese Government had few resources to spare for sanitation measures².

In the late 1880s, when measures to combat cholera had finally achieved some results, the government began work on plans to improve the nation's water supply and sewage systems. Due to financial considerations, the decision was taken at that time to give priority to providing water supply services, for which the need across the country was deemed to be greater. Construction of sewage systems, although an essential weapon in the battle against infectious diseases, was put on hold until the country's economic resources permitted. Accordingly the first modern water supply facility built in Japan

¹ Institute for International Cooperation, Japan International Cooperation Agency (2002) *Tojokoku no Sosharu Sefuti Netto no Kakuritsu nimukete* [Toward Development of Japan's Social Security System in Developing Countries] Japan International Cooperation Agency.

² The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Year's History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai.

was the Yokohama Water Supply in 1887. After their creation in 1889, local governments across Japan drew up plans for their own water supply systems. The Waterworks Law (obsolete law) was promulgated and enacted in 1890, leading to efforts to set up water supply infrastructure in regions throughout Japan. This Ordinance provided the regulatory framework for water supply in Japan until the implementation of the Waterworks Law in 1957.

In the meantime, owing to the above-mentioned financial considerations, the sewerage infrastructure made little progress. It was not until the latter part of the Meiji Era, from 1890 onwards, after the nation's water supply projects had by and large been completed and society's attention had turned to sanitation issues, that progress began to be made in constructing sewerage systems. The chief purpose of the nation's drains at that time was to remove rainwater and liquid waste - night soil on the other hand was physically collected and returned to agricultural areas, for use as fertilizer. This separation of the two types of waste commenced when each came under the operation of their own law, namely the Sewerage Law and the Waste Management Law (obsolete law), both enacted in 1900.

During the Taisho Era (1912~1926), a sewage water treatment plant using a percolating filter method was constructed in Tokyo, and it began treating mainly liquid waste from March 1922. Around this time chemical fertilizers came onto the market as a substitute for night soil in Japan, and at the same time the country experienced a period of accelerated urbanization. This caused the existing balance to break down

between the supply and demand for night soil between cities and the surrounding countryside, and in Tokyo and other large cities the disposal of night soil became a problem. The Tokyo city government began to treat night soil by sending to its sewage water treatment plant some of the night soil that accumulated in the main drains in the areas served by the plant.³ Prior to 1945 however, the construction of sewage facilities did not make much progress, with just twelve plants at the end of the Meiji Era, thirty by the end of the Taisho Era, and fifty in 1940⁴.

1-2 Post-war Provision of Water and Sewage Systems (1946~1979)

Even in cities where progress had been made in constructing water supply facilities, due to war damage and inadequate management systems in the immediate post-war period, Japan's water supply capacity fell to an extremely low point. Subsequently in the 1950s, water supply projects were pursued with some vigor, with the active expansion and improvement of the country's existing water distribution facilities.

Although accurate records are lacking, in the chaotic conditions immediately following the war around 25% of the population was thought to be connected to water supply services. This period nevertheless provided abundant opportunities for urban revitalization of a high standard, and many plans were produced for new water distribution projects⁵. The event that served as the direct turning point for promoting water supply projects was the Nankai Earthquake of 1946. Small-scale water supply projects introduced into rural and mountain villages affected by the earthquake met

³ Institute for International Cooperation, Japan International Cooperation Agency (1995) *Kaihatsu Tojokoku no Toshinikeru Shinyo, Zatsuhaisui Shori no Dankaiteki Kaizenkeikaku Shuho no Kaihatu ni kansuru Kenkyu* [Research on Development of Improvement Planning Technique for Night Soil and Drainage Treatment in Developing Countries] Japan International Cooperation Agency.

⁴ Health and Welfare Statistics Association (2003) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2003 Vol. 50 No. 9. No. 784. Health and Welfare Statistics Association.

⁵ Ishibashi, Tabun (1975) "Kani Suido ha 'Kokuminkaisuido' no Ninaite, [Private Water-supply System is Bearer of 'Universal Water-system Coverage'],'" *Kani Suido no 20-nen* [Private Water-supply System in 20 Years] Zenkoku Kani Suido Kyokai.

with great public approval. The popularity of the scheme led to small-scale water supply assistance projects around the country. This in turn encouraged water supply projects in urban areas, and to replace the 1890 Waterworks Law (obsolete law) the Waterworks Law was enacted in 1957, providing serious incentives for the construction of water supply projects⁶. At the same time, government financial assistance was discontinued for projects other than small-scale water supply projects, and responsibility for water supply projects was subsequently entrusted to local governments. As a result of these policies, the national water supply penetration rate, which had been 32.4% in 1955, rose to 53.4% in 1960, and 80.8% in 1970.

In the 1960s, the main issue facing the nation was the need to put more resources into the nation's living conditions, meaning more and better roads, public transport, housing, and environmental sanitation. While the 1957 Waterworks Law provided a favorable basis for the construction, management and operation of water supply services, throughout Japan water distribution capacity was unable to keep pace with the growth in demand for mains water resulting from the country's strong economic growth. In particular in metropolises such as Tokyo and Osaka, inadequate water pressure and poor water supplies were a regular occurrence. The Ministry of Health and Welfare drew up a Water Supply Infrastructure Ten-year Plan, covering the period from 1961 to 1970, setting non-binding targets for the construction of water supply infrastructure. The basic strategies adopted to overcome water shortages were firstly to secure funding for local governments (who were responsible for building water supply projects), and secondly to secure reservoirs and other water sources for the supply

network. At first almost all funding for water infrastructure projects was met by bonds issued by municipal governments. As the assets underlying the nation's pension reserves grew, however, it was made easier for councils to raise the necessary capital when the ceiling was raised for Japan's Fiscal Investment and Loan Program (FILP: under this program, a certain percentage of the reserves for welfare pensions and national pensions deposited with the Ministry of Finance can be used to fund projects that improve the overall welfare of Japanese society). Progress was made in securing water sources in 1961, when the Water Resources Development Promotion Law and the Water Resources Development Corporation Law were enacted, whose aims were the comprehensive development of water resources and their utilization over broad areas of the country⁷. As a result of all these policies, the water supply penetration rate rose steadily, reaching 87% in 1975.

Comparing the trend in this rate against the prevalence of water-borne infectious diseases, a clear correlation can be seen from around 1960, when the water supply penetration rate passed 50%. We can also see that water-borne infectious diseases completely disappeared when the water supply penetration rate exceeded 80% (see Figure S-1)⁸.

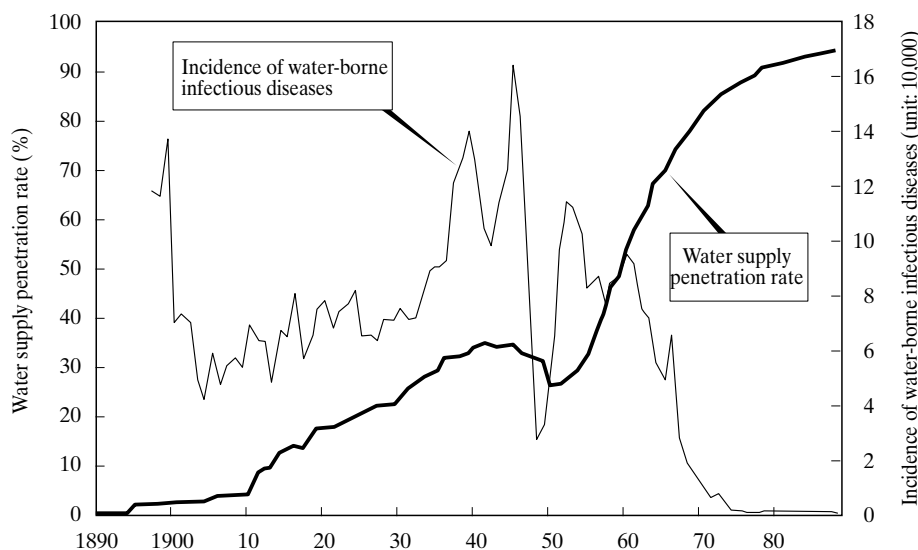
National government subsidization of sewage projects began in 1957. Plans for comprehensive improvements to social infrastructure, including living environment infrastructure such as sewage systems and sewage treatment plants, were first taken up in the National Income Doubling Program of 1960 (covering the period 1960 ~ 1970). Based on this in 1963, the Law for Promotion of Construction of Sewerage and Waste Management Facilities was enacted,

⁶ The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu-hen)* [Fifty Year's History, Ministry of Health and Welfare (descriptive version)] Kosei Mondai Kenkyukai.

⁷ *ibid.*

⁸ See Health and Welfare Statistics Association (2003) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2003 Vol. 50 No. 9. No. 784. Health and Welfare Statistics Association. p. 268.

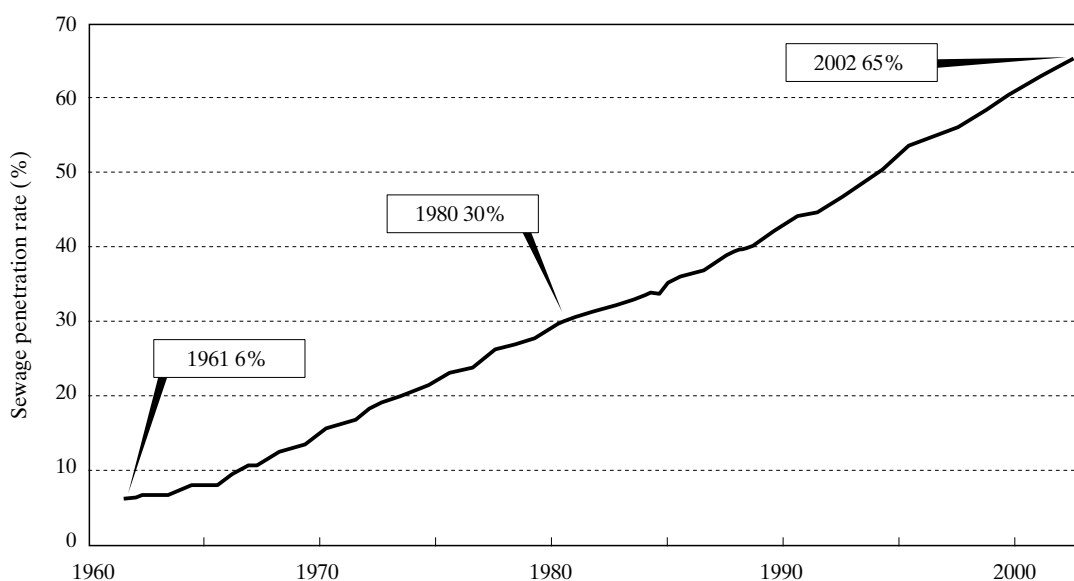
Figure S-1 Water Supply Penetration Rate and Prevalence of Water-borne Infectious Disease



Note: Water supply penetration rates were calculated based on the figures for planned water supplied populations in the History of Japan's Water Supplies (for the period 1890~1949); the water supplied population from water supply statistics (1950~1955); and the water supplied population from water supply statistics (1956~1988). The incidence of water-borne infectious diseases is the total number of cases of cholera, dysentery, typhoid, and paratyphoid. The data for all diseases dates from 1897, excepting paratyphoid which dates from 1911, as there are no clear figures for that disease prior to that year.

Source: Water supply penetration rates were prepared based on "A Century of Modern Water Supplies" (1987; ed. Editorial Committee). The figures for water-borne infections were prepared based on data compiled by the Ministerial Secretariat Statistics and Information Department of the Ministry of Health and Welfare (2000).

Figure S-2 Trends in Sewage Penetration Rate



Source: Prepared based on Japan Sewage Services Association's homepage (http://www.alpha-web.ne.jp/jswa/05_arekore/01_his/index.html)

commencing budgeting by the government for subsidies for waste water systems and sewage treatment projects. Now that funding had been secured, and priority given for the construction of living environment infrastructure, sewage systems along with sewage and gray water treatment plants were established around the country at a steady pace (see Figure S-1)⁹.

Along with improvements in peoples' standard of living, the total volume of waste increased and the waste was diversified such as oversize garbage, plastics of various types, and packaging. Further, the treatment of industrial waste, being generated in huge quantities in the course of the nation's industrial activities, constituted another serious social problem. At that point the government decided to make businesses liable and responsible for treating industrial waste, just as it had with industrial pollution. So in 1970 it introduced legislation for a system for the disposal of waste products, using the Waste Management and Public Cleansing Law to regulate general waste products that came within the jurisdiction of local municipal governments. Making it the express responsibility of the nation's businesses to treat waste products and clearly defining disposal standards represented an epochal shift in particular, and also constituted a major step forward in the subsequent regulation of waste disposal¹⁰.

1-3 Water Quality Preservation and Sewage Treatment (1980~present)

In 1980 the water supply penetration rate exceeded 90%, representing a significant achievement in the spread of water supply services¹¹. However, a number of problems arose

concerning water quality and the sources of water supplies, and the natural and socio-economic environment affecting water supply became increasingly severe, with growing obsolescence in the nation's water supply facilities and deterioration in the financial resources of both national and local governments. In these conditions, in order to have stable supplies of water and to ensure water safety, and to strengthen measures for preserving the quality of the nation's water sources, it became important to strengthen water quality management systems by adopting comprehensive water quality standards¹².

Compared to the water supply penetration rate, the sewage penetration rate lagged conspicuously, only reaching 30% by 1980. By this time, non-sewage household waste water had started to generate concern as an environmental problem, so as a method that was cheaper than expanding mains sewage services, small-scale individual household combined wastewater treatment tanks were developed, that treated household gray water together with night soil. Boosted by subsidies from the government, these were taken up by homes throughout the country. At the same time, technological advances were also made in drain water treatment plants and sewage treatment plants, thereby ameliorating sanitation problems. The spread was also subsequently encouraged of flush toilets and mains sewage services, from the perspective of a better global environment and the amenity of individual citizens. As of 2002, the sewage penetration rate for the entire country was still just 65.2% (see Figure S-2). In addition, looking at regional differences, there is a huge disparity between Tokyo, with the highest penetration rate at 97.6%, and Wakayama, the prefecture with the

⁹ Kitawaki, Hidetoshi (1999) "*Mizu to Eisei Shisetsu* [Water and Sanitation Facilities]," Japan International Cooperation Agency, *Primary Health Care wo Yoku Shiru tameni- Nihon no Keiken wo Fumaete-* [To Understand Primary Health Care - Based on Japan's Experience].

¹⁰ The Ministry of Health and Welfare (1988) *Kosei Sho Goju-nen Shi (Kijutsu hen)* [Fifty Year's History, Ministry of Health and Welfare (Descriptive Version)] Kosei Mondai Kenkyukai.

¹¹ Notwithstanding the country's high water supply penetration rate (96.6% as of 2000), there still remain some regions that lack the benefits of a water supply service. This is an issue that should be addressed as soon as possible.

¹² Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku* 2003 [Simple Hygiene and Public Health 2003] Nanko Do.

lowest rate at just 11.8%, indicating that in general a large gap in the penetration rate has arisen between urban and rural areas. The government for its part is trying to pursue strategies for household waste water that match Japan's particular circumstances, for example by promoting infrastructure that works in partnership with individual household combined wastewater treatment tanks, as in mountainous regions that do not lend themselves easily to coverage by mains sewage systems.

2. Japan's Main Initiatives

2-1 Roles of Local and National Government in Water Supply and Sewage Infrastructure

Water supply and sewage infrastructure in Japan has essentially been the responsibility of local government. The national government first issued ordinances, and then in the post-war period passed legislation, in order to facilitate local governments in their task. For social capital infrastructure, however, such as sewage systems that have high community value yet require enormous expense, financial assistance from the national government is essential. In Japan too the national government provided support in the form of state subsidies, whereby construction funds were raised in part from the national budget.

For local governments, who were charged with building water supply infrastructure, the problem of securing sources of revenue was a serious one. In Japan's case, these funds were raised by using the nation's pension reserves under its Fiscal Investment and Loan Program (FILP). Under this

program, a certain percentage of the reserves for welfare pensions and national pensions managed by the Ministry of Finance could be used to fund projects that improve the overall welfare of Japanese society. This device of using pension reserves as a stable source of finance is something Japan is good at, and it is a scheme with very few counterparts around the world.

2-2 Night Soil Treatment Works Outside the Sewage System

Several factors have been put forward as possible causes for the slow rate of sewage penetration in Japan.¹³ Firstly, traditionally night soil was used in agriculture as fertilizer¹⁴. Secondly, the concentration of population in the country's cities was at first not so rapid. Thirdly, Japan's mountainous terrain does not easily lend itself to mains sewage services.

With the recovery in Japan's economy since 1945, however, and the consequent increased use by its farmers of chemical fertilizers (which also occurred because infestation by roundworm and other parasites in night soil constituted a clear health problem), the agricultural use of night soil gradually declined. On the other hand, the population began to grow in Japan's larger cities, the balance between supply and demand for night soil began to break down considerably, and the disposition of increasing volumes of night soil became a significant problem. In order to deal within this situation, in 1953 Japanese Government began providing government subsidies to promote the construction of sewage treatment plants using anaerobic fermentation treatment methods. In this way by around the 1970s, Japan had overcome its problems with treating sewage, by collecting it from around the

¹³ Institute for International Cooperation, Japan International Cooperation Agency (1995) *Kaihatsu Tojokoku no Toshiniokeru Shinyo, Zatsuhaisui Shori no Dankaiteki Kaizenkeikaku Shuho no Kaihatu ni kansuru Kenkyu* [Research on Development of Improvement Planning Technique for Night Soil and Drainage Treatment in Developing Countries] Japan International Cooperation Agency.

¹⁴ Health and Welfare Statistics Association (2003) *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2003 Vol. 50 No. 9. No. 784. Health and Welfare Statistics Association. p. 271.

country and transporting it to sewage plants for treatment.

In the 1980s, as Japanese people became more affluent they consumed more water, and gray water produced as a result of household activities caused environmental problems such as degradation of the nation's rivers and waterways. In order to deal with the gray water produced by households outside the areas served by mains sewage services, small-scale combined wastewater treatment tanks were developed for private households, the most common tank being for households with no more than ten people. These tanks treated gray water and night soil together, but because they were expensive compared to separate treatment tanks, they were not so popular initially. As the problem of household gray water grew more serious, in 1987 the Ministry of Health and Welfare established a system of government subsidies for the installation of combined wastewater treatment tanks, in an effort to encourage their use around the country. Under this scheme, the subsidy was not paid to the individuals who installed the tanks, instead it was paid to the local municipal government. This led to a rapid increase in the volumes of household gray water treated¹⁵.

Today the percentage of Japan's population with access to some form of sewage disposal services has reached 98.4%, involving a combination of methods such as mains sewage, treatment tanks, and/or physical collection services. The slow spread of mains sewage services has been overcome, and environmental sanitation problems have receded considerably.

2-3 Spread of Small-scale Water Supply System

Japan's water supply penetration rate, which

stood only just above 20% in 1945, exceeded 80% a mere 30 years later. This achievement is so renowned that people in developing countries are keen to learn the secret of Japan's success. Small-scale water supply systems are said to have been part of the driving force behind the astonishing progress in the expansion of Japan's water supply network¹⁶. A small-scale water supply service means a project with a planned water supply population not exceeding 5,000 people, whose sources of water are good quality groundwater or spring water. At the outset, almost none of the target communities had water purification facilities, but they did conduct water quality control.

Small-scale water supply construction projects originated when local residents, who were no longer able to use well water following the Nankai Earthquake of 1946, appealed to the Japanese parliament and government for water services to be constructed for their communities, and in 1950 a financial subsidy system was set up on an experimental basis (the subsidy covered half the cost of a construction project). Following this trial, within just two to three years small-scale water supply systems sprang up in hundreds of communities, and these services produced two major outcomes for farming, mountain villages and fishing communities in the form of infectious disease control (see Box S-1) and improved standards of living, attracting attention from around the country. Another major benefit of these services was that they revolutionized the lives of local women, who previously had spent many hours drawing water from wells (see Box S-2). This success inspired members of Japan's parliament, who believed that "politics is directly linked to the kitchen." When the Ministry of Health and Welfare at last recognized the need for these systems from

¹⁵ Institute for International Cooperation, Japan International Cooperation Agency (1995) *Kaihatsu Tojokoku no Toshiniokeru Shinyo, Zatsuhaisui Shori no Dankaiteki Kaizenkeikaku Shuho no Kaihatu ni kansuru Kenkyu* [Research on Development of Improvement Planning Technique for Night Soil and Drainage Treatment in Developing Countries] Japan International Cooperation Agency.

¹⁶ Ohashi, Fumio (1975) "Shogaikoku ga Odoroku Suido Fukyu Tempo [The Prevalence Speed of Water-supply that Makes Other Countries Surprised]," *Kani Suido no 20-nen* [Private Water-supply System in 20 Years] Zenkoku Kani Suido Kyokai.

Box S-1 Improvements in Public Health from Small-scale Water Supply System

According to Sugito (1955), although there are no clear statistics on the effects that the arrival of small-scale water supply system had on public sanitation, according to a survey of around 300 towns and villages which built these services, on the whole the following effects were said to be observed:

- The incidence of gastrointestinal infectious diseases fell by 88%.
- The incidence of trachoma fell by 49%.
- Infant mortality fell by 26%.
- The incidence of endemic diseases fell by 20%.
- The cost of public health and infectious disease control measures fell by 32%.
- Medical treatment costs fell by 43%.
- The cost of fire damage fell by 80%.

Source: Sugito, Kiyoshi (1955) *Kanisuido no Tebiki* [Handbook for Small-scale Water Supply System] Nihon Suido Shimbun Kyokai

Box S-2 Drawing Water is Hard Labor

In 1957, as part of an attempt to secure funding for a program to subsidize small-scale water supply projects, the Ministry of Health and Welfare prepared the following sample calculations of the time involved in using wells as sources of water supply. What is noteworthy about this information is that the hardships of the sort that many women in developing countries face today from using wells as a water supply were also seen in Japan at that time, and that scientific evidence was used to shape government policies.

(The following is an extract)

Drawing water from wells in farming, mountain villages and fishing communities is principally the responsibility of women and children. The physical and mental hardship of carrying heavy loads of water on wet days or windy days, even on days when it is snowing, can never be truly measured.

One person uses on average 60 liters of water a day, so if there are five people in a family, 300 liters would be needed for that household every day. If a bucket contains 15 liters, that amounts to twenty trips to the well.

Now, if that distance one way is 50 meters, (omitted) if a fifty-year old housewife who married at the age of twenty were to use the well on average 300 days every year for thirty years until the time her son marries, (omitted) she would have walked 18,000km - in other words, from Tokyo to Kagoshima and back 6.5 times, and moreover, carrying a load of 15kg for half that distance.

(omitted)

If we assume that the time taken to collect water is five minutes each time, on average one hour and forty minutes would be wasted each day. (omitted) Accordingly, in the thirty years between the ages of 20 and 50, this housewife would have spent around three years and seven months collecting water.

Source: National Small-Scale Water Supply Association (1975) *Kani Suido no 20-nen* [Small-scale Water Supply for 20 Years] pp. 289-290

Table S-1 Population with Water Supply Systems and Water Supply Penetration Rate in Japanese Cities, Towns and Villages (2001)

(Unit: 10,000 people)

		Cities	Towns	Villages	Total
Total population		10,036	2,439	243	12,718
Current water supplied population	Mains water service	9,690	1,809	108	11,607
	Small-scale water supply service	9,690	1,809	108	11,607
	(Public utility)	(89)	(40)	(105)	(599)
	(Other)	(22)	(11)	(2)	(35)
	Multi-occupant residential water supply service	42	14	1	57
	Total	9,843	2,239	216	12,298
Penetration rate (%)		98.1	91.8	88.9	96.7

Source: National Small-Scale Water Supply Association website (http://www.kansuikyo.com/f_toukei_13.html)

the perspective of controlling infectious diseases, in 1952 a government subsidy program was launched for small-scale water supply system to be constructed throughout the country. (The subsidy under this program covered one-quarter of the cost of each project.) There was even a dramatic surge of interest among residents of those farming, mountain villages and fishing communities, who had been resigned to never getting a water service. Local groups sprang up around the country, collecting money through “egg money,” “water supply savings,” and “housewives savings,” with the aim of “a simple water supply system for our village as soon as possible.” In this way by around the 1970s, Japan had overcome its problems with treating sewage, by collecting it from around the country and there were also cases of local residents volunteering their labor to build their community’s small-scale water supply service, in order to save on construction costs. The spread of small-scale water supply system among rural communities also led to the promotion and expansion of water supply services in Japan’s urban areas¹⁷.

Through this government subsidy program and the efforts of local residents, by the thirtieth year of the program 13,885 small-scale water supply projects had been completed throughout the country,

providing 8.88 million people, or 8.3% of Japan’s entire population, with access to water supplies. During this period some places also switched from a small-scale water supply service to a town water service, so the total number of people with access to water supplies exceeded 90 million, or 84.1% of the total population. Even today 6.34 million people in Japan get their water through a small-scale water supply service (see Table S-1). The biggest source of that water is surface water, followed by deep wells, and then shallow wells. Disinfection, rapid filtration and slow filtration are some of the methods used to purify those sources of water, as part of scrupulous management of the service’s water quality.

3. Improving Environmental Sanitation in Developing Countries in the Light of Japan’s Experience

When it comes to securing safe water supplies and water resources, in developing countries today population growth and poverty combine to produce severe structural problems. These are only exacerbated by generally low levels of rainfall in arid and semi-arid regions, particularly in Africa, West Asia and Central Asia. In this

¹⁷ Ishibashi, Tabun (1975) “Kani Suido ha ‘Kokuminkaisuido’ no Ninaite, [Private Water-supply System is Bearer of ‘Universal Water-system Coverage’],” Kani Suido no 20-nen [Private Water-supply System in 20 Years] Zenkoku Kani Suido Kyokai.

respect the situation in developing countries differs greatly from that of Japan. For that reason, only some aspects of Japan's experience will be applicable to developing countries. We will now examine some of those areas.

3-1 Striking a Balance between Water Supply and Sewage Infrastructure, and Utilization of Appropriate Technologies

Securing safe water supplies is a major challenge facing developing countries, and in order to protect public health and to prevent diseases that arise in unsanitary environments, it is important to build public sanitation facilities, such as water supply and disposal systems and sewage treatment plants. However, when looking to improve its environmental sanitation infrastructure, a country ought to make its decisions based on an overall assessment of its economic strength along with the other issues that demand its attention. In Japan, action was taken based on a balance between its national resources and other pressing issues that it faced at the time.

In particular, since it costs far more to build sewage infrastructure compared to water distribution infrastructure, if a country does not have much financial leeway it may need to consider making use of other less expensive technologies. Japan was able to overcome the slow progress in its sewage infrastructure by using inexpensive and simple means such as small-scale treatment tanks, septic tanks and other sewage treatment tanks; sewage treatment plants that use anaerobic fermentation treatment methods; and individual household combined wastewater treatment tanks. Such relatively inexpensive technologies may also be of use to developing countries. However, for these technologies to function effectively, it is necessary to keep in mind that maintenance and management systems for operating and managing those facilities are equally important.

3-2 Division of Responsibilities between Central and Local Governments

We have already seen how local governments were primarily responsible for the construction of Japan's water and sewage infrastructure, while the national government assisted their efforts by providing a legislative framework and financial subsidies. This method may well be appropriate for developing countries in that it also sits well with the trend to decentralization of government powers. Many aspects of Japan's experience differ from today's developing countries, however, in terms of the scale of water resources and historical development, so the more specific methodologies used in Japan cannot be applied uniformly to developing countries. For a more detailed examination of the proper role of water management policies in developing countries, see JICA Institute for International Cooperation (2002)¹⁸, pp. 39-79.

3-3 Community Responsibility for Provision of Sanitation Facilities

Both central and local governments in developing countries often suffer from severe financial circumstances and shortages of skilled personnel, with the result that the public sector in these countries is unable to provide adequate services. Accordingly, not much can be expected of government efforts alone to address issues of environmental sanitation infrastructure. In order to improve sanitation in these countries, it will be important to get local residents and communities to take the lead in installing small-scale water supply system, wells, and lavatories.

Japan also experienced many examples of residents taking it on themselves to put in their own small-scale water supply system (see Box S-3). The experience of local residents forming community organizations, sharing their knowledge and using the materials available to

¹⁸ Institute for International Cooperation, Japan International Cooperation Agency (2002) *Mizu Bunya Enjo Kenkyukai Hokokusho* [The Study on Development Assistance in Water Sectors], Japan International Cooperation Agency, pp39-79.

them to install small-scale water supply system could serve as a model for developing countries. Equally applicable should be initiatives such as common saving drives and contributions of labor

by residents, in order to achieve the goal of a small-scale water supply service for their own community.

Box S-3 Self-help and Mutual Aid in the Community

In Japan, in some cases communities built their own small-scale water supply service through the self-help efforts of their residents, before the government installed mains water services or small-scale water supplies. For example, in a particular village in Ehime Prefecture that is surrounded by steep mountains, by the war's end there were no remaining wells that still functioned, and every day the local women went up and down the slopes of the gorges in order to draw water from what wells were available, spending up to 8,000 hours a year in the process. Following a proposal from its young people, this village formed a "cultural promotion association" with the participation of all households, that drew up a comprehensive community plan for the village for the next thirty years. The plan designated securing potable water supplies as the number one priority. Without any external financial assistance and using natural bamboo from the region and their own knowledge and labor, the local residents built a trial small-scale water supply service. When their work was recognized, a small-scale water supply service was subsequently installed with a subsidy from the local town council.

Until the 1960s "water shortages" arose throughout Japan owing to inadequate mains water supply capacity or to drought conditions. The spirit of mutual aid in the community came to the fore at times like these, when houses in the community that had wells would share water with other residents. It is this spirit of self-help and mutual aid among local residents that constitutes the backdrop to Japan's experience before the government built mains water services.

**Part III Towards Application of Japan's Experience
in Public Health and Medical Systems
to Developing Countries**

Chapter 12 Towards Application of Japan's Experience in Public Health and Medical Systems to Developing Countries

The aims of this study are to analyze how Japan improved its standards in public health and medical services, and examine the implications for today's developing countries to improve their own public health and medical systems.

In Part I, we presented examples of the ways that Japan wrought improvements in its public health and medical services after the commencement of the Meiji Era, and also outlined the present system of provision of public health and medical services.

In Part II, we examined the Japanese experience in each of the main areas of public health and medical services. We discussed policy trends and major initiatives in each field, with a view to application in improvements in public health and medical services in developing countries.

In Part III, we will first overview the transition in Japan's public health and medical services, together with the history of the modernization in Japan. In the second part, we will compare Japan's experience with developing countries today, gaining a general grasp of the similarities and differences. With these in mind, we will develop a cross-sectional overview of the areas where caution will be required in applying those aspects of Japanese initiatives and experience that may be of use in improving public health and medical services in developing countries. We will also identify future issues and challenges when Japanese international cooperation will be implemented in this field and Japan's experiences will be applied in developing countries. Finally, we will point out further studies required by this study.

1. Discussion of Transition in Japanese Public Health and Medical Systems

Reviewing the five phases outlined in chapter 1, Part I, we will discuss the political, economical and societal background, considering the main health challenges in each period. We will then summarize the characteristics of Japan's initiatives that should be applicable to developing countries. The overall summary of Japan's experiences can also be seen in Figure 12-1.

1-1 Phase I: Acute Infectious Disease Control (1868~1919)

The start of Phase I (1868~1919) is marked by the establishment of the Meiji Government as the first modern nation in Japan. Japan became a capitalist economy. Basic education was extended to almost the entire population during this period. Living standards improved for the class of city-dwellers who reaped the benefits of economic development. However, the majority of people who lived in rural villages were still pre-modern tenant farmers.

The greatest health problem in this phase was the spread of acute infectious diseases such as cholera, bubonic plague and smallpox, caused by increased movement of people and goods within the country, associated with the opening of the country.

The characteristics of Japanese initiatives in this phase are summarized as follows: 1) establishment of a "social defense system" for the control of acute infectious diseases; 2) establishment of a statistics system; 3) establishment of a system of practicing midwives; 4) principle of local medical practitioners and clinics; 5) principle of patient part-payment for medical services, under the strong-centralized control.

Figure 12-1 Overall Summary of Japan's Experiences in the Health Sector

Time period	Phase I	Phase II	Phase III	Phase IV	Phase V
	Acute infectious diseases control 1868~1919 (Meiji 1~Taisho 8)	Chronic infectious diseases control and formation of maternal and child health services 1920~1945 (Taisho 9~Showa 20)	Restructuring the health administration 1946~1960 (Showa 21~35)	Expanding medical services 1961~1979 (Showa 36~54)	Challenge of an aging society 1980~present (Showa 55~present)
Main challenges for public health and medical services	<ul style="list-style-type: none"> Acute infectious diseases 	<ul style="list-style-type: none"> Tuberculosis control Maternal and child health 	<ul style="list-style-type: none"> Acute infectious diseases Tuberculosis control Maternal and child health 	<ul style="list-style-type: none"> Lifestyle-related diseases Traffic accidents Environmental pollution Drug induced sufferings Occupational health 	<ul style="list-style-type: none"> Low birthrate and aging society Health and welfare services for the elderly High costs of medical treatment
Political, economic and social background	<ul style="list-style-type: none"> Establishment of modern nation Establishment of capitalist economy Spread of basic education Poverty of rural villagers, making up majority of population 	<ul style="list-style-type: none"> Encouragement of new industry Taisho Democracy Wartime footing 	<ul style="list-style-type: none"> Chaos and poverty following defeat in war Loss of social infrastructure Democratization under GHQ guidance 	<ul style="list-style-type: none"> Enjoyment of the fruits of advanced economic growth Changes in industrial structure Urbanization Pervasion of democracy Demand for higher education Awareness of human rights 	<ul style="list-style-type: none"> Prolonged economic downturn Increased decentralization Becoming a mature society
Development of public health and medical system					
Provision of public health and medical services(administration, facilities, personnel, public health information system, pharmaceuticals)	→	→	→	→	→
Maternal and child health	→	→	→	→	→
Family planning	→	→	→	→	→
Infectious disease control measures	→	→	→	→	→
Environmental sanitation (water supplies, etc.)	→	→	→	→	→
Environmental pollution control measures	→	→	→	→	→
Occupational health	→	→	→	→	→
Emergency medical care	→	→	→	→	→
Public medical insurance	→	→	→	→	→
Characteristics of Japanese initiatives	<ul style="list-style-type: none"> Introduction of Western medicine Establishment of a social defense system to control epidemics under central control by the national government Establishment of a system of statistics Health Care Research Committee Adoption of principal of local medical practitioners and clinics Introduction of system of practicing midwives Principle of patient part-payment for medical services 	<ul style="list-style-type: none"> Maternal and child health activities with community participation Pregnant Mother's Handbook system Outreach activities by public health nurses Institute of Public Health established 	<ul style="list-style-type: none"> Establishment of a democratic public health and medical system from the central to the grass roots level Community-based health activities emanating from public health centers Activities of public health nurses and midwives Volunteer activities by community groups, private organizations, and corporations Utilization of school health resources Collaboration between government, academia and community Linkage with rural development 	<ul style="list-style-type: none"> Achievement of universal health insurance coverage Establishment of a system of emergency medical services using fire-fighting organizations Popular movements produce measures to combat pollution and drug induced sufferings Spread of a system of medical service provision not relying on a referral system 	<ul style="list-style-type: none"> Attempts to reconstruct the medical and social security systems to cope with the rapidly declining birthrate and aging society Municipalities become principal public health service providers

N.B. Arrows indicate periods of application or progress. Sun marks indicate particularly important periods of expansion.
Source: Compiled by the authors

1-2 Phase II: Chronic Infectious Disease Control and Formation of Maternal and Child Health Services (1920~1945)

Phase II (1920~1945) saw increased industrialization, encouraged by policies encouraging new industry. Then, ending "Taisho Democracy" movement, Japan assumed a war position. Under military rule, the so-called Kenpei-Kenmin (Healthy Soldier, Healthy People) concept, war-related industries flourished, and the medical and public health administration was strengthened. In particular, control programs for the chronic infectious disease tuberculosis were established, and maternal and child health services were strengthened. The Ministry of Health and Welfare was established in 1938, under-pinning the basic structure of a modern system of public health and medical services.

The two main health issues in this period were tuberculosis which was known as the national scourge at that time, and the infant and maternal mortality rates with seriously high comparing with international standards. The principal achievement of Phase II was the emergence of a community-based approach to control tuberculosis and bring about improvements in maternal and child health. Characteristic of Japanese initiatives during Phase II were: 1) outreach activities by public health nurses; 2) community participation in maternal and child health; and 3) establishment of the Pregnant Mother's Handbook System.

1-3 Phase III: Restructuring the Health Administration (1946~1960)

Japan had been defeated in the Second World War in 1945. Phase III (1946~1960) saw the rebuilding of the entire social system as a democratic nation under the control of the General Headquarters (GHQ) of the Allied Occupation Forces. Public health and medical

services were also reconstructed in line with this social restructuring.

As a result of the post-war chaos, acute infectious diseases had flared up. After bringing these under control, the major public health challenges were combating tuberculosis, lowering the infant and maternal mortality rates, and the popularization of family planning from the viewpoint of maternal and child health. The public health and medical administration was also extensively reformed during this period, under strong GHQ guidance.

During Phase III, the community-based approach emerging in Phase II underwent reconstruction and expansion. Characteristic of Japan's initiatives during this phase were: 1) active involvement of private organizations (community organizations, private groups, companies); 2) collaboration by academic groups (for tuberculosis, family planning, parasitic disease control); and linkages with 3) school health and rural development.

1-4 Phase IV: Expanding Medical Services (1961~1979)

Economic growth accelerated during Phase IV (1961~1979). Per capita national income rose by 4.5 times in real terms over the 18 year period from 1955 to 1973, and the general population enjoyed the benefits of a sustained rise in living standards. The workforce shifted from primary to secondary and tertiary industries, accompanied by a rapid increase in employment opportunities in the cities. This resulted in the urbanization of the Japanese population¹. Due to higher education and the adoption of democratic principles, awareness of human rights increased among the people.

Lifestyle-related diseases replaced infectious diseases as the major health challenge. Three major causes of death in 1960 were cerebrovascular disease (stroke), malignancies, and heart disease.

¹ According to Ato, Makoto (2000) *Gendai Jinko Gaku* [Modern Demography], Nihon Hyoron sha, 7~8% of the total population moved between 1963~74.

Infant and maternal mortality rates and birthrate declined precipitately. In this period, the major health issues in Japan shifted from infectious disease control and maternal and child health, to lifestyle-related diseases.

At the same time, growth of heavy industries, urbanization, and the emergence of the automobile society led to new challenges, including environmental pollution, drug-induced sufferings, occupational health risks, and injuries from traffic accidents.

Characteristic of Japanese initiatives during this phase were: 1) achievement of universal health insurance coverage in 1961, leading to an expansion of medical services; 2) establishment of an emergency medical system using fire departments, in response to increased traffic accidents; 3) a popular movement against environmental and drug-induced sufferings, that brought about changes in government policy. During this period, the level of public health and medical services reached the same level as other advanced nations, thanks to increased economic growth and progress in medical science. Therefore, fewer initiatives unique to the Japanese are seen from this time on.

1-5 Phase V: Challenge of an Aging Society (1980~present)

During Phase V (1980~present), Japanese society began to recognize the need to deal with the sharply declining birthrate and the aging population. Medical advances during this period lent further urgency to the search for a complete overhaul of the health sector. This struggle still continues to the present day. The older population (the population aged 65 and over) exceeded 7% in 1970, making Japan an “aging when society,” and the speed of population aging has been accelerated². In 1991, the so-called “bubble economy” collapsed, and Japan entered a prolonged period of slow growth. Japan became a

“mature society” now. With pursuing decentralization since the 1990's, Japan is in the process of reconstructing the system of provision of public health and medical services on a more humanized basis. At the same time, the entire social security system is also reengineering to suit the mature society.

Phase V can be considered the period when Japan has been seeking to remodel its health care system to meet the mature society with dwindling birthrate and an aging population, advanced medicine, and diversifying needs. This requires: 1) the establishment of more efficient and effective medical delivery system, with emphasis on quality rather than quantity; and 2) the development of a community-based, synthesizing approach with medical, public health and welfare services to meet people's detailed demands.

2. Toward the Use of Japan's Experience in Developing Countries

2-1 Feasibility of Applying Japanese Experiences to the Health Challenges Facing Developing Countries

When we will apply Japan's experience to the health challenges facing developing countries, it is necessary to determine the situations in each country. In this session, we will consider the feasibility of applying Japan's experience in terms of the patterns of disease prevalence in developing countries.

For this analysis, we will use the WHO classification of countries into five groups according to child (0~5 years) and adult (15~59 years) mortality rates (see Table 12-1). We will consider the three classifications that are typical of developing countries, “Group B: Developing country with low mortality rate (80 countries),” “Group D: Developing country with high mortality rate (48 countries),” and “Group E:

² The older population exceeded 14% in 1995, making Japan an “aged society,” and as of April 2003 it was 18.9%.

Table 12-1 WHO Classification of Countries according to Child and Adult Mortality Rates

WHO classification	Group name	Region and no of countries						
		Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific	Total
A	Developed country	—	3	—	26	—	5	34
B	Developing country with low mortality rate	—	26	13	16	3	22	80
C	European country with high mortality rate	—	—	—	9	—	—	9
D	Developing country with high mortality rate	26	6	9	—	7	—	48
E	African country with extremely high mortality rate	20	—	—	—	—	—	20

Source: Produced by the authors from WHO (2002)

African country with extremely high mortality rate (20 countries)”³.

The main causes of death in the three groups (B, D and E) that we will be considering are given in Figure 12-2. In “Group B: Developing country, low mortality rate,” infectious diseases have been largely overcome, and are in the process of being replaced as the main public health challenges by lifestyle-related diseases such as malignancies and circulatory disorders (ischemic heart disease and cerebrovascular disease). In “Group D: Developing country, high mortality rate,” although infectious diseases have not been completely overcome, and issues remain in the field of maternal and child health, lifestyle-related diseases are emerging as the new public health challenge. In “Group E: African country, extremely high mortality rate”, HIV/AIDS contributes to the highest mortality rates of all. Mortality rates from other infectious diseases are also the highest of all groups, and the public health situation in these countries is the most serious and least favorable.

We can characterize “Group B: Developing country, low mortality rate” as being mostly in Phase IV, perhaps just entering into Phase V. “Group D: Developing country, high mortality

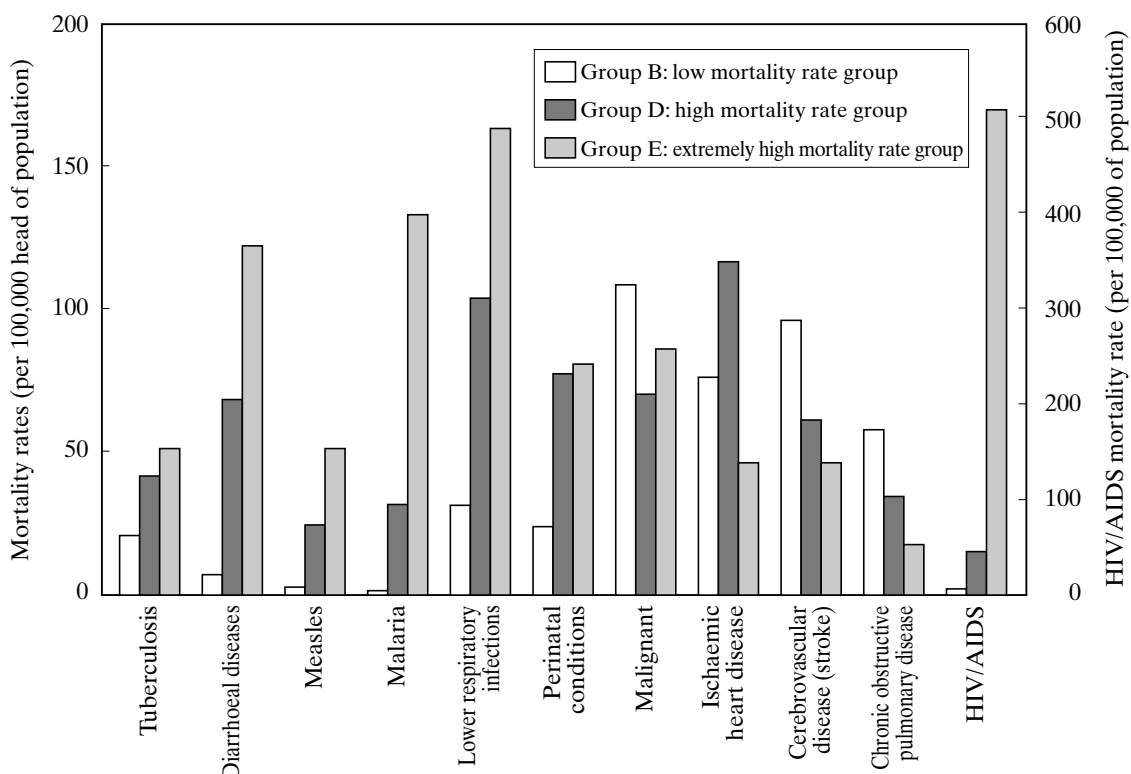
rate” are a mixture of Phases II and III, with some health problems from Phase I remaining, with lifestyle-related diseases from Phase IV just making an appearance. The countries in “Group E: African country, extremely high mortality rate,” on the other hand, are facing serious problems that Japan has never experienced.

In general, we can say that Japan faced and solved a single challenge in each period. Developing countries today tend to face ever increasing challenges, as each new health problem arises before the old problems have been fully resolved.

From the above, Japanese initiatives dating from Phase IV onwards should be of interest to “Group B: Developing country, low mortality rate.” For “Group D: Developing country, high mortality rate,” Japanese initiatives from Phases II and III should be applicable. Although initiatives from Japan’s experience in Phases I, II and III will be applicable to “Group E: African country, extremely high mortality rate group,” the issue of overriding importance in these countries is the control of the novel infectious disease, HIV/AIDS. These findings are summarized in Figure 12-3, and the aspects of Japan’s experience that may be applicable to each health challenge

³ Excludes “A: Developed country group.” “C: European high mortality rate group (9 nations)” was also excluded, as it was confined to a small group of nations, and almost all were former member states of the Soviet Union, and therefore adult mortality rates have risen due to special societal circumstances (extremely high mortality rates from lifestyle-related diseases).

Figure 12-2 Main Causes of Death in Developing Countries



Source: Compiled by the authors from WHO (2002)

Figure 12-3 Feasibility of Applying Japan's Experience to Health Problems in Developing Countries

Period in Japanese history	Phase I	Phase II	Phase III	Phase IV	Phase V
Main Japanese health challenges	<ul style="list-style-type: none"> Acute infectious diseases 	<ul style="list-style-type: none"> Chronic infectious diseases Maternal and child health 	<ul style="list-style-type: none"> Chronic infectious diseases Maternal and child health 	<ul style="list-style-type: none"> Lifestyle-related diseases Environmental and drug induced sufferings Occupational health 	<ul style="list-style-type: none"> Aging population
Main health issues for developing countries	<p>Group D: Developing country with high mortality rate</p>			<p>Group B: Developing country with low mortality rate</p>	
	<p>Group E: African country with extremely high mortality rate</p>				
	<p>HIV/AIDS</p>				

Source: Compiled by the authors

are summarized in Table 12-2.

The above analysis looks at broad trends, and only represents one possible way of looking at this

subject. It goes without saying that initiatives need to be developed for each country after careful examination of the prevailing situation there.

Table 12-2 Japan's Experiences in Public Health and Medical Services According to the Health Challenges Faced

Health issue	Applicable period in Japanese history	Applicable initiatives and lessons learnt
Acute infectious diseases	Phase I	<ul style="list-style-type: none"> Establishment and reinforcement of a consistent system of public health and medical services, comprising central government agencies, regional governments, public health centers, and healthcare service providers. Introduction of a notification system for acute infectious diseases with potential to cause serious health problems on a national scale.
Chronic infectious diseases	Phases II and III	<ul style="list-style-type: none"> Policy formulation based on surveys. Notification and registration systems. Community-based prevention programs, with willing participation of local residents. Linkages between public health centers and community organizations.
Infant and maternal mortality rates	Phases II and III	<ul style="list-style-type: none"> Activities of public health nurses and nurse midwives (it is important to provide sufficient staffing levels and remuneration, and a working environment that fires their enthusiasm). Establishment of public health centers. Promotion of maternal and child health educational programs in the community. Maternal and Child Health Handbook System (as well as a record of the health status, particularly in the puerperal period, for mother and child, the handbook contains guidelines for pregnancy checks, immunizations, and other health services).
Family Planning	Phase III	<ul style="list-style-type: none"> Promotion of family planning with the emphasis on protecting the mother's body, to increase the appeal to women (introduce as part of maternal and child health educational activities). An approach using local health issues, such as maternal and child health or parasitic diseases, as the entry point. Involve women in programs, as well as local decision makers, men, and parents-in-law.
Environmental sanitation (water supply and sewage systems)	Phase IV	<ul style="list-style-type: none"> Promotion of sustainable environmental sanitation through self-help and mutual aid by local communities. Municipalities produce plans to install water supply systems in accordance with their level of economic development. Finances are provided by the local government, with support from the national government. Waste treatment and household sanitation programs in collaboration with the Livelihood Improvement Movement.
Environmental pollution	Phase IV	<ul style="list-style-type: none"> Japan's experience of delayed response due to priority given to economic development teaches us the importance of prevention. A system of environmental assessments, and training the personnel to conduct them, is effective.
Occupational health	Phase IV	<ul style="list-style-type: none"> Survey workplace conditions through collaboration between government and industry. Cooperation between labor and management in improving the working environment is essential. Once corporation has gained sufficient economic strength, personnel such as occupational physicians should be recruited and trained, and the working environment improved, in a gradual process.
Emergency medical care	Phase IV	<ul style="list-style-type: none"> Introduce when a certain level of community-based system of provision of medical services has been established (confirmation required that infrastructure and other necessary condition have been met). Establishment of a centralized emergency communications network. Establishment of an emergency patient transport system (fire departments in Japan).
Lifestyle-related diseases	Phase IV	<ul style="list-style-type: none"> Promotion of preventive measures in countries where lifestyle-related diseases are replacing acute infectious diseases as the major causes of death. Introduction of personal health records and other health management tools. Promotion of initiatives involving the entire local community. Establishment of advanced medical research facilities.
Public medical insurance	Phase IV	<ul style="list-style-type: none"> Establishment of trial systems by willing communities and organizations. Development of a system with long-term vision toward a coming aging society.

Source: Produced by the authors

2-2 Characteristic of Japan's Initiatives that Can be Utilized in Developing Countries

In the following sessions, we will discuss those aspects of Japan's experience that can be utilized in developing countries in improving their health sector systems, based on the analyses of each field in Part II of this book. To this end, we extracted from Part II those initiatives that can be of use to developing countries, as shown in the appendix to this chapter. We then classified the periods in which these initiatives were instigated, the periods in which they played an important role, and the major players in each initiative. As a result, we were able to identify lessons from Japan's experience under the following eight categories.

<Through all phases>

- (1) Government's commitment
- (2) Policy formulation based on reliable statistics and surveys

<Phases II & III Initiatives in chronic infectious disease control and maternal and child health>

- (3) Community-based public health approach (collaboration between government, the community, and non-profit organizations)
- (4) Private organizations involvement (community groups, non-profit organizations, companies)
- (5) Centered on professional women approach
- (6) Participation by scientists and researchers

<Phases IV & V Initiatives to expand medical services and in response to the aging society>

- (7) Universal health insurance coverage
- (8) Lessons learned from failures - dealing with environmental pollution and the aging society

We will discuss each of these categories in detail below.

(1) Government's Commitment

In many developing countries today, it is taking considerable time to overcome challenges

in such fields as tuberculosis, maternal and child health, and population control. Without a strong commitment of the national government, it may well be difficult to achieve success in these areas. To demonstrate the firmness of its commitment, the government should explain to the people the importance of the initiative, provide the required funding, pass the necessary laws, and reinforce the administrative system to reach the rank-and-file.

Many developing countries are now engaged in decentralization, and the trend is for organizations to be built from the bottom up. This process is in no way impeded, however, by a strong commitment to solving health problems on the part of the central government. Furthermore, as long as there is no firm base of administrative services linking the central government, regional government, local government, and individuals, then a sustainable system of local self-government is unachievable, and true decentralization will not occur. A clear expression of commitment from the national government must come first, and in Japan's experience, this point takes a position of pride.

The Japanese system of public health and medical services has, throughout almost all the phases we have examined, been under central control, and extended relatively evenly throughout the nation. In particular, a strong sense of governmental commitment undoubtedly contributed to the achievement of favorable results within a short time. This was especially important in areas such as acute infectious disease control measures in the period of epidemic prevention, formation of the medical insurance system based on community-based medical insurance systems, national financing for medical services, government determination of medical service fees, and nationwide promotion of tuberculosis control programs and maternal and child health initiatives.

Based on these experiences, Japan can cooperate with developing countries to reinforce their governmental commitment in the following ways.

1) Japan can assist with capacity building in public health administration, at both the central government and regional government levels, and with establishing a system of collaboration between the two. 2) Assistance could be given with legislative backing, as worked so successfully in Japan, for infectious disease control measures, and for policy formulation in combating tuberculosis and HIV/AIDS. 3) Technical assistance could be given to countries aiming for universal health insurance coverage as a future goal, in establishing a system of community-based health insurance at the local government level that could later be expanded step by step.

(2) Policy Formulation Based on Reliable Statistics and Surveys

The international community has recognized the importance and necessity of keeping statistics, since the period immediately following the end of the Second World War. Despite international assistance in this area, many developing countries are struggling to collect accurate statistics for the purposes of policy formulation and monitoring of basic information.

Population Vital Statistics were already being collected in Japan in the Edo Era (1603~1868), and census registrations were conducted from the Meiji Era (1868~1911). Reliable Population statistical information was therefore available at a relatively early stage⁶. A modern-scientific full census was commenced in 1920. The Health and Sanitation Research Council was also established, setting the course for policy formulation based on nationwide surveys. It is worthy of note that, at a

relatively early stage, statistical data concerning population and public health gave a clear picture of public health issues and the health needs of the population, enabling policy formulation based on reliable statistics. The registration system for infectious diseases, such as cholera, tuberculosis, and sexually transmitted diseases that have important social implications, and the strong emphasis on accurate, is also Japan's unique experience.

Establishment of statistical systems is an area in which the Japanese are particularly proficient, and there are variety of ways⁷ to provide assistance. 1) Assistance in establishing a system of statistics collection through the conduct of population census and sampling surveys. 2) Assistance can be provided within an international framework, in statistical projects for which international comparisons can be readily made, such as the World Fertility Survey or the Demographic and Health Survey. 3) Assistance can be offered in developing estimation methods based on locking or not sufficiently reliable data. 4) Assistance can be given in such areas as reinforcement of the registration system using information from the community level as part of the DOTS strategy. 5) A number of systems unique to Japan, such as the Health Register for patients to monitor their own health status⁸ and Health Handbooks given to patients to keep their results in developed by the Saku Central Hospital, can also be applied in developing countries. In addition to the above areas, assistance can be provided for countries to train their own personnel in each area.

⁴ JICA, in collaboration with the Japan Anti-Tuberculosis Association, is presently investigating an initiative in Zambia that will use the DOTS strategy for capacity building in public health administration as part of assistance for HIV/AIDS control.

⁵ Miura, Yoshimi (2002) "*Sekai no Jinko Sensasu* [World's Population Census]," Nihon Jinko Gakkai ed. *Jinkou Dai Jiten* [Encyclopedia of Population], Baifukan Co., Ltd.

⁶ Yamaguchi, Kiichi (2000) "*Jinkou Shiryō to Jinkou Tokei* [Historical Materials and Statistics of Population]" Population Association of Japan ed. *Jinkou Dai Jiten* [Encyclopedia of Population], Baifukan Co., Ltd.

⁷ Assistance in the field of statistics is also covered in Institute for International Cooperation, Japan International Cooperation Agency (2003) *Second Study on International Cooperation for Population and Development*, Japan International Cooperation Agency.

⁸ Similar "Health Register" systems are seen in other regions of Japan.

(3) Community-based Public Health Approach
(collaboration between government, the community, and non-profit organizations)

In almost all developing countries, health posts or health centers comprise the public health facilities in peripheral communities. Health volunteers are present in similar numbers to public health nurses in Japan. Community groups and NGOs are present in many countries. A coordinator to link these community resources is often lacking, however, and no organic collaboration between the various players.

A uniquely Japanese community-based public health approach was seen everywhere, particularly during Phases II and III from 1920 to 1960. This was a factor in the remarkable overall improvement in the field of public health and medical services in Japan over this period. The Japanese community-based public health approach is much broader in scope than what is commonly called "Community Health" in English nowadays, and can be considered a type of social dynamism. We will accordingly refer to the public health approach developed in Japan as the "Japan-style Community Health."

Analysis of the elements that make up "Japan-style Community Health" gives the following points: 1) In a period totally lacking in medical facilities or personnel, all the relevant parties (public health centers, public health nurses, community groups, hospitals and private clinics, local medical doctor associations, community centers, schools, etc.) collaborated in making the best use of community resources. 2) As the democratization of society spread, programs involving "Awareness Raising" and "Discovery-based Learning" led to the development of public health activities initiated by the community. 3) The coordinating role played by public health nurses, public health centers, local government, and hospitals. 4) Public health experts surveyed communities, eliciting and analyzing latent health needs of the residents. 5) Public health and medical

services constituted an area of great interest to the community (especially women) in their daily lives, so they were highly motivated to participate in the problem-solving process. Members of the community also became aware that participation in public health initiatives also addressed problems in other areas, improving livelihoods and raising productivity, further increasing their enthusiasm. 6) Through comprehensive public health initiatives along the above lines, the final result of these activities was regional promotion.

These elements of "Japan-style Community Health" contain a number of suggestions for low income nations today, and many cooperative programs incorporate these factors. An example is the "Integrated Project of Family Planning, Nutrition and Parasite Control" (1979~), run in Nepal by the Japanese Organization for International Cooperation in Family Planning (JOICFP) with the financial assistance of the United Nations Population Fund (UNFPA). This project has achieved remarkable results, developing a health program based on the needs of the community with parasite eradication as the entry point, fostering ownership by the local residents, and aiming for independent development through a user fee system.

JICA has also conducted a number of cooperative programs on similar lines. An example is the "Reproductive Health Project", run in Vietnam (1997~2000) with assistance from JOICFP. This project also incorporated many of the elements of "Japan-style Community Health," including reinforcement of public health administration at the community level, retraining of village public health personnel, improvements to public health centers, public health education for the community, and outreach activities by maternal and child health teams. The "Family Planning and Maternal and Child Health Project" in the Philippines (1992~2002) achieved excellent results from a

program of public health education for the community⁹, based in public health centers, that included puppet medical theatre, as earlier trialed by the Saku Central Hospital in rural villages in Japan¹⁰. The “Family Planning and Gender in Development (WID) Project” in Jordan used micro-loans for income-generating programs for women as the entry point, while at the same time involving the decision makers in the community, including men this project took. “Japan-style Community Health” activities in a variety of areas, such as promoting village development, the health of the community, and family planning through the empowerment of women.

(4) Private Organizations Involvement
(Community Groups, Non-profit Organizations, Companies)

It is often the case in developing countries that government policy is not fully enforced. Reasons for this may be that the policy does not reflect the requirements of the actual situation at the site of implementation, or that there is no organization on the ground that has the strength to put into effect the public health activity.

Although public health policies in Japan have been implemented on a nationwide basis under central control, many programs have incorporated pre-existing non-governmental activities, or have utilized community groups already active in that particular area. Improvements in public health and medical services can be said to have been the result of collaboration between government and various non-governmental bodies. Community organizations in Japan have not just waited passively for the government to act; rather they have taken positive steps to protect their own

health and welfare.

Japan has a long history of mutual aid organizations in rural areas. From the late Edo Era (1603~1868) until the period of advanced economic growth, the several self-livelihood improvement movements were active in rural communities combating the chaotic conditions faced by rural villages at times of change¹¹. One major example is the activities of “community-based health organizations” in poverty-stricken regions of Japan during the immediate post-war time. These organizations improved the living environment in the community, thereby preventing infectious diseases and improving the general level of knowledge of health issues.

The post-war activities of public health nurses and “livelihood extension workers,” given democratic direction by the GHQ, were therefore well received in rural regions made receptive by their historical experience. The Japanese Government has been adept at taking up successful programs commenced by community groups, universalizing them, and applying them on a nationwide scale. Successful examples include the post-war “No Mosquitoes and Flies Program,” “Women’s Association for Anti-Tuberculosis,” and the “Maternal and Child Health Promoter System.” Implementation of the Long-term Care Insurance Law, promulgated in 1997, is also one of the principal objectives of several private corporations and non-profit organizations (NPOs). The NPO Law itself is intended to utilize the power of the civil society, and can be considered the embodiment of a similar concept.

To meet the major challenges of each period, the government has established and utilized

⁹ Public health education using techniques such as “medical theatre” and picture-story shows performed by the medical staff from the Saku Central Hospital has been part of some highly successful awareness campaigns.

¹⁰ Japan International Cooperation Agency (2001) “Evaluation on Specific Topic: Evaluation of Population and Health Sector in Philippines, collaboration with USAID (The field of maternal and child health and family planning) (draft)”

¹¹ Mizuno, Masami (2002) “*Kindai Nihon Noson niokeru Seikatsu Kaizen Undo to Sengo no Noson Seikatsu Kaizen* [Livelihood Improvement Movement in the History of Rural Villages of Modern Japan and Lives of Rural Villages after the War], JICA, Study report on the cooperation for livelihood improvement at rural villages (First volume).

private organizations that have a strong public commitment (public organizations). Two typical examples are the Japan Anti-Tuberculosis Association (JATA), active in tuberculosis control initiatives, and the Boshi Aiiku-kai (Married Women's Voluntary Groups for Mother-Child Health and Welfare), active in maternal and child health. Both these groups were established as Imperial household initiatives, although they were set up as private organizations. They are managed by highly motivated specialists of the highest caliber, and the fact that these organizations have the Imperial imprimatur has been beneficial in increasing the level of goodwill for their programs from the general populace.

It has been characteristic of Japan that the private organizations have worked so effectively in overcoming health problems on a national scale in the fields of maternal and child health and tuberculosis control. Neither JATA nor the Aiiku-kai could be called a purely private organization, but their programs have been devised and implemented with community participation, and this bottom-up approach has been the driving force in moving large segments of the population.

In addition, private corporations have played a major role in areas such as tuberculosis control, family planning, and parasitic disease control, through vaccination and screening programs that aid in prevention and early detection. Their contribution was so great in tuberculosis control and family planning in particular that some consider that in the end the private corporations that were responsible for the success of initiatives in these areas¹².

It would not be possible to apply Japan's

experience, with the activities of a number of uniquely Japanese private organizations, directly to developing countries. It is possible for many developing countries' government to take a successful example of community-based activities in progress in some regions as "good practice" in that field, institute them as policy, and provide funding for expansion to a nationwide project, with extensive exposure in the mass media. In developing countries, public organizations supported by the Royal Family or the national leader are often involved in social development projects, so a useful approach would be to improve the planning and management aspects of these organizations. Active involvement by private corporations, an experience unique to Japan, also has potential for application by developing countries.

The period of economic growth in Japan saw the operation of a "company centered society." In order to secure a high quality workforce, lifelong employment was the rule for major corporations. The companies looked after their employees in terms of health, family life including family planning, and even their post-retirement livelihood. The government also supported this system through preferential arrangements¹³. Although the life-long employment system in Japan is vanishing, corporations constitute a powerful social resource, and measures involving such a resource in some way to improve public health and medical services in countries experiencing a period of growth. In Thailand, Japanese companies maintain the same standards for occupational health and safety as in Japan, considerably advanced in comparison with local concerns¹⁴. In this way, Japanese companies demonstrate to the local businesses the fruits of

¹² Shimao (1996) *Waga Kuni no Kekkaku Taisaku* [Tuberculosis Control in Japan], JATA Books No.9. and Obayashi, Michiko (1989) *Josanpu no Sengo* [Midwives after the War], Keiso Shobo.

¹³ Asahi Newspaper Corporation eds (1995) *Kaisha Taikoku - Sengo Goju-nen* [Company's Superpower - for 50 Years after the War], Asahi Bunko.

¹⁴ Japan International Cooperation Agency (2000) Evaluation on Specific Topic in FY1999: Assistances for People with Disabilities in Thailand.

Japanese initiatives. When measures such as preventive vaccinations and health checks are part of the national system, it is important that companies take the opportunity to provide them for their workers and their families. Japan is also well placed to offer assistance in this area.

(5) Centered on Professional Women Approach

Almost all developing countries have a system of public health nurses, but they are very few in number. They are therefore unable to provide outreach services, such as those provided by Japanese public health nurses during the period of "Japan-style Community Health," and provision of services finely attuned to the needs of their local community is difficult. Many developing countries train and enlist health volunteers (or health workers), supervised by public health nurses, to provide health services directly to the community. The training of these volunteers is essential for the improvement of public health and medical services in developing countries.

In Japan, professional women such as practicing midwives, public health nurses, and livelihood extension workers have contributed greatly to the provision of public health services, health education, improvements to the living environment, and increased living standards at the community level.

Practicing midwives were present in Japan as private service providers since the Meiji Era, around 1868, when they were known as "*sanba*" or traditional birth attendants. The Meiji Government accredited midwives as medical service personnel. During and soon after the Second World War, midwives underwent further education in maternal and child health and family planning, in order to participate in awareness campaigns. Public health nurses began as non-profit activities in the Taisho Era (1912~1926), providing home visit services. The government established public health nurses

as a profession at the same time as that of public health centers, as major providers of community-based health services. Livelihood extension workers were established as professional workers for modernization of rural farmers by order of GHQ, using the point of view of local community, developed and applied a problem-solving approach, now called the Participatory Rural Appraisal (PRA) Method.

During the pre- and post-war periods of poverty, a lack of knowledge concerning public health, and difficult access to medical institutions, a common feature of these professional women is that they felt that the task of "protecting the lives of the residents of their communities" fell to them, and worked tirelessly at the grass-roots level due to their sense of mission. They did not provide a standardized service as dictated from above, but rather considered the basic needs of the community as members of that community and particularly as women, and responded to those needs. Another important common characteristic is that they did not seek financial assistance from outside, but sought to respond to perceived needs using only resources within the community. Practicing midwives, public health nurses, and lifestyle extension workers enjoyed high status within the community, and were well rewarded financially, and these two points should not be overlooked in applying this experience in developing countries.

The activities of these professional women contributed greatly not only to public health, but also to improvements in living standards, and to the independence of local society. These can also be considered a result of the empowerment of women. Some of the factors that made women the driving force behind these successes are: 1) Women used to discrimination are secretly aware of the possibility of reform¹⁵, 2) Women are generally more interested in childbirth and family health matters, 3) Women are in charge of food,

¹⁵ Oikawa, Kazuo (1987) *Soncho Arika* [A Great Village Mayor], Shincho Bunko.

clothing and shelter within the household, matters intimately related to health problems, 4) Women spend their lives within the local community, can readily identify problems, and act to correct them¹⁶, 5) In general, they have few social impediments (employer/employee relationships within organizations), 6) Women are by nature generally more willing to enter into a new activity without concern for the possibility of failure

It should be possible in developing countries to actively recruit women as health volunteers (health workers), to play a major role in community-based health. For example, as part of assistance for the DOTS strategy by JATA in Nepal, ordinary housewives have detected a case of tuberculosis in their neighbors, delivered his medicine every day and overseen its administration, and effected cures. This has further empowered the woman, given her the confidence "I managed this cure," and earning the respect of the community. She has developed into a project leader, in charge of thousands of volunteers¹⁷. When women become major players in community-based health programs in developing countries, it is important to consider such points as what changes affect women, what obstacles there are to participation by women, and what will promote activities by women.

(6) Participation by Scientists and Researchers

Little involvement is seen from scientists and researchers in policy and technical matters in the field of public health and medical services in developing countries. The reasons for this include the small numbers of scientists and researchers themselves, insufficient funding, and a lack of opportunities for contact with the administration. Improvements in public health and medical services require policy and technological development with

a sound scientific basis, through the active participation of scientists and researchers.

Review of the Japan's history shows that many scientists and researchers contributed to the achievement of the present system. For example, in the field of family planning researchers were involved in policy decisions, and through action research in model villages, they developed the model adopted nationwide. In the tuberculosis control campaign, pathologists, microbiologists and clinicians were active from the public health viewpoint, and played an important role in research, collection of information, evaluation of policy, lobbying politicians and administrators, and awareness campaigns to the general public¹⁸. In the campaign to control parasitic diseases, the regional parasitic disease control associations contributed in technical areas and awareness campaigns with assistance from local universities.

In the field of occupational health, attempts to regulate occupational health and safety brought strong opposition from corporate management. This was overcome through epidemiological research that established the grounds for the new legislation. Another example is, through activities in conjunction with rural residents, the Medical Director of the Saku Central Hospital developed the new field of rural village medicine, and has continued to this area.

In developing countries as well, scientists and researchers should recognize the important role they can play in improving public health and medical services in their own countries, and develop ways (problem recognition and problem solving, collaboration with other players, e.g. administrators and other experts) in which they can fulfill that role. Japan can provide assistance in the training of scientists and researchers, by raising awareness and skills through technical cooperation

¹⁶ Ishikawa, Nobukatsu (2003) "Primary Health Care" (Sixth training course and lecture for experts about Tuberculosis control etc, September 17, 2003)

¹⁷ *ibid.*

¹⁸ Ishikawa, Nobukatsu (1999) "*Nihon no Kekkaku Taisaku ni Manabumono* [Lesson from Japan's Tuberculosis Control] Public Health, Vol. 63, No.3.

project with Japanese experts, training in Japan, and academic exchanges between universities.

(7) Universal Health Insurance Coverage

Lack of accessibility to healthcare services has become a major issue in developing countries. Through universal health insurance coverage, Japan has achieved a system that guaranteed equal accessibility to medical facilities, whether publicly or privately owned, to anyone with little concern over cost. Universal health insurance coverage was achieved in Japan at a relatively early stage. The National Health Insurance Law of 1938 ushered in the first era of universal health insurance coverage, at a time when tuberculosis was rampant, with the recognition that "Disease causes poverty." It is also worthy of note that since over half the population at this time were not formally employed (workers in agriculture or the informal sector), the system of universal health insurance coverage was uniquely developed based on small-scale community-based health insurance. The pre-war health insurance system was all but destroyed by the Second World War, and its reimplementation was regarded as a major aim of the post-war national reconstruction. Universal health insurance coverage was again achieved 16 years after the end of the war. In this way, through recognition that "disease causes poverty," the government made a strong commitment towards creation of a health insurance scheme during a time of poverty, and priority was given to initiatives in this area despite financial constraints. This suggests that developing countries can also afford to assign a high priority to health insurance in their policy deliberations.

From Japanese experience, two preconditions for the achievement of universal health insurance coverage are realized, which are strong governmental commitment, and the capacity of an administrative body (or some other public institution) It should also be considered to introduce universal health insurance coverage until the economic strength of the government and people have reached a certain level, so a realistic approach would be to adjust the introductory scale

according to the economic stage in each country, and progressively widen the scope of the coverage. It should be also take into consideration. that a high proportion of the people in developing countries are employed in the informal sector. How to incorporat these huge population into any scheme is also a challenge. Japan's early experience of community-based health insurance schemes should be applicable in this challenge.

(8) Lessons Learned from Failures — Dealing with Environmental Pollution and the Aging Society

Although Japan now boasts the world's highest standard public health system, there are also a number of regrettable areas from the past. Since the Meiji Era, around 1868, the Japanese system of public health and medical services has been under central control through a relatively stable bureaucratic system. But it must be said that the response of the administration is slow, in that it takes some time between a need arising until the systems, including legislative measures, are put in place to meet that need. In practice, in areas such as the public health nurse system and maternal and child health programs, services have emerged from within the private sector in response to needs that have arisen, and the administration has then acted to expand and systematize those services.

One area where the government response was particularly delayed, with regrettable consequences, was environmental pollution. Other areas where challenges remain to be faced are the formation of a public debate over reproductive health/reproductive rights, care in the community as part of emergency medical care, and occupational health and safety programs in small to medium enterprises.

Following the achievement of universal health insurance coverage, the numbers of medical institutions and personnel were expanded at an accelerated rate in the 1960s along with the advanced economic growth at the time. Concerns over a possible over-supply emerged at the start

of the 1980s, however, and it must be said that long-term planning at that time was overly optimistic concerning requirements for medical services. Long-term forecasts were also overly optimistic concerning financing for health insurance, which are now in crisis brought about by the aging society, declining birth rate, increasing medical costs, and the prolonged economic downturn. There are also concerns over the quality of medical services. As Campbell et al. pointed out in 1996, the delay of developing a referral system from primary to tertiary institutions. Even now patients flock to major hospitals on initial presentation, and complain of “a three hour wait for a three minute consultation.” Examination and treatment methods in Japan are also often criticized for over-prescribing medications, for looking at the data not the patient, their in Japan with these criticisms in mind, service providers at the medical frontline should have respect for human dignity, and initiatives regarding informed consent (explanation and consent for medical treatment) in recent years. The concept that the patient makes the decisions regarding medical treatment¹⁹ has finally entered the doctor-patient relationship, at this point in Japan's long history of modern medicine.

The background to these problems is that, since the introduction of universal health insurance coverage, issues that should be dealt with through social welfare programs have all been included under the umbrella of medical services. This refers in particular to the care and welfare of the elderly and disabled. Services aiming to improve their quality of life were until the 1980s almost all part of the medical system²⁰. This distortion evidenced itself in social admissions to hospitals, worsening the quality of

care and increasing medical costs. The long-term care insurance system for elderly was implemented. Its effect on quality of care needs to improve. There is also an urgent need for a fundamental overhaul of the pension system, in response to the ever-accelerating decline in the birth rate, and population aging. Many analysts notice that anxiety concerning the entire social security system on Japanese people led to the recent downturn in economic activity. This reflects the present situation, whereby “the Japanese social security system is well suited to a ‘developing country model,’ and accordingly the response to a mature society is extremely slow”²¹ (see Box 12-2).

These regrettable areas of Japan's experience provide two universal lessons. Firstly, initiatives in the field of public health and medical services must commence with respect for human dignity. If healthcare systems, initiatives in occupational health, or programs against environmental pollution are undertaken with respect for human dignity, then the correct course of action will become naturally obvious. To put this idea into practice, the administration of public health and medical services must be democratic in nature. This in turn requires the establishment of administrative services based on genuine decentralization. The second lesson is related to the social security system. Japan developed one model for a developing country social security system, but the response to a mature society was delayed. This shows the importance of a long-range vision based on forward planning. Countries contemplating the introduction of basic health insurance and pension systems might find this lesson useful. In countries that have already achieved a certain standard of public health and medical services, and are in the process of

¹⁹ Murakami, Yoichiro (1996) *Niju-seiki no Nihon (9) Iryo-Koreishakai he mukatte* [Japan in 20th Century (9) Medical Care - Toward Aging Society] Yomiuri Shimbun Sha.

²⁰ Kawakami, Takeshi and Kosaka, Tomiko (1992) *Sengo Iryo-shi Josetsu* [Preface on the History of Medical Care after the War], Keiso Shobo.

²¹ Hiroi, Yoshinori (1999) *Nihon no Shakai Hoshō* [Social Security of Japan], Iwanami Shinsho.

developing health insurance and pension systems, the challenge is to establish a sustainable social security system. Almost all countries are expected to experience aging of their population at some time in the future, so to ensure high quality lifestyles for their people over the long-term, a balance needs to be maintained between economic development and improved quality of life (QOL).

3. Further Areas Requiring Study

(1) Wider and Deeper

The aim of this study was not simply to introduce Japan's experience in developing the field of public health and medical services, but also to elicit those initiatives intended to improve the health standards of the people of Japan "that can be of use to the people of developing countries. In particular, we included characteristic elements of the Japanese experience that have been of interest to people from developing countries, and in our analyses concentrated on those elements that will likely be of benefit to those developing countries and regions particularly lacking in medical resources. As a result, we identified a "community-based health approach" that utilized community human and material resources to the fullest, in areas such as maternal and child health, family planning and infectious disease control. We not only investigated pre-determined themes, but presented a summary of the overall experience of initiatives that improved the health standards of the population, with the emphasis on the way in which health issues changed over time, and how public health and medical services responded to those changes.

As a result, there were inevitably a number of themes that we were unable to cover, or investigate in depth. These will require in depth coverage in a future study. Some of the themes straddle a number of fields, and should be looked at from a viewpoint other than public health and medical services at another time. For example, the

fields of environmental sanitation, environmental pollution, occupational health, and the social security system, from Phases IV and V dating from the period of advanced economic growth onwards, should be analyzed from other viewpoints. Japan's experience in these fields, including a number of areas for regret, contains a number of lessons for newly industrialized countries in Asia.

In our analyses, we were unable to fully analyze correlations with factors such as economic development and socio-cultural backgrounds. Economic strength and socio-cultural background must be considered before a public health and medical system can be introduced, so future studies should conduct in-depth analysis of these factors.

In addition, the efforts of public health nurses and researchers out in the community, working selflessly to solve problems, played a large part in improving Japan's public health and medical services, whereas in developing countries there is usually a shortage of such personnel. A definitive study of the fundamental issues that make it difficult in developing countries to train and retain these human resources that Japan has produced so successfully, still needs to be performed. International cooperation to aid developing countries in training and keeping these important personnel is considered an important area in developing independence within the emphasis on ownership, and further study is required in this important area.

(2) Adapting to the Situation in Developing Countries

The field of public health and medical services is closely related to the nations history, culture and value system. Its application should suit its politico-economic situation of that country. Therefore, introduction of a new system, or reform of the present one, should be preceded by careful consideration of the cultural, social, economic and political background of the particular developing country. With the influence

Box 12-1 Feasibility of Application of Japan's Experience in Public Health and Medical Systems to Developing Countries

A number of characteristics of Japan's experience correspond quite closely to recommendations concerning establishment of public health and medical systems in developing countries in the 1993 World Development Report "Investing in Health." The main recommendations in this report are given below.

- * Governments should drastically reduce their investment in specialized and tertiary medical services, due to their low cost-effectiveness.
- * Instead, more funding should be allocated to public health initiatives, such as infectious disease control programs.
- * Emphasis should be given to the provision of essential clinical services.
- * In financing a medical system, a system that covers the entire population is more efficient than one that only covers the poor (the latter causes problems with maintaining political support, and the cost of determining eligibility).
- * It is more efficient to utilize private sector providers of medical services as much as possible.
- * No effort should be spared in providing basic primary education to girls in particular (a mother's influence is particularly great in determining the family lifestyle, in a variety of ways related to food, childbirth and medical treatment).

In 1999, Hiroi concluded, "Japan adopted a system, perhaps not deliberately, but in terms of results, that can be called the ideal 'healthcare system for a developing country'. This is reflected in the often admired 'high performance Japanese medical system (low medical costs and high health indices)'." In 2003, Hiroi further suggested, "Accordingly, what is now required is a model that objectively formularizes the strengths and weaknesses of Japan's healthcare system, based on international comparisons such as the above. This could be compared with the individual situation of a given developing country, to determine the most desirable way of applying the Japanese experience."

Source: Hiroi, Yoshinori (1999) *Nihon no Shakai Hoshō* [Social Security of Japan], Iwanami Shinsho., Hiroi, Yoshinori (2003) "Characteristics of Japan's Experience concerning the Development of its Social Security System], Institute for International Cooperation, JICA., *Development of Japan's Social Security System*.

of globalization, the socio-economic situation and the nature of the health challenges faced by developing countries today are considerably more complicated and varied than those Japan dealt with in the past. Simple "formularization" of Japan's experience cannot be expected to yield any useful principles.

With the above in mind, in the future we would like to see analyses conducted of what elements of Japan's experience can be applied in

what sort of countries, and how the Japanese experience should be rearranged to suit the situation of that country. These analyses could then be delivered to healthcare workers in the frontline of that developing country.

(3) Accumulating Experiences in International Cooperation

Some 37 years have already passed since the first cooperation in the field of public health and

²² "International Family Planning Training," a project that takes trainees in the population field.

medical services by Japan's Official Development Assistance (ODA) in 1967²². During that time, a number of international cooperative projects have incorporated uniquely Japanese approaches, as well as the opinions of a variety of Japanese experts. There have not been any studies of their relationship to Japan's experience in a systematic way, however. In this chapter, we briefly introduced several successful examples of cooperation in "2-2 Characteristic of Japan's Initiatives that Can be of Use to Developing Countries," but this was by no means an in-depth analysis. We should now seek the cooperation of

Japanese experts with actual experience and knowledge of cooperation in developing countries in making a detailed analysis of the application of Japan's experience in overseas cooperation, regardless of success or failure. Extrapolating from these mechanisms, we should analyze success factors, inhibitory factors, and external criteria, and list some points that require consideration in the application of Japan's experience in cooperation with developing countries. It is also needed to create information dissemination system where anyone requiring information can access it, any place and any time.

Appendix. Japan's Experiences that May be Applicable in Cooperation with Developing Countries

In the table below, we extracted initiatives in each field covered in Part II that may be applicable in developing countries. We then classified the main players for each initiative and the phase in which it was mainly implemented, and categories of Japan's initiatives which are described in 2-2 of this chapter.

N.B. 1: "Most important phases" refers to the phases in Japanese history in which the initiative that may be applicable to developing countries was implemented. The following time divisions from Part I are used:

Phase I: Acute infectious diseases control (1868~1919)

Phase II: Chronic infectious diseases control and formation of maternal and child health services (1920~1945)

Phase III: Restructuring the health administration (1946~1960)

Phase IV: Expanding medical services (1961~1979)

Phase V: Challenge of an aging society (1980~present)

N.B. 2: In the "Main players" column, "Community" refers a variety of participants in community-based health, including public health centers, public health nurses, and local residents.

N.B. 3: "Characteristic initiatives" refers to the following, outlined in "2.2 Characteristic Japanese initiatives of Chapter 12 that can be of use to developing countries" in this chapter.

- 1: Government's commitment
- 2: Policy formulation based on reliable statistics and surveys
- 3: Community-based public health approach (collaboration between government, the community, and nonprofit organizations)
- 4: Private organizations involvement (community groups, nonprofit organizations, corporations)
- 5: Centered on professional women approach
- 6: Participation by scientists and researchers
- 7: Universal health insurance coverage
- 8: Lessons learned from failures – dealing with environmental pollution and the aging society (areas for Japanese regret)

Areas covered in each Chapter of Part II	Most important phases	Main players	Characteristic initiatives
● Maternal and child health			
Appointment of midwives and public health nurses	II, III	Women	5
Promotion of community participation		Private organizations	3, 4
Maternal and Child Health Handbook System		National governments, community	1, 3
Provision and improved quality of birthing places		Local government, women	3, 5
Collection of maternal and child health statistics		National governments, community	1, 2, 3
● Family planning			
Approach emphasizing existing needs and the individual	III	Community	3
Establishment of a system of collaboration between government, academia and private sectors		Private organizations, Academia	4
Recruitment of midwives, public health nurses and general nurses as family planning workers		Women	5
Activities of private organizations		Private organizations, Academia	4, 6
Social marketing of contraceptive devices		Private organizations	4

Areas covered in each Chapter of Part II	Most important periods	Main players	Characteristic initiatives
● Infectious diseases control			
○ Tuberculosis control measures			
Governmental commitment	II, III	National government	1
Appropriate patient management and intensive treatment (function of public health centers, activities of public health nurses, comprehensive approach to tuberculosis control measures in the home)		Community	3, 5
Supervision and assessment based on a system of patient registration and notification		Community, women	2, 3, 5
○ Parasitic diseases control			
Problem recognition and activity of enlightenment	III	Private organizations	4
Activities of community groups		Private organizations	4
Collaboration with academia		Academia	6
Linkage with school health programs		School community	3
Approach to Public health with parasitic diseases control as the entry point		Community	3
○ Vaccination			
From compulsory to voluntary	III	National government	1
Providing vaccinations using existing service providers		Community	3
Providing vaccinations free of charge		National government	1
● Community-based health			
Despite limited medical facilities and personnel: <ul style="list-style-type: none"> • System of provision of community health services centered on public health centers • Appropriate placement of public health workers • Active participation by local residents • Collaboration between a variety of organizations 	II, III	Community	3, 5
Scientific approach to problem solving		Community, Academia	3, 6
Community health and a multi-sectoral approach		Community	3
● School health			
Parasitic diseases control	III	Local government, private organizations	3, 4
School lunches		National government	1
Liaison between schools, families and the local community		Community	3
● Emergency medical care			
Road trauma care	IV	National and local governments	1
Emergency obstetric and pediatric care (pre-emergency care in the community)	III	Community	3
● Environmental pollution control measures			
Reasons for delayed response to environmental pollution	IV	National government, private organizations	8
Advocacy movements for pollution victims and media reporting		Private organizations	4
Legislation, establishment of a responsible authority, provision of funding, and preferential taxation		National government	1
Establishment of a regulatory system, use of the courts		National and local governments	1
Pollution surveys and research		National government, Academia	1, 6
Environmental assessments		National and local governments	1
Education of environmental pollution control personnel		National and local governments, private organizations	1
Environmental pollution education		Private organizations	4
● Occupational health			
From government directive to worker-management partnerships	IV	National government, private organizations	1, 4
Participatory model of occupational health and safety		Private organizations	4
On site occupational health and safety measures		Private organizations	4
Promoting epidemiological research		Academia	6
Occupational health awareness and education campaigns		National government	1
Occupational health measures in small and medium-sized enterprises		Private organizations	8
● Public medical insurance			
Preconditions for success	IV	National government	1, 7, 8
Scale at introduction, and phased expansion (community health insurance system)		Local government, private organizations	1
● Expansion and maintenance of a system of provision of medical and public health services (Part I)	All phases	All players	1, 8

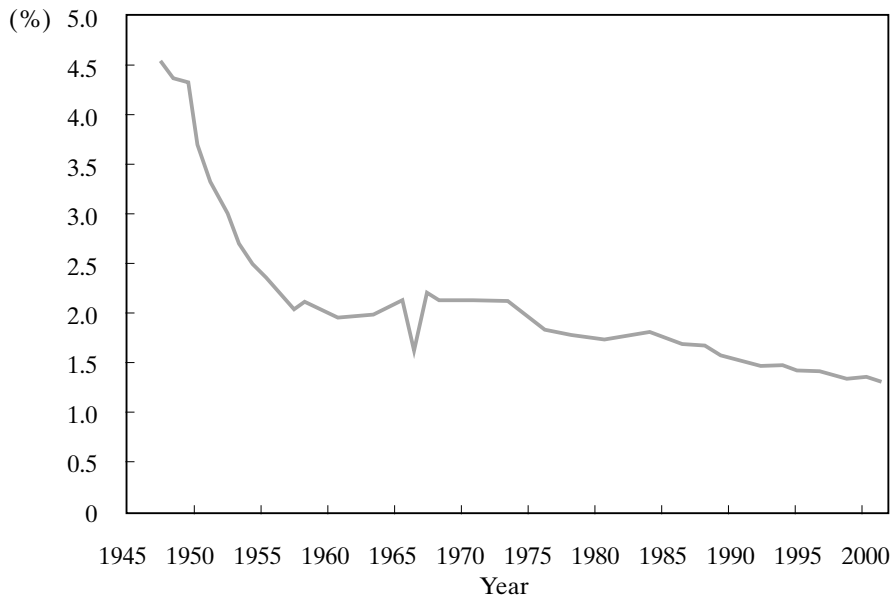
**Appendix Statistics Related to Public Health
and Medical Systems**

Appendix

Statistics Related to Public Health and Medical Systems

1. Overview

Figure A-1 Total Fertility Rate



The total fertility rate reached around 4.4 during the “Baby Boom,” but fell sharply after 1949, and dropped by more than half between 1949 and 1957. A rate of 2.0~2.1 was maintained for most of the period 1957~1973. The number of children one woman would bear on average throughout her lifetime had therefore become

approximately 2. A continued slow decline in the birthrate ensued.

The drop in the birthrate in 1966 occurred because it was a Year of the Fire Horse, an inauspicious event that occurs once every 60 years (a superstition says that women born in this year would be deadly to men).

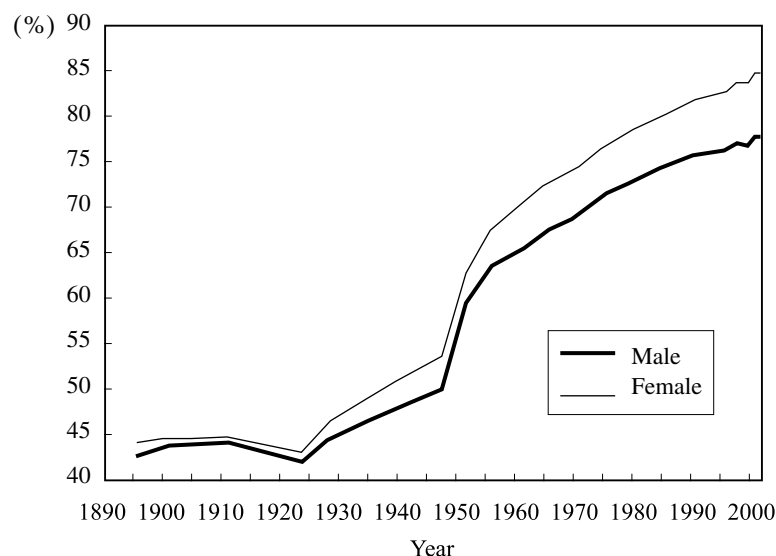
Table A-1 Main Population Vital Statistics and Population [number]

Year	Population	Births	Deaths	Natural Increase	Infant mortality	Neonatal mortality	Perinatal mortality	Maternal mortality	Stillbirths			(Reference) perinatal deaths
									Total	Natural stillbirths	Induced stillbirths	
1899	43,404,000	1,386,981	932,087	454,894	213,359	108,077	—	6,240	135,727	—	—	—
1900	43,847,000	1,420,534	910,744	509,790	220,211	112,259	—	6,200	137,987	—	—	—
1901	44,359,000	1,501,591	925,810	575,781	225,107	115,794	—	6,671	155,489	—	—	—
1902	44,964,000	1,510,835	959,126	551,709	232,652	116,654	—	6,556	157,708	—	—	—
1903	45,546,000	1,489,816	931,008	558,808	226,982	112,909	—	6,071	153,920	—	—	—
1904	46,135,000	1,440,371	955,400	484,971	218,756	106,477	—	5,742	147,058	—	—	—
1905	46,620,000	1,452,770	1,004,661	448,109	220,450	103,382	—	6,185	142,092	—	—	—
1906	47,038,000	1,394,295	955,256	439,039	214,148	105,307	—	6,237	149,731	—	—	—
1907	47,416,000	1,614,472	1,016,798	597,674	244,300	118,617	—	6,628	158,814	—	—	—
1908	47,965,000	1,662,815	1,029,447	633,368	262,801	123,867	—	7,091	162,676	—	—	—
1909	48,554,000	1,693,850	1,091,264	602,586	283,436	129,629	—	6,399	161,576	—	—	—
1910	49,184,000	1,712,857	1,064,234	648,623	276,136	126,910	—	6,228	157,392	—	—	—
1911	49,852,000	1,747,803	1,043,906	703,897	276,798	127,302	—	6,192	155,319	—	—	—
1912	50,577,000	1,737,674	1,037,016	700,658	268,025	123,902	—	5,770	147,545	—	—	—
1913	51,305,000	1,757,441	1,027,257	730,184	267,281	124,213	—	5,900	147,769	—	—	—
1914	52,039,000	1,808,402	1,101,815	706,587	286,678	125,745	—	6,418	145,692	—	—	—
1915	52,752,000	1,799,326	1,093,793	705,533	288,634	125,337	—	6,452	141,301	—	—	—
1916	53,496,000	1,804,822	1,187,832	616,990	307,283	132,000	—	6,337	139,998	—	—	—
1917	54,134,000	1,812,413	1,199,669	612,744	313,872	139,717	—	6,368	140,328	—	—	—
1918	54,739,000	1,791,992	1,493,162	298,830	337,919	145,710	—	6,812	142,507	—	—	—
1919	55,033,000	1,778,685	1,281,965	496,720	303,202	129,072	—	5,910	132,939	—	—	—
1920	55,963,053	2,025,564	1,422,096	603,468	335,613	139,681	—	7,158	144,038	—	—	—
1921	56,665,900	1,990,876	1,288,570	702,306	335,143	136,342	—	7,181	138,301	—	—	—
1922	57,390,100	1,969,314	1,286,941	682,373	327,604	132,856	—	6,565	132,244	—	—	—
1923	58,119,200	2,043,297	1,332,485	710,812	333,930	135,504	—	6,899	133,863	—	—	—
1924	58,875,600	1,998,520	1,254,946	743,574	312,267	126,385	—	6,273	125,839	—	—	—
1925	59,736,822	2,086,091	1,210,706	875,385	297,008	121,238	—	6,309	124,403	—	—	—
1926	60,740,900	2,104,405	1,160,734	943,671	289,275	119,642	—	5,721	124,038	—	—	—
1927	61,659,300	2,060,737	1,214,323	846,414	292,084	116,240	—	5,765	116,922	—	—	—
1928	62,595,300	2,135,852	1,236,711	899,141	293,881	115,682	—	5,997	120,191	—	—	—
1929	63,460,600	2,077,026	1,261,228	815,798	295,178	115,009	—	5,867	116,971	—	—	—
1930	64,450,005	2,085,101	1,170,867	914,234	258,703	104,101	—	5,681	117,730	—	—	—
1931	65,457,500	2,102,784	1,240,891	861,893	276,584	108,812	—	5,667	116,509	—	—	—
1932	66,433,800	2,182,742	1,175,344	1,007,398	256,505	104,573	—	5,530	119,579	—	—	—
1933	67,431,600	2,121,253	1,193,987	927,266	257,251	102,887	—	5,763	114,138	—	—	—
1934	68,308,900	2,043,783	1,234,684	809,099	255,063	103,408	—	5,709	113,043	—	—	—
1935	69,254,148	2,190,704	1,161,936	1,028,768	233,706	97,994	—	5,698	115,593	—	—	—
1936	70,113,600	2,101,969	1,230,278	871,691	245,357	101,043	—	5,384	111,056	—	—	—
1937	70,630,400	2,180,734	1,207,899	972,835	230,701	95,465	—	5,444	111,485	—	—	—
1938	71,012,600	1,928,321	1,259,805	668,516	220,695	89,159	—	4,877	99,528	—	—	—
1939	71,379,700	1,901,573	1,268,760	632,813	202,018	84,204	—	4,818	98,349	—	—	—
1940	71,933,000	2,115,867	1,186,595	929,272	190,509	81,869	—	5,070	102,034	—	—	—
1941	71,680,200	2,277,283	1,149,559	1,127,724	191,420	77,829	—	4,929	103,400	—	—	—
1942	72,384,500	2,233,660	1,166,630	1,067,030	190,897	76,177	—	4,586	95,448	—	—	—
1943	72,883,100	2,253,535	1,213,811	1,039,724	195,219	76,588	—	4,542	92,889	—	—	—
1944	—	—	—	—	—	—	—	—	—	—	—	—
1945	71,998,100	—	—	—	—	—	—	—	—	—	—	—
1946	—	—	—	—	—	—	—	—	—	—	—	—
1947	78,101,473	2,678,792	1,138,238	1,540,554	205,360	84,204	—	4,488	123,837	—	—	—
1948	80,002,500	2,681,624	950,610	1,731,014	165,406	73,855	—	4,437	143,963	104,325	31,055	—
1949	81,772,600	2,696,638	945,444	1,751,194	168,467	72,432	—	4,601	192,677	114,161	75,585	—
1950	83,199,637	2,337,507	904,876	1,432,631	140,515	64,142	—	4,117	216,974	106,594	110,380	108,843
1951	84,573,000	2,137,689	838,998	1,298,691	122,869	58,686	—	3,691	217,231	101,237	115,994	—
1952	85,852,000	2,005,162	765,068	1,240,094	99,114	51,015	—	3,417	203,824	94,508	109,316	—
1953	87,033,000	1,868,040	772,547	1,095,493	91,424	47,580	—	3,351	193,274	89,751	103,523	—
1954	88,293,000	1,769,580	721,491	1,048,089	78,944	42,726	—	3,240	187,119	87,201	99,918	—
1955	89,275,529	1,730,692	693,523	1,037,169	68,801	38,646	—	3,095	183,265	85,159	98,106	75,918
1956	90,259,000	1,665,278	724,460	940,818	67,691	38,232	—	2,838	179,007	86,558	92,449	—
1957	91,088,000	1,566,713	752,445	814,268	62,678	33,847	—	2,677	176,353	86,895	89,458	—
1958	92,010,000	1,653,469	684,189	969,280	57,052	32,237	—	2,560	185,148	92,282	92,866	—
1959	92,971,000	1,626,088	689,959	936,129	54,768	30,235	—	2,381	181,893	92,688	89,205	—
1960	93,418,501	1,606,041	706,599	899,442	49,293	27,362	—	2,097	179,281	93,424	85,857	66,552
1961	94,285,000	1,589,372	695,644	893,728	45,465	26,255	—	1,914	179,895	96,032	83,863	65,063
1962	95,178,000	1,618,616	710,265	908,351	42,797	24,777	—	1,813	177,363	97,256	80,107	62,650
1963	96,156,000	1,659,521	670,770	988,751	38,442	22,965	—	1,701	175,424	97,711	77,713	60,049
1964	97,186,000	1,716,761	673,067	1,043,694	34,967	21,344	—	1,699	168,046	97,357	70,689	56,827
1965	98,274,961	1,823,697	700,438	1,123,259	33,742	21,260	—	1,597	161,617	94,476	67,141	54,904
1966	99,056,000	1,360,974	670,342	690,632	26,217	16,296	—	1,266	148,248	83,253	64,995	42,583
1967	99,637,000	1,935,647	675,006	1,260,641	28,928	19,248	—	1,365	149,389	90,938	58,451	50,846
1968	100,794,000	1,871,839	686,555	1,185,284	28,600	18,326	—	1,275	143,259	87,381	55,878	45,921
1969	102,022,000	1,889,815	693,787	1,196,028	26,874	17,116	—	1,094	139,211	85,788	53,423	43,419
1970	103,119,447	1,934,239	712,962	1,221,277	25,412	16,742	—	1,008	135,095	84,073	51,022	41,917
1971	104,345,000	2,000,973	684,521	1,316,452	24,805	16,450	—	905	130,920	83,827	47,093	40,900
1972	105,742,000	2,038,682	683,751	1,354,931	23,773	15,817	—	827	125,154	81,741	43,413	38,754
1973	108,079,000	2,091,983	709,416	1,382,567	23,683	15,473	—	801	116,171	78,613	37,558	37,598
1974	109,410,000	2,029,989	710,510	1,319,479	21,888	14,472	—	700	109,738	74,618	35,120	34,383
1975	111,251,507	1,901,440	702,275	1,199,165	19,103	12,912	—	546	101,862	67,643	34,219	30,513
1976	112,420,000	1,832,617	703,270	1,129,347	17,105	11,638	—	474	101,930	64,046	37,884	27,133
1977	113,499,000	1,755,100	690,074	1,065,026	15,666	10,773	—	406	95,247	60,330	34,917	24,708
1978	114,511,000	1,708,643	695,821	1,012,822	14,327	9,628	—	378	87,463	55,818	31,645	22,217
1979	115,465,000	1,642,580	689,664	952,916	12,923	8,590	36,190	376	82,311	51,083	31,228	20,481
1980	116,320,358	1,576,889	722,801	854,088	11,841	7,796	32,422	323	77,446	47,651	29,795	18,385
1981	117,204,000	1,529,455	720,262	809,193	10,891	7,188	30,274	294	79,222	46,296	32,926	16,531
1982	118,008,000	1,515,392	711,883	803,509	9,969	6,425	28,204	279	78,107	44,135	33,972	15,303
1983	118,786,000	1,508,687	740,038	768,649	9,406	5,894	25,925	234	71,941	40,108	31,833	14,035
1984	11											

Table A-1 Main Population Vital Statistics and Population (Cont'd) [Rates]

Year	Live births rate per 1,000 population	Mortality rate per 1,000 population	Natural increase rate per 1,000 population	Infant mortality rate per 1,000 births	Neonatal mortality rate per 1,000 births	Perinatal mortality rate per 1,000 births	Maternal mortality rate		Stillbirth rate per 1,000 births			Fertility rate	(Reference) perinatal mortality rate per 1,000 births
							per 100,000 births	per 100,000 births	Stillbirth rate	Natural stillbirth rate	Induced stillbirth rate		
1899	32.0	21.5	10.5	153.8	77.9	—	409.8	449.9	89.1	—	—	—	—
1900	32.4	20.8	11.6	155.0	79.0	—	397.8	436.5	88.5	—	—	—	—
1901	33.9	20.9	13.0	149.9	77.1	—	402.6	444.3	93.8	—	—	—	—
1902	33.6	21.3	12.3	154.0	77.2	—	392.9	433.9	94.5	—	—	—	—
1903	32.7	20.4	12.3	152.4	75.8	—	369.3	407.5	93.6	—	—	—	—
1904	31.2	20.7	10.5	151.9	73.9	—	361.7	398.6	92.6	—	—	—	—
1905	31.2	21.6	9.6	151.7	71.2	—	387.8	425.7	89.1	—	—	—	—
1906	29.6	20.3	9.3	153.6	75.5	—	403.9	447.3	97.0	—	—	—	—
1907	34.0	21.4	12.6	151.3	73.5	—	373.8	410.5	89.6	—	—	—	—
1908	34.7	21.5	13.2	158.0	74.5	—	388.4	426.4	89.1	—	—	—	—
1909	34.9	22.5	12.4	167.3	76.5	—	344.9	377.8	87.1	—	—	—	—
1910	34.8	21.6	13.2	161.2	74.1	—	333.0	363.6	84.2	—	—	—	—
1911	35.1	20.9	14.1	158.4	72.8	—	325.4	354.3	81.6	—	—	—	—
1912	34.4	20.5	13.9	154.2	71.3	—	306.1	332.1	78.3	—	—	—	—
1913	34.3	20.0	14.2	152.1	70.7	—	309.7	335.7	77.6	—	—	—	—
1914	34.8	21.2	13.6	158.5	69.5	—	328.4	354.9	74.6	—	—	—	—
1915	34.1	20.7	13.4	160.4	69.7	—	332.5	358.6	72.8	—	—	—	—
1916	33.7	22.2	11.5	170.3	73.1	—	325.8	351.1	72.0	—	—	—	—
1917	33.5	22.2	11.3	173.2	77.1	—	326.1	351.4	71.9	—	—	—	—
1918	32.7	27.3	5.5	188.6	81.3	—	352.1	380.1	73.7	—	—	—	—
1919	32.3	23.3	9.0	170.5	72.6	—	309.2	332.3	69.5	—	—	—	—
1920	36.2	25.4	10.8	165.7	69.0	—	329.9	353.4	66.4	—	—	—	—
1921	35.1	22.7	12.4	168.3	68.5	—	337.3	360.7	65.0	—	—	—	—
1922	34.3	22.4	11.9	166.4	67.5	—	312.4	333.4	62.9	—	—	—	—
1923	35.2	22.9	12.2	163.4	66.3	—	316.9	337.6	61.5	—	—	—	—
1924	33.9	21.3	12.6	156.2	63.2	—	295.3	313.9	59.2	—	—	—	—
1925	34.9	20.3	14.7	142.4	58.1	—	285.4	302.4	56.3	—	—	—	—
1926	34.6	19.1	15.5	137.5	56.9	—	256.7	271.9	55.7	—	—	—	—
1927	33.4	19.7	13.7	141.7	56.4	—	264.7	279.8	53.7	—	—	—	—
1928	34.1	19.8	14.4	137.6	54.2	—	265.8	280.8	53.3	—	—	—	—
1929	32.7	19.9	12.9	142.1	55.4	—	267.4	282.5	53.3	—	—	—	—
1930	32.4	18.2	14.2	124.1	49.9	—	257.9	272.5	53.4	—	—	—	—
1931	32.1	19.0	13.2	131.5	51.7	—	255.4	269.5	52.5	—	—	—	—
1932	32.9	17.7	15.2	117.5	47.9	—	240.2	253.4	51.9	—	—	—	—
1933	31.5	17.7	13.8	121.3	48.5	—	257.8	271.7	51.1	—	—	—	—
1934	29.9	18.1	11.8	124.8	50.6	—	264.7	279.3	52.4	—	—	—	—
1935	31.6	16.8	14.9	106.7	44.7	—	247.1	260.1	50.1	—	—	—	—
1936	30.0	17.5	12.4	116.7	48.1	—	243.3	256.1	50.2	—	—	—	—
1937	30.9	17.1	13.8	105.8	43.8	—	237.5	249.6	48.6	—	—	—	—
1938	27.2	17.7	9.4	114.4	46.2	—	240.5	252.9	49.1	—	—	—	—
1939	26.6	17.8	8.9	106.2	44.3	—	240.9	253.4	49.2	—	—	—	—
1940	29.4	16.5	12.9	90.0	38.7	—	228.6	239.6	46.0	—	—	—	—
1941	31.8	16.0	15.7	84.1	34.2	—	207.0	216.4	43.4	—	—	—	—
1942	30.9	16.1	14.7	85.5	34.1	—	196.9	205.3	41.0	—	—	—	—
1943	30.9	16.7	14.3	86.6	33.8	—	193.6	201.6	39.6	—	—	—	—
1944	—	—	—	—	—	—	—	—	—	—	—	—	—
1945	—	—	—	—	—	—	—	—	—	—	—	—	—
1946	—	—	—	—	—	—	—	—	—	—	—	—	—
1947	34.3	14.6	19.7	76.7	31.4	—	160.1	167.5	44.2	—	—	4.54	—
1948	33.5	11.9	21.6	61.7	27.5	—	157.0	165.5	50.9	36.9	10.9	4.40	—
1949	33.0	11.6	21.4	62.5	26.9	—	159.2	170.6	66.7	39.1	25.9	4.32	—
1950	28.1	10.9	17.2	60.1	27.4	—	161.2	176.1	84.9	41.7	43.2	3.65	46.6
1951	25.3	9.9	15.4	57.5	27.5	—	156.7	172.7	92.2	43.0	49.3	3.26	—
1952	23.4	8.9	14.4	49.4	25.4	—	154.7	170.4	92.3	42.8	49.5	2.98	—
1953	21.5	8.9	12.6	48.9	25.5	—	162.6	179.4	93.8	43.5	50.2	2.69	—
1954	20.0	8.2	11.9	44.6	24.1	—	165.6	183.1	95.6	44.6	51.1	2.48	—
1955	19.4	7.8	11.6	39.8	22.3	—	161.7	178.8	95.8	44.5	51.3	2.37	43.9
1956	18.4	8.0	10.4	40.6	23.0	—	153.9	170.4	97.1	46.9	50.1	2.22	—
1957	17.2	8.3	8.9	40.0	21.6	—	153.6	170.9	101.2	49.9	51.3	2.04	—
1958	18.0	7.4	10.5	34.5	19.5	—	139.2	154.8	100.7	50.2	50.5	2.11	—
1959	17.5	7.4	10.1	33.7	18.6	—	131.7	146.4	100.6	51.3	49.3	2.04	—
1960	17.2	7.6	9.6	30.7	17.0	—	117.5	130.6	100.4	52.3	48.1	2.00	41.4
1961	16.9	7.4	9.5	28.6	16.5	—	108.2	120.4	101.7	54.3	47.4	1.96	40.9
1962	17.0	7.5	9.5	26.4	15.3	—	100.9	112.0	98.8	54.2	44.6	1.98	38.7
1963	17.3	7.0	10.3	23.2	13.8	—	92.7	102.5	95.6	53.3	42.4	2.00	36.2
1964	17.7	6.9	10.7	20.4	12.4	—	90.1	99.0	89.2	51.7	37.5	2.05	33.1
1965	18.6	7.1	11.4	18.5	11.7	—	80.4	87.6	81.4	47.6	33.8	2.14	30.1
1966	13.7	6.8	7.0	19.3	12.0	—	83.9	93.0	98.2	55.2	43.1	1.58	31.3
1967	19.4	6.8	12.7	14.9	9.9	—	65.5	70.5	71.6	43.6	28.0	2.23	26.3
1968	18.6	6.8	11.8	15.3	9.8	—	63.3	68.1	71.1	43.4	27.7	2.13	24.5
1969	18.5	6.8	11.7	14.2	9.1	—	53.9	57.9	68.6	42.3	26.3	2.13	23.0
1970	18.8	6.9	11.8	13.1	8.7	—	48.7	52.1	65.3	40.6	24.7	2.13	21.7
1971	19.2	6.6	12.6	12.4	8.2	—	42.5	45.2	61.4	39.3	22.1	2.16	20.4
1972	19.3	6.5	12.8	11.7	7.8	—	38.2	40.6	57.8	37.8	20.1	2.14	19.0
1973	19.4	6.6	12.8	11.3	7.4	—	36.3	38.3	52.6	35.6	17.0	2.14	18.0
1974	18.6	6.5	12.1	10.8	7.1	—	32.7	34.5	51.3	34.9	16.4	2.05	16.9
1975	17.1	6.3	10.8	10.0	6.8	—	27.3	28.7	50.8	33.8	17.1	1.91	16.0
1976	16.3	6.3	10.0	9.3	6.4	—	24.5	25.9	52.7	33.1	19.6	1.85	14.8
1977	15.5	6.1	9.4	8.9	6.1	—	21.9	23.1	51.5	32.6	18.9	1.80	14.1
1978	14.9	6.1	8.8	8.4	5.6	—	21.0	22.1	48.7	31.1	17.6	1.79	13.0
1979	14.2	6.0	8.3	7.9	5.2	21.6	21.8	22.9	47.7	29.6	18.1	1.77	12.5
1980	13.6	6.2	7.3	7.5	4.9	20.2	19.5	20.5	46.8	28.8	18.0	1.75	11.7
1981	13.0	6.1	6.9	7.1	4.7	19.5	18.3	19.2	49.2	28.8	20.5	1.74	10.8
1982	12.8	6.0	6.8	6.6	4.2	18.3	17.5	18.4	49.0	27.7	21.3	1.77	10.1
1983	12.7	6.2	6.5	6.2	3.9	16.9	14.8	15.5	45.5	25.4	20.1	1.80	9.3
1984	12.5	6.2	6.3	6.0	3.7	16.6	14.6	15.3	46.3	24.3	22.0	1.81	8.7
1985	11.9	6.3	5.6	5.5	3.4	15.4	15.1	15.8	46.0	22.1	23.9	1.76	8.0
1986	11.4	6.2	5.2	5.2	3.1	14.6	12.9	13.5	45.3	21.4	23.9	1.72	7.3
1987	11.1	6.2	4.9	5.0	2.9	13.7	11.5	12.0	45.3	21.2	24.0	1.69	6.9
1988	10.8	6.5	4.3	4.8	2.7	12.7	9.2	9.6	43.4	19.5	23.9	1.66	6.5
1989	10.2	6.4	3.7	4.6	2.6	12.1	10.4	10.8	42.4	18.9	23.5	1.57	6.0
1990	10.0	6.7	3.3	4.6	2.6	11.1	8.2	8.6	42.3	18.3	23.9	1.54	5.7
1991	9.9	6.7	3.2	4.4	2.4	8.5	8.6	9.0	39.7	17.5	22.1	1.53	5.3
1992	9.8	6.9	2.9	4.5	2.4	8.1	8.8	9.2	38.9	17.2	21.6	1.50	5.2
1993	9.6	7.1	2.5	4.3	2.3	7.7	7.4	7.7	36.6	16.4	20.2	1.46	5.0
1994	10.0	7.1	2.9	4.2	2.3	7.5	5.9	6.1	33.5	15.4	18.1	1.50	5.0
1995	9.6	7.4	2.1	4.3	2.2	7	6.9	7.2	32.1	14.9	17.2	1.42	4.7
1996	9.7	7.2	2.5	3.8	2.0	6.7	5.8	6.0	31.7	14.7	17.0	1.43	4.4
1997	9.5	7.3	2.2	3.7									

Figure A-2 Average Life Expectancy at Birth



The average life expectancy at birth (average expected lifespan at age of 0) failed to improve in the early 1900s, but began to rise from 1925 onwards, and then rose sharply post-war (from 1945 onwards). The slope subsequently leveled off somewhat, but even now life expectancy at birth

continues to increase.

According to the WHO “2003 World Health Report,” the latest life expectancy at birth figure for Japanese is 78.4 for men, and women for 85.3 years, the highest in the world.

Table A-2 Average Life Expectancy at Birth (Mean Life Expectancy at Age of 0)

Year	Male	Female
1891 ~ 1898	42.8	44.3
1899 ~ 1903	43.97	44.85
1909 ~ 1913	44.25	44.73
1921 ~ 1925	42.06	43.20
1926 ~ 1930	44.82	46.54
1935 ~ 1936	46.92	49.63
1947	50.06	53.96
1950 ~ 1952	59.57	62.97
1955	63.60	67.75
1960	65.32	70.19
1965	67.74	72.92
1970	69.31	74.66
1975	71.73	76.89
1980	73.35	78.76
1985	74.78	80.48
1990	75.92	81.90
1995	76.38	82.85
* 1997	77.19	83.82
* 1998	77.16	84.01
* 1999	77.10	83.99
2000	77.72	84.60
* 2001	78.07	84.93

Source: * from “Simplified Life Tables” issued by the Statistics and Information Department, Cabinet Secretariat, Ministry of Health, Labour and Welfare, other figures from “Complete Life Tables” issued by the Statistics Bureau of the Prime Minister’s Agency.

Table A-3 Population by Age-group (3 divisions) and Indices of Age Structure

Year	Population (1,000s)			Population Ratio (%)			Average Age (yr)	Median age (yr)	
	Total	0-14 yr	15-64 yr	Over 65 yr	0-14 yr	15-64 yr			Over 65 yr
1884 ¹⁾	37,452	11,843	23,458	2,142	31.63	62.65	5.72	28.9	21.0
1888	39,607	13,360	24,069	2,175	33.73	60.77	5.49	28.2	24.5
1898	43,764	14,367	26,989	2,405	32.83	61.67	5.49	28.0	23.9
1908	49,589	16,969	30,014	2,604	34.22	60.53	5.25	27.7	24.1
1920	55,963	20,416	32,605	2,941	36.48	58.26	5.26	26.7	22.2
1930	64,450	23,579	37,807	3,064	36.59	58.66	4.75	26.3	21.8
1940 ²⁾	71,933	26,383	42,096	3,454	36.68	58.52	4.80	26.6	21.9
1947 ³⁾	78,101	27,573	46,783	3,745	35.30	59.90	4.79	26.6	22.1
1950	83,200	29,428	49,658	4,109	35.37	59.69	4.94	26.6	22.3
1955	89,276	29,798	54,729	4,747	33.38	61.30	5.32	27.6	23.7
1960	93,419	28,067	60,002	5,350	30.04	64.23	5.73	29.1	25.6
1965	98,275	25,166	66,928	6,181	25.61	68.10	6.29	30.4	27.5
1970	103,720	24,823	71,566	7,331	23.93	69.00	7.07	31.5	29.1
1975	111,940	27,221	75,807	8,865	24.33	67.75	7.92	32.5	30.6
1980	117,060	27,507	78,835	10,647	23.51	67.39	9.10	33.9	32.5
1985	121,049	26,033	82,506	12,468	21.51	68.18	10.30	35.7	35.2
1990	123,611	22,486	85,904	14,895	18.19	69.50	12.05	37.6	37.7
1995	125,570	20,014	87,165	18,261	15.94	69.42	14.54	39.6	39.7
2000	126,926	18,472	86,220	22,005	14.55	67.93	17.34	41.4	41.5

N.B.: Figures from 1947~1970 do not include Okinawa Prefecture.

Totals include those of unknown age.

- 1) Includes Imperial Household members.
 - 2) Corrected population, subtracting estimated armed forces and ancillary personnel for the appropriate age groups from the Population Census figures.
 - 3) Corrected population, adding to the national census figures estimated numbers of people from flood-affected regions who were not surveyed, to the appropriate age groups.
- The median age is the age of the person in the middle when the entire population is placed in order of age.
- Average ages and median ages are calculated from the populations in each age group in years.

Source: Populations as of October 1 according to the "Population Census Report" and "Table Long-term Japanese Statistics" issued by the Statistics Bureau, Ministry of Internal Affairs and Communications.

Table A-4 Number of Deaths and Mortality Rate by Major Causes of Death (per 100,000 population)

	Total		Tuberculosis		Malignancies		Diabetes		Hypertensive disease)		Heart disease (Excluding hypertension)		Cerebrovascular disease	
	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate
1899	932,087	2,147.5	67,599	155.7	19,382	44.7	—	—	—	—	21,113	48.6	73,989	170.5
1920	1,422,096	2,541.1	125,165	223.7	40,648	72.6	1,725	3.1	—	—	35,540	63.5	88,186	157.6
1925	1,210,706	2,026.7	115,956	194.1	42,177	70.6	1,979	3.3	—	—	39,895	66.8	96,293	161.2
1930	1,170,867	1,816.7	119,635	185.6	45,488	70.6	2,247	3.5	—	—	41,138	63.8	104,942	162.8
1933	1,193,987	1,770.7	126,703	187.9	47,705	70.7	2,589	3.8	—	—	40,111	59.5	110,719	164.2
1934	1,234,684	1,807.5	131,525	192.5	48,822	71.5	2,718	4.0	—	—	42,519	62.2	114,447	167.5
1935	1,161,936	1,677.8	132,151	190.8	50,080	72.3	2,527	3.6	—	—	39,902	57.6	114,554	165.4
1936	1,230,278	1,754.7	145,160	207.0	50,203	71.6	2,629	3.7	—	—	42,910	61.2	118,152	168.5
1937	1,207,899	1,710.2	144,620	204.8	51,578	73.0	2,812	4.0	—	—	42,822	60.6	118,761	168.1
1938	1,259,805	1,774.1	148,827	209.6	51,358	72.3	3,043	4.3	—	—	47,461	66.8	126,861	178.6
1939	1,268,760	1,777.5	154,371	216.3	52,059	72.9	2,795	3.9	—	—	47,442	66.5	130,826	183.3
1940	1,186,595	1,649.6	153,154	212.9	51,879	72.1	2,762	3.8	—	—	45,542	63.3	127,847	177.7
1941	1,149,559	1,603.7	154,344	215.3	52,949	73.9	2,657	3.7	—	—	42,543	59.4	125,124	174.6
1942	1,166,630	1,611.7	161,484	223.1	53,897	74.5	2,619	3.6	—	—	43,487	60.1	125,349	173.2
1943	1,219,073	1,672.6	171,473	235.3	53,580	73.5	2,477	3.4	—	—	45,428	62.3	120,985	166.0
1947	1,138,238	1,457.4	146,241	187.2	53,886	69.0	1,827	2.3	—	—	48,575	62.2	101,095	129.4
1948	950,610	1,188.2	143,909	179.9	56,633	70.8	1,789	2.2	—	—	49,046	61.3	94,329	117.9
1949	945,444	1,156.2	138,113	168.8	59,889	73.2	1,876	2.3	—	—	52,763	64.5	100,278	122.6
1950	904,876	1,087.6	121,769	146.4	64,428	77.4	2,034	2.4	9,935	11.9	53,377	64.2	105,728	127.1
1951	838,998	992.0	93,307	110.3	66,354	78.5	2,058	2.4	8,865	10.5	53,750	63.6	105,858	125.2
1952	765,068	891.1	70,588	82.2	69,488	80.9	1,993	2.3	8,950	10.4	52,603	61.3	110,359	128.5
1953	772,547	887.6	57,849	66.5	71,578	82.2	2,119	2.4	9,343	10.7	56,477	64.9	116,351	133.7
1954	721,491	817.2	55,124	62.4	75,309	85.3	2,040	2.3	9,100	10.3	53,128	60.2	116,925	132.4
1955	693,523	776.8	46,735	52.3	77,721	87.1	2,191	2.5	9,073	10.2	54,351	60.9	121,504	136.1
1956	724,460	802.6	43,874	48.6	81,879	90.7	2,556	2.8	10,371	11.5	59,543	66.0	133,931	148.4
1957	752,445	826.1	42,718	46.9	83,155	91.3	2,712	3.0	11,158	12.2	66,571	73.1	138,181	151.7
1958	684,189	743.6	36,274	39.4	87,895	95.5	2,664	2.9	12,565	13.7	59,603	64.8	136,767	148.6
1959	689,959	742.1	32,992	35.5	91,286	98.2	2,794	3.0	13,503	14.5	62,954	67.7	142,858	153.7
1960	706,599	756.4	31,959	34.2	93,773	100.4	3,195	3.4	15,115	16.2	68,400	73.2	150,109	160.7
1961	695,644	737.8	27,916	29.6	96,442	102.3	3,453	3.7	16,083	17.1	68,017	72.1	155,966	165.4
1962	710,265	746.2	27,852	29.3	98,224	103.2	3,823	4.0	17,547	18.4	72,493	76.2	161,228	169.4
1963	670,770	697.6	23,302	24.2	101,426	105.5	3,980	4.1	17,469	18.2	67,672	70.4	164,818	171.4
1964	673,067	692.6	22,929	23.6	104,324	107.3	4,610	4.7	18,207	18.7	68,328	70.3	166,901	171.7
1965	700,438	712.7	22,366	22.8	106,536	108.4	5,115	5.2	18,987	19.3	75,672	77.0	172,773	175.8
1966	670,342	676.7	20,064	20.3	109,805	110.9	5,750	5.8	18,405	18.6	71,188	71.9	172,186	173.8
1967	675,006	677.5	17,708	17.8	112,593	113.0	6,132	6.2	18,211	18.3	75,424	75.7	172,464	173.1
1968	686,555	681.1	16,922	16.8	115,462	114.6	6,403	6.4	18,046	17.9	80,866	80.2	174,905	173.5
1969	693,787	680.0	16,392	16.1	118,559	116.2	7,079	6.9	17,374	17.0	83,357	81.7	177,894	174.4
1970	712,962	691.4	15,899	15.4	119,977	116.3	7,642	7.4	18,303	17.7	89,411	86.7	181,315	175.8
1971	684,521	656.0	13,608	13.0	122,850	117.7	7,647	7.3	17,386	16.7	85,529	82.0	176,952	169.6
1972	683,751	646.6	12,565	11.9	127,299	120.4	7,875	7.4	17,421	16.5	85,885	81.2	176,228	166.7
1973	709,416	656.4	11,965	11.1	130,964	121.2	8,344	7.7	18,891	17.5	94,324	87.3	180,332	166.9
1974	710,510	649.4	11,418	10.4	133,751	122.2	8,954	8.2	20,117	18.4	98,251	89.8	178,365	163.0
1975	702,275	631.2	10,567	9.5	136,383	122.6	9,032	8.1	19,831	17.8	99,226	89.2	174,367	156.7
1976	703,270	625.6	9,578	8.5	140,893	125.3	9,183	8.2	19,829	17.6	103,638	92.2	173,745	154.5
1977	690,074	608.0	8,803	7.8	145,772	128.4	9,509	8.4	19,333	17.0	103,564	91.2	170,029	149.8
1978	695,821	607.6	8,261	7.2	150,336	131.3	9,685	8.5	18,779	16.4	106,786	93.3	167,452	146.2
1979	689,664	597.3	6,738	5.8	156,661	135.7	8,044	7.0	16,143	14.0	111,938	96.9	158,974	137.7
1980	722,801	621.4	6,439	5.5	161,764	139.1	8,504	7.3	15,911	13.7	123,505	106.2	162,317	139.5
1981	720,262	614.5	5,698	4.9	166,399	142.0	8,418	7.2	15,289	13.0	126,012	107.5	157,351	134.3
1982	711,883	603.2	5,343	4.5	170,130	144.2	8,687	7.4	13,771	11.7	125,905	106.7	147,537	125.0
1983	740,038	623.0	5,329	4.5	176,206	148.3	8,892	7.5	13,482	11.3	132,244	111.3	145,880	122.8
1984	740,247	619.3	4,950	4.1	182,280	152.5	9,470	7.9	13,073	10.9	136,162	113.9	140,093	117.2
1985	752,283	625.5	4,692	3.9	187,714	156.1	9,244	7.7	12,700	10.6	141,097	117.3	134,994	112.2
1986	750,620	620.6	4,170	3.4	191,654	158.5	9,144	7.6	11,689	9.7	142,581	117.9	129,289	106.9
1987	751,172	618.1	4,022	3.3	199,563	164.2	9,134	7.5	10,734	8.8	143,909	118.4	123,626	101.7
1988	793,014	649.9	3,872	3.2	205,470	168.4	9,647	7.9	10,258	8.4	157,920	129.4	128,695	105.5
1989	788,594	644.0	3,527	2.9	212,625	173.6	9,211	7.5	9,271	7.6	156,831	128.1	120,652	98.5
1990	820,305	668.4	3,664	3.0	217,413	177.2	9,470	7.7	9,246	7.5	165,478	134.8	121,944	99.4
1991	829,797	674.1	3,325	2.7	223,727	181.7	9,634	7.8	9,083	7.4	168,878	137.2	118,448	96.2
1992	856,643	693.8	3,347	2.7	231,917	187.8	9,823	8.0	8,688	7.0	175,546	142.2	118,058	95.6
1993	878,532	709.7	3,249	2.6	235,707	190.4	10,239	8.3	8,360	6.8	180,297	145.6	118,794	96.0
1994	875,933	706.0	3,094	2.5	243,670	196.4	10,872	8.8	7,938	6.4	159,579	128.6	120,239	96.9
1995	922,139	741.9	3,178	2.6	263,022	211.6	14,225	11.4	8,222	6.6	139,206	112.0	146,552	117.9
1996	896,211	718.6	2,858	2.3	271,183	217.5	12,838	10.3	7,245	5.8	138,299	110.8	140,366	112.6
1997	913,402	730.9	2,742	2.2	275,413	220.4	12,370	9.9	6,884	5.5	140,174	112.2	138,697	111.0
1998	936,484	747.7	2,795	2.2	283,921	226.7	12,573	10.0	6,716	5.4	143,120	114.3	137,819	110.0
1999	982,031	782.9	2,935	2.3	290,556	231.6	12,814	10.2	6,650	5.3	151,079	120.4	138,989	110.8
2000	961,653	765.6	2,656	2.1	295,484	235.2	12,303	9.8	6,063	4.8	146,741	116.8	132,529	105.5
2001	970,331	770.7	2,491	2.0	300,658	238.8	12,147	9.6	5,857	4.7	148,292	117.8	131,856	104.7

N.B.: 1) Due to revisions of the classifications of cause of death, direct comparisons cannot be made between years.
 2) The causes of death listed at the top of the table are taken from the 10th classification of causes of death.
 3) Figures from 1947~1970 do not include Okinawa Prefecture. Karafuto (Sakhalin) is included for figures on the year of 1943. Figures from 1944~46 have been omitted due to incomplete records owing to the exigencies of war.

Source: "Population Vital Statistics," issued by the Statistics and Information Department, Cabinet Secretariat, Ministry of Health, Labour and Welfare.

Table A-4 Number of Deaths and Mortality Rate by Major Causes of Death (per 100,000 population) (Cont'd)

	Pneumonia		Liver disease		Renal failure		Old age		Accident		Suicide	
	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate	No. of deaths	Mortality rate
1899	43,313	99.8	—	—	—	—	55,189	127.2	21,767	50.1	5,932	13.7
1920	175,674	313.9	11,279	20.2	—	—	73,468	131.3	26,198	46.8	10,630	19.0
1925	129,129	216.2	9,667	16.2	—	—	70,065	117.3	24,982	41.8	12,249	20.5
1930	101,046	156.8	10,469	16.2	—	—	76,591	118.8	26,295	40.8	13,942	21.6
1933	106,247	157.6	8,375	12.4	—	—	82,932	123.0	30,220	44.8	14,805	22.0
1934	124,117	181.7	8,270	12.1	—	—	87,045	127.4	32,029	46.9	14,554	21.3
1935	105,078	151.7	8,074	11.7	—	—	78,972	114.0	29,023	41.9	14,172	20.5
1936	112,204	160.0	8,446	12.0	—	—	91,672	130.7	30,193	43.1	15,423	22.0
1937	108,256	153.3	8,680	12.3	—	—	84,478	119.6	30,205	42.8	14,295	20.2
1938	118,153	166.4	8,680	12.2	—	—	98,451	138.6	31,700	44.6	12,223	17.2
1939	131,542	184.3	8,650	12.1	—	—	95,173	133.3	29,328	41.1	10,785	15.1
1940	111,077	154.4	8,824	12.3	—	—	89,540	124.5	28,408	39.5	9,877	13.7
1941	104,073	145.2	8,679	12.1	—	—	89,673	125.1	28,808	40.2	9,713	13.6
1942	106,022	146.5	8,970	12.4	—	—	95,998	132.6	31,134	43.0	9,393	13.0
1943	116,494	159.8	8,981	12.3	—	—	99,162	136.1	33,519	46.0	8,784	12.1
1947	101,601	130.1	8,762	11.2	—	—	78,342	100.3	38,533	49.3	12,262	15.7
1948	52,979	66.2	9,032	11.3	—	—	63,639	79.5	38,975	48.7	12,753	15.9
1949	56,213	68.7	9,576	11.7	—	—	65,574	80.2	34,277	41.9	14,201	17.4
1950	54,169	65.1	8,630	10.4	—	—	58,412	70.2	32,850	39.5	16,311	19.6
1951	50,612	59.8	8,929	10.6	—	—	59,796	70.7	31,968	37.8	15,415	18.2
1952	42,880	49.9	10,048	11.7	—	—	59,514	69.3	31,215	36.4	15,776	18.4
1953	46,703	53.7	10,960	12.6	—	—	67,514	77.6	34,236	39.3	17,731	20.4
1954	37,719	42.7	11,657	13.2	—	—	61,334	69.5	34,812	39.4	20,635	23.4
1955	34,309	38.4	11,827	13.2	—	—	59,932	67.1	33,265	37.3	22,477	25.2
1956	34,870	38.6	12,599	14.0	—	—	68,414	75.8	33,258	36.8	22,107	24.5
1957	43,754	48.0	12,674	13.9	—	—	73,283	80.5	34,528	37.9	22,136	24.3
1958	35,252	38.3	12,463	13.5	—	—	51,046	55.5	35,785	38.9	23,641	25.7
1959	34,229	36.8	12,836	13.8	—	—	52,687	56.7	41,662	44.8	21,090	22.7
1960	37,534	40.2	13,389	14.3	—	—	54,139	58.0	38,964	41.7	20,143	21.6
1961	31,839	33.8	13,633	14.5	—	—	54,880	58.2	41,614	44.1	18,446	19.6
1962	34,839	36.6	13,549	14.2	—	—	54,738	57.5	38,393	40.3	16,724	17.6
1963	26,109	27.2	13,944	14.5	—	—	48,466	50.4	39,698	41.3	15,490	16.1
1964	25,547	26.3	13,945	14.3	—	—	46,995	48.4	40,437	41.6	14,707	15.1
1965	29,868	30.4	13,663	13.9	—	—	49,092	50.0	40,188	40.9	14,444	14.7
1966	22,654	22.9	13,853	14.0	—	—	44,209	44.6	42,574	43.0	15,050	15.2
1967	23,451	23.5	14,395	14.4	—	—	43,129	43.3	41,769	41.9	14,121	14.2
1968	25,188	25.0	15,470	15.3	—	—	39,750	39.4	40,564	40.2	14,601	14.5
1969	25,408	24.9	16,348	16.0	—	—	37,817	37.1	43,011	42.2	14,844	14.5
1970	27,929	27.1	17,097	16.6	—	—	39,277	38.1	43,802	42.5	15,728	15.3
1971	23,102	22.1	16,815	16.1	—	—	35,457	34.0	42,433	40.7	16,239	15.6
1972	23,204	21.9	16,911	16.0	—	—	32,520	30.8	42,431	40.1	18,015	17.0
1973	26,996	25.0	17,573	16.3	—	—	33,415	30.9	40,244	37.2	18,859	17.4
1974	28,557	26.1	18,039	16.5	—	—	32,486	29.7	36,085	33.0	19,105	17.5
1975	30,441	27.4	18,101	16.3	—	—	29,916	26.9	33,710	30.3	19,975	18.0
1976	29,913	26.6	18,280	16.3	—	—	29,659	26.4	31,489	28.0	19,786	17.6
1977	26,440	23.3	18,173	16.0	—	—	28,381	25.0	30,352	26.7	20,269	17.9
1978	28,241	24.7	18,789	16.4	—	—	27,976	24.4	30,017	26.2	20,199	17.6
1979	27,330	23.7	18,754	16.2	6,047	5.2	29,419	25.5	29,227	25.3	20,823	18.0
1980	33,051	28.4	18,978	16.3	7,048	6.1	32,154	27.6	29,217	25.1	20,542	17.7
1981	33,590	28.7	19,101	16.3	7,811	6.7	29,873	25.5	29,089	24.8	20,096	17.1
1982	35,338	29.9	18,958	16.1	8,866	7.5	27,501	23.3	29,197	24.7	20,668	17.5
1983	40,237	33.9	19,324	16.3	9,892	8.3	29,391	24.7	29,668	25.0	24,985	21.0
1984	38,895	32.5	19,433	16.3	10,457	8.7	28,805	24.1	29,344	24.6	24,344	20.4
1985	45,075	37.5	19,803	16.5	11,508	9.6	27,804	23.1	29,597	24.6	23,383	19.4
1986	47,256	39.1	19,532	16.1	12,057	10.0	26,810	22.2	28,610	23.7	25,667	21.2
1987	49,013	40.3	19,286	15.9	12,627	10.4	25,274	20.8	28,255	23.2	23,831	19.6
1988	57,055	46.8	19,781	16.2	14,224	11.7	26,400	21.6	30,212	24.8	22,795	18.7
1989	58,963	48.1	19,719	16.1	14,853	12.1	23,781	19.4	31,049	25.4	21,125	17.3
1990	68,194	55.6	19,700	16.1	15,575	12.7	24,187	19.7	32,122	26.2	20,088	16.4
1991	70,057	56.9	19,817	16.1	15,560	12.6	23,200	18.8	33,155	26.9	19,875	16.1
1992	74,274	60.2	20,162	16.3	16,945	13.7	23,361	18.9	34,677	28.1	20,893	16.9
1993	81,138	65.5	19,923	16.1	17,157	13.9	23,115	18.7	34,717	28.0	20,516	16.6
1994	83,354	67.2	19,372	15.6	17,376	14.0	23,464	18.9	36,115	29.1	20,923	16.9
1995	79,629	64.1	17,018	13.7	16,187	13.0	21,493	17.3	45,323	36.5	21,420	17.2
1996	70,971	56.9	16,517	13.2	16,196	13.0	20,878	16.7	39,184	31.4	22,138	17.8
1997	78,904	63.1	16,599	13.3	16,615	13.3	21,434	17.2	38,886	31.1	23,494	18.8
1998	79,952	63.8	16,133	12.9	16,638	13.3	21,374	17.1	38,925	31.1	31,755	25.4
1999	93,994	74.9	16,585	13.2	17,704	14.1	22,829	18.2	40,079	32.0	31,413	25.0
2000	86,938	69.2	16,079	12.8	17,260	13.7	21,213	16.9	39,484	31.4	30,251	24.1
2001	85,305	67.8	15,848	12.6	17,690	14.0	22,145	17.6	39,496	31.4	29,375	23.3

Table A-5 Number and Rate (per 100,000 population) of Medical and Allied Personnel

Year	Numbers						Rates per 100,000 population					
	Doctors	Dentists	Pharmacists	Public Health Nurses	Midwives	Nurses/Assistant Nurses	Doctors	Dentists	Pharmacists	Public Health Nurses	Midwives	Nurses/Assistant Nurses
1953	89,885	30,086	—	12,339	56,419	112,002	103.3	34.6	—	14.2	64.8	128.7
1954	92,442	30,659	51,132	12,186	55,513	119,428	104.7	34.7	57.9	13.8	62.9	135.3
1955	94,563	31,109	52,418	12,369	55,356	129,860	105.9	34.8	58.7	13.9	62.0	145.5
1956	96,139	31,642	52,779	12,156	53,743	136,715	106.5	35.1	58.5	13.5	59.5	151.5
1957	98,268	31,971	54,853	11,821	51,709	145,090	107.9	35.1	60.2	13.0	56.8	159.3
1958	99,876	32,484	56,518	12,201	52,319	160,352	108.6	35.3	61.4	13.3	56.9	174.3
1959	101,449	32,871	58,389	12,519	52,402	169,998	109.1	35.4	62.8	13.5	56.4	182.9
1960	103,131	33,177	60,257	13,010	52,337	185,592	110.4	35.5	64.5	13.9	56.0	198.7
1961	104,280	33,617	61,626	13,248	51,181	194,614	110.6	35.7	65.4	14.1	54.3	206.4
1962	105,437	34,163	62,645	13,606	45,955	205,087	110.8	35.9	65.8	14.3	48.3	215.5
1963	106,512	34,517	64,915	13,910	46,174	215,528	110.8	35.9	67.5	14.5	48.0	224.1
1964	108,102	35,079	66,600	13,957	43,516	229,797	111.2	36.1	68.5	14.4	44.8	236.5
1965	109,369	35,558	68,674	13,959	43,276	245,211	111.3	36.2	69.9	14.2	44.0	249.5
1966	110,759	36,022	70,810	14,175	43,710	265,230	111.8	36.4	71.5	14.3	44.1	267.8
1967	111,657	36,524	72,101	13,606	31,944	228,569	111.4	36.4	71.9	13.6	31.9	228.0
1968	113,630	36,943	74,366	13,560	29,440	239,037	112.1	36.4	73.3	13.4	29.0	235.7
1969	115,974	37,406	76,087	13,759	28,963	254,628	113.0	36.4	74.1	13.4	28.2	248.1
1970	118,990	37,859	79,393	14,007	28,087	273,572	114.7	36.5	76.5	13.5	27.1	263.8
1971	123,178	39,218	83,246	14,276	27,811	290,733	117.3	37.3	79.3	13.6	26.5	276.9
1972	125,302	40,293	85,140	14,735	27,933	307,056	116.7	37.5	79.3	13.7	26.0	286.1
1973	126,327	40,490	87,651	15,003	26,854	316,803	116.2	37.2	80.6	13.8	24.7	291.4
1974	128,455	41,680	91,402	15,596	26,867	336,612	116.7	37.9	83.1	14.2	24.4	305.9
1975	132,479	43,586	94,362	15,962	26,742	361,604	118.4	38.9	84.3	14.3	23.9	323.0
1976	134,934	44,382	97,474	16,212	26,804	382,459	119.3	39.2	86.2	14.3	23.7	338.2
1977	138,316	45,715	100,897	16,590	26,618	404,156	121.2	40.0	88.4	14.5	23.3	354.0
1978	142,984	48,731	104,693	17,016	26,493	431,911	124.1	42.3	90.9	14.8	23.0	375.0
1979	150,229	50,821	110,774	17,583	26,267	458,362	129.4	43.8	95.4	15.1	22.6	394.7
1980	156,235	53,602	116,056	17,957	25,867	487,169	133.5	45.8	99.1	15.3	22.1	416.2
1981	162,882	56,841	120,444	18,633	25,538	518,097	138.2	48.2	102.2	15.8	21.7	439.5
1982	167,952	58,362	124,390	19,137	25,416	540,971	141.5	49.2	104.8	16.1	21.4	455.8
1984	181,101	63,145	129,700	20,858	24,649	590,177	150.6	52.5	107.9	17.3	20.5	490.9
1986	191,346	66,797	135,990	22,050	24,056	639,936	157.3	54.9	111.8	18.1	19.8	526.0
1986	201,658	70,572	143,429	23,559	23,320	694,999	164.2	57.5	116.8	19.2	19.0	566.0
1990	211,797	74,028	150,627	25,303	22,918	745,301	171.3	59.9	121.9	20.5	18.5	602.9
1992	219,704	77,416	162,021	26,909	22,690	795,810	176.5	62.2	130.2	21.6	18.2	639.5
1994	230,519	81,055	176,871	29,008	23,048	862,013	184.4	64.8	141.5	23.2	18.4	689.4
1996	240,908	85,518	194,300	31,581	23,615	928,896	191.4	67.9	154.4	25.1	18.8	738.0
1998	248,611	88,061	205,953	34,468	24,202	985,821	196.6	69.6	162.8	27.3	19.1	779.4
2000	255,792	90,857	217,477	36,781	24,511	1,042,468	201.5	71.6	171.3	29.0	19.3	821.4

- N.B.: 1) Figures for doctors, dentists, and pharmacists are the number of registered with their professional bodies. Figures for public health nurses, nurses and assistant nurses are the number employed in that profession.
- 2) Figures for public health nurses, nurses and assistant nurses for 1953~66 are derived from the list of employed nurses kept in accordance with Paragraph 34 of the Law concerning Public Health Nurses, Nurse Midwives and Nurses (since repealed). Figures from after 1967 are derived from the numbers registered in accordance with Paragraph 33 of the Law concerning Public Health Nurses, Nurse Midwives and Nurses (duty of registration).

Source: Ministry of Health, Labour and Welfare "Survey of Physicians, Dentists and Pharmacists" (Surveys conducted biennially since 1982) and "Statistical Report on Public Health Administration" (Surveys conducted biennially since 1982).

Table A-6 Number and Rate (per 100,000 population) of Medical Institutions

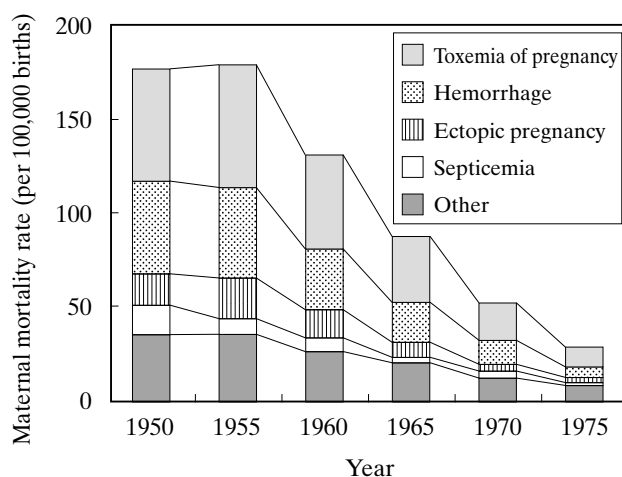
Year	No. institutions							Rate per 100,000 population		
	Hospitals					General medical clinic	Dental clinics	Hospital	General medical clinics	Dental clinics
	Total	Psychiatric	Communicable disease	TB	General					
1955	5,119	260	73	676	4,110	51,349	24,733	5.7	57.5	27.7
1960	6,094	506	58	595	4,935	59,008	27,020	6.5	63.2	28.9
1965	7,047	725	46	340	5,936	64,524	28,602	7.2	65.7	29.1
1970	7,974	896	35	160	6,883	68,997	29,911	7.7	66.5	28.8
1975	8,294	929	27	87	7,251	73,114	32,565	7.4	65.3	29.1
1980	9,055	977	20	39	8,019	77,611	38,834	7.7	66.3	33.2
1981	9,224	988	19	34	8,183	77,909	40,116	7.8	66.1	34.0
1982	9,403	997	17	33	8,356	78,554	41,616	7.9	66.2	35.1
1983	9,515	1,004	15	32	8,464	78,911	43,115	8.0	66.1	36.1
1984	9,574	1,015	12	31	8,516	78,332	43,926	8.0	65.1	36.5
1985	9,608	1,026	12	27	8,543	78,927	45,540	7.9	65.2	37.6
1986	9,699	1,035	13	22	8,629	79,369	47,174	8.0	65.2	38.8
1987	9,841	1,044	13	19	8,765	79,134	48,300	8.0	64.7	39.5
1988	10,034	1,048	12	18	8,956	79,752	49,756	8.2	65.0	40.5
1989	10,081	1,047	11	16	9,007	80,572	51,196	8.2	65.4	41.5
1990	10,096	1,049	10	15	9,022	80,852	52,216	8.2	65.4	42.2
1991	10,066	1,046	10	13	8,997	82,118	53,633	8.1	66.2	43.2
1992	9,963	1,052	7	11	8,893	83,394	55,002	8.0	67.0	44.2
1993	9,844	1,059	7	11	8,767	84,128	55,906	7.9	67.4	44.8
1994	9,731	1,060	6	9	8,656	85,588	57,213	7.8	68.5	45.8
1995	9,606	1,059	5	8	8,534	87,069	58,407	7.7	69.3	46.5
1996	9,490	1,057	5	7	8,421	87,909	59,357	7.5	69.8	47.2
1997	9,413	1,055	5	6	8,347	89,292	60,579	7.5	70.8	48.0
1998	9,333	1,057	5	5	8,266	90,556	61,651	7.4	71.6	48.7
1999	9,286	1,060	•	4	8,222	91,500	62,484	7.3	72.2	49.3
2000	9,266	1,058	•	3	8,205	92,824	63,361	7.3	73.1	49.9
2001	9,239	1,065	•	3	8,171	94,019	64,297	7.3	73.9	50.5

N.B.: 1) As of December 31st until 1983, from 1984 as of October 1st.
 2) "Communicable Disease Hospitals" were abolished in April 1999.

Source: "Survey of Medical Institutions" issued by Ministry of Health, Labour and Welfare.

2. Maternal and Child Health, Family Planning

Figure A-3 Maternal Mortality Rate by Cause of Death (1950~1975)



Maternal mortality rates for each cause of death declined over the period 1950 to 1955, with the exception of toxemia of pregnancy and ectopic

pregnancy that rose slightly. (After 1976, two major revisions of the classification of cause of death have been made, making direct comparisons difficult.)

Table A-7 Maternal Deaths and Maternal Mortality Rate by Cause of Death

	Maternal mortality rate						Maternal mortality rate (per 100,000 births)						
	1950	1955	1960	1965	1970	1975		1950	1955	1960	1965	1970	1975
Total	4,117	3,095	2,097	1,597	1,008	546	Total	176.1	178.8	130.6	87.6	52.1	28.7
Ectopic pregnancy	374	373	232	145	75	39	Ectopic pregnancy	16.0	21.6	14.4	8.0	3.9	2.1
Toxemia of pregnancy	1,396	1,124	809	628	378	196	Toxemia of pregnancy	59.7	64.9	50.4	34.4	19.5	10.3
Hemorrhage	1,147	831	507	387	241	110	Hemorrhage	49.1	48.0	31.6	21.2	12.5	5.8
Septicemia	351	141	108	52	56	34	Septicemia	15.0	8.1	6.7	2.9	2.9	1.8
Others	849	626	441	385	258	167	Others	36.3	36.2	27.5	21.1	13.3	8.8

Source: "Population Vital Statistics" issued by Statistics and Information Department, Cabinet Secretariat, Ministry of Health, Labour and Welfare.

Table A-8 Number of Births by Place of Confinement

Year		1950	1960	1970	1980	1990	1995	2000	2001
*Nationwide	Grand total	2,337,507	1,606,041	1,934,239	1,576,889	1,221,585	1,187,064	1,190,547	1,170,662
	Institution total	106,826	804,557	1,858,738	1,569,643	1,220,138	1,185,359	1,188,400	1,168,396
	Hospital	68,638	386,973	838,078	815,611	681,873	647,430	639,067	620,849
	Medical clinic	25,770	280,292	814,695	694,107	525,744	526,791	537,980	536,055
	Maternity clinic	12,418	137,292	205,965	59,925	12,521	11,138	11,353	11,492
	Home/Others	2,230,681	801,484	75,501	7,246	1,447	1,705	2,147	2,266
Urban areas	Grand total	794,279	1,013,741	1,476,173	1,216,194	960,690	948,442	962,392	947,755
	Institution total	89,490	644,524	1,440,835	1,212,117	959,678	947,100	960,613	945,899
	Hospital	59,865	313,050	666,122	640,957	541,787	522,905	522,451	508,006
	Medical clinic	19,055	222,491	641,585	533,397	408,024	414,884	428,322	427,880
	Maternity clinic	10,570	108,983	133,128	37,763	9,867	9,311	9,840	10,013
	Home/Others	704,789	369,217	35,338	4,077	1,012	1,342	1,779	1,856
Rural areas	Grand total	1,543,228	592,300	458,066	360,695	260,895	238,355	227,945	222,709
	Institution total	17,336	160,033	417,903	357,526	260,460	237,994	227,581	222,302
	Hospital	8,773	73,923	171,956	174,654	140,086	124,353	116,476	112,711
	Medical clinic	6,715	57,801	173,110	160,710	117,720	111,818	109,597	108,112
	Maternity clinic	1,848	28,309	72,837	22,162	2,654	1,823	1,508	1,479
	Home/Others	1,525,892	432,267	40,163	3,169	435	361	364	407

N.B.: Includes overseas residents since 1992.

Source: "Population Vital Statistics" Statistics and Information Department, Cabinet Secretariat, Ministry of Health, Labour and Welfare.

Table A-9 Number of Pregnancy Terminations and Contraception Prevalence Rate

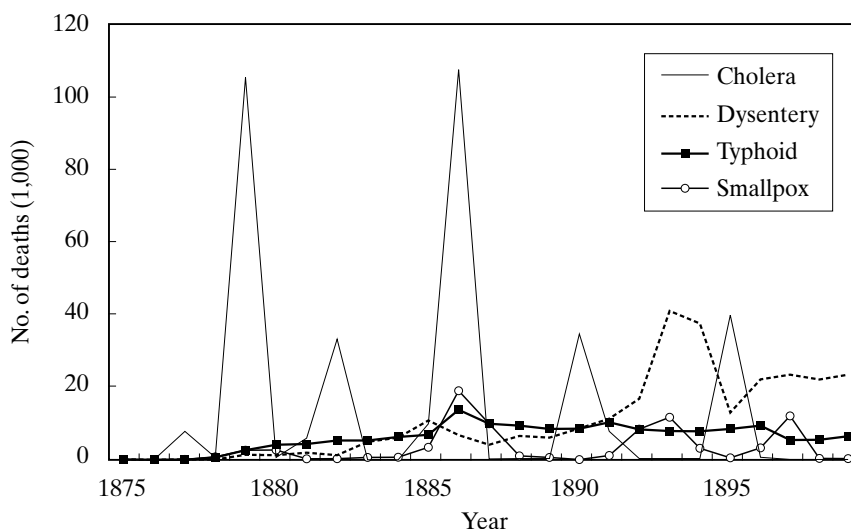
Year	No. of pregnancy terminations		Contraception prevalence rate (%)	Year	No. of pregnancy terminations		Contraception prevalence rate (%)	Year	No. of pregnancy terminations		Contraception prevalence rate (%)
	Number	Rate (%)			Number	Rate (%)			Number	Rate (%)	
1949	101,601	4.9		1967	747,490	26.0	53.0	1985	550,127	17.8	
1950	320,150	15.1	19.5	1968	757,389	26.0		1986	527,900	17.1	62.8
1951	458,757	21.3		1969	744,451	25.3	52.1	1987	497,756	16.0	
1952	798,193	36.3	26.3	1970	732,033	24.8		1988	486,146	15.6	56.3
1953	1,068,066	47.7		1971	739,674	24.9	52.6	1989	466,876	14.9	
1954	1,143,059	50.2		1972	732,653	24.5		1990	456,797	14.5	57.9
1955	1,170,143	50.2	33.6	1973	700,532	23.2	59.3	1991	436,299	13.9	
1956	1,159,288	48.7		1974	679,837	22.4		1992	413,032	13.2	64.0
1957	1,122,316	46.2	39.2	1975	671,597	22.1	60.5	1993	386,807	12.4	
1958	1,128,231	45.6		1976	664,106	21.8		1994	364,350	11.8	58.6
1959	1,098,853	43.6	42.5	1977	641,242	21.1	60.4	1995	343,024	11.1	
1960	1,063,256	42.0		1978	618,044	20.3		1996	338,867	10.9	56.6
1961	1,035,329	40.6	42.3	1979	613,676	20.1	62.2	1997	337,799	11.0	
1962	985,351	37.8		1980	598,084	19.5		1998	332,220	11.0	54.1
1963	955,092	35.7	44.6	1981	596,569	19.5	55.5	1999	337,314	11.3	
1964	878,748	32.1		1982	590,299	19.3		2000	341,146	11.7	55.9
1965	843,248	30.2	55.5	1983	568,363	18.5					
1966	808,378	28.5		1984	568,916	18.5	57.3				

N.B.: Figures for pregnancy terminations from before 1972 do not include Okinawa Prefecture. The rate of pregnancy terminations refer to the female population aged 15~49.

Source: Figures for number of pregnancy terminations are taken from the "Annual Reports on Health and Welfare" and "Statistics Report on Protecting Mother's Health," issued by the Statistics and Information Department, Cabinet Secretariat, Ministry of Health and Welfare. The rate of pregnancy terminations is taken from "Japan's Population - Tracking the Post-war 50 Years -: Results from the 1st to the 25th Mainichi Newspaper Nationwide Family Planning Surveys," issued by the Mainichi Newspaper Population Research Committee.

3. Control of Infectious Diseases

Figure A-4 Deaths from Acute Infectious Disease (Cholera, Dysentery, Typhoid, Smallpox) (1876~1899)



Epidemics of cholera occurred at approximately 5 year intervals through the Meiji Era (1868 - 1911), with more than 100,000 deaths in the worse

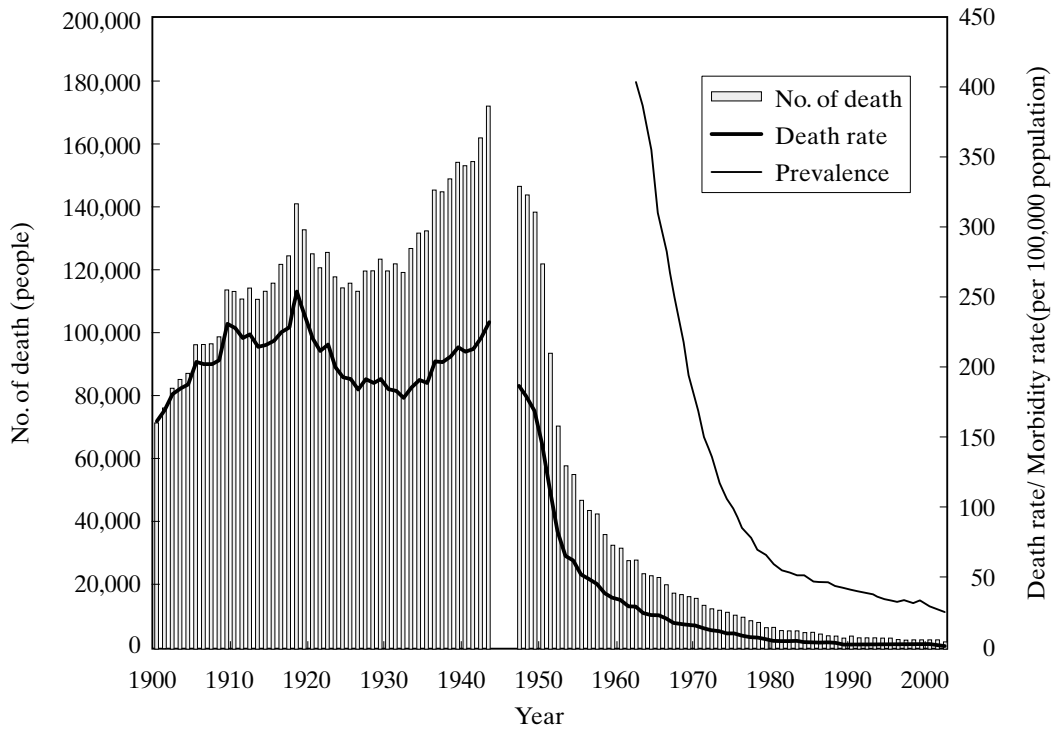
outbreaks. Dysentery peaked in 1893, caused a large number of deaths. These acute infectious diseases were the most high priority issue in Japan at this time.

Table A-10 Number of Patients and Deaths from Acute Infectious Disease (Cholera, Dysentery, Typhoid, Smallpox) (1876~1899)

Year	Cholera		Dysentery		Typhoid		Smallpox	
	No. of patients	No. of deaths	No. of patients	No. of deaths	No. of patients	No. of deaths	No. of patients	No. of deaths
1876	—	—	976	76	869	108	318	145
1877	13,816	8,027	349	38	1,964	141	3,441	653
1878	902	275	1,078	181	4,092	558	2,896	685
1879	162,637	105,786	8,167	1,477	10,652	2,530	4,799	1,295
1880	1,580	618	5,047	1,305	17,140	4,177	3,415	1,731
1881	9,387	6,237	6,827	1,802	16,999	4,203	342	34
1882	51,631	33,784	4,330	1,313	17,308	5,231	1,106	197
1883	669	434	20,172	5,066	18,769	5,043	1,271	295
1884	904	417	22,702	6,036	23,279	5,969	1,703	410
1885	13,824	9,329	47,307	10,690	29,504	6,672	12,759	3,329
1886	155,923	108,405	24,326	6,839	66,224	13,807	73,337	18,678
1887	1,228	654	16,147	4,257	47,449	9,813	39,779	9,967
1888	810	410	26,815	6,576	43,600	9,211	4,052	853
1889	751	431	22,873	5,970	35,849	8,623	1,324	328
1890	46,019	35,227	42,633	8,706	34,736	8,464	296	25
1891	11,142	7,760	46,358	11,208	43,967	9,614	3,608	721
1892	874	497	70,842	16,844	35,636	8,529	33,779	8,409
1893	633	364	167,305	41,284	34,069	8,183	41,898	11,852
1894	546	314	155,140	38,094	36,667	8,054	12,418	3,342
1895	55,144	40,154	52,711	12,959	37,015	8,401	1,284	268
1896	1,481	907	85,876	22,356	42,505	9,174	10,704	3,388
1897	894	488	91,077	23,765	26,998	5,697	41,946	12,276
1898	655	374	90,976	22,392	25,297	5,697	1,752	362
1899	829	487	108,713	23,763	27,673	6,452	1,215	245

Source: The Ministry of Health and Welfare, Medical Affairs Bureau ed. "Eighty Years of the Comprehensive Medical Code" (1995, Asahi)

Figure A-5 Number of Tuberculosis Deaths, Mortality Rate and Morbidity Rate



Although the pre-war number of deaths from tuberculosis was massive, and the mortality rate was extremely high, after the war both the number of deaths and the mortality rate dropped precipitately. It is worthy of note that the Tuberculosis mortality rate decreased by 10,000 to 20,000 each year in 1950 to 53 from previous year.

The incidence (number of new registrations that year per 100,000 head of population) dropped below 100, a level that indicates that the spread of the disease had halted, from 1975. Since then, the incidence of tuberculosis has continued to decline, although new infections continue to occur.

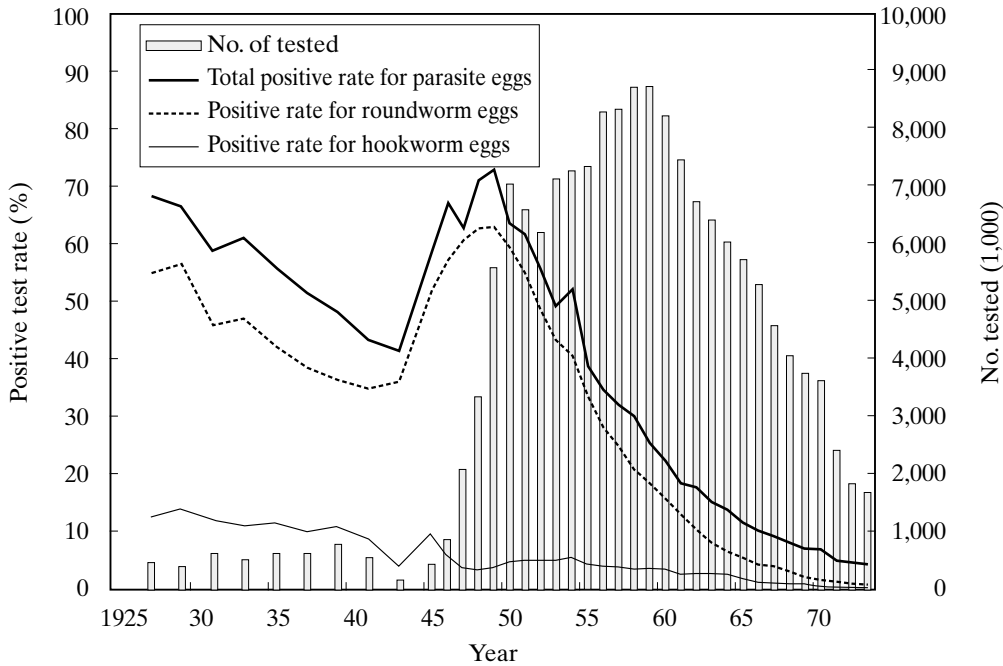
Table A-11 Tuberculosis Deaths, Mortality Rate and Morbidity Rate

Year	No. of deaths	Mortality rate (per 100,000 population)	Morbidity rate (per 100,000 population)	Year	No. of deaths	Mortality rate (per 100,000 population)	Morbidity rate (per 100,000 population)	Year	No. of deaths	Mortality rate (per 100,000 population)	Morbidity rate (per 100,000 population)
1900	71,771	163.7		1936	145,160	207.0		1972	12,565	11.9	137.8
1901	76,614	172.7		1937	144,620	204.8		1973	11,965	11.1	118.5
1902	82,559	183.6		1938	148,827	209.6		1974	11,418	10.4	106.7
1903	85,132	186.9		1939	154,371	216.3		1975	10,567	9.5	96.6
1904	87,260	189.1		1940	153,154	212.9		1976	9,578	8.5	86.6
1905	96,030	206.0		1941	154,344	215.3		1977	8,803	7.8	78.2
1906	96,069	204.2		1942	161,484	223.1		1978	8,261	7.2	70.0
1907	96,584	203.7		1943	171,474	235.3		1979	6,738	5.8	65.8
1908	98,871	206.1		1944	—	—		1980	6,439	5.5	60.7
1909	113,622	234.0		1945	—	—		1981	5,698	4.9	55.9
1910	113,203	230.2		1946	—	—		1982	5,343	4.5	53.9
1911	110,722	222.1		1947	146,241	187.2		1983	5,329	4.5	51.9
1912	114,197	225.8		1948	143,909	179.9		1984	4,950	4.1	51.2
1913	110,753	215.9		1949	138,113	168.9		1985	4,692	3.9	48.4
1914	113,341	217.8		1950	121,769	146.4		1986	4,170	3.4	46.6
1915	115,913	219.7		1951	93,307	110.3	698.4	1987	4,022	3.3	46.2
1916	121,810	227.7		1952	70,558	82.2		1988	3,872	3.2	44.3
1917	124,787	230.5		1953	57,849	66.5		1989	3,527	2.9	43.1
1918	140,747	257.1		1954	55,124	62.4		1990	3,664	3.0	41.9
1919	132,565	240.9		1955	46,735	52.3	579.6	1991	3,325	2.7	40.8
1920	125,165	223.7		1956	43,874	48.6		1992	3,347	2.7	39.3
1921	120,719	213.0		1957	42,718	46.9		1993	3,249	2.6	38.0
1922	125,506	218.7		1958	36,274	39.4		1994	3,094	2.5	35.7
1923	118,216	203.4		1959	32,992	35.5		1995	3,178	2.6	34.3
1924	114,229	194.0		1960	31,959	34.2	524.2	1996	2,858	2.3	33.7
1925	115,956	194.1		1961	27,916	29.6	445.9	1997	2,742	2.2	33.9
1926	113,045	186.1		1962	27,852	29.3	403.2	1998	2,795	2.2	32.4
1927	119,439	193.7		1963	23,302	24.2	386.7				(34.8)
1928	119,632	191.1		1964	22,929	23.6	355.5	1999	2,935	2.3	34.6
1929	123,490	194.6		1965	22,366	22.8	309.9				(38.2)
1930	119,635	185.6		1966	20,064	20.3	282.5	2000	2,656	2.1	31.0
1931	121,875	186.2		1967	17,708	17.8	253.2				(35.0)
1932	119,196	179.4		1968	16,922	16.8	225.0	2001	2,491	2.0	27.9
1933	126,703	187.9		1969	16,392	16.1	194.7	2002	2,316	1.8	25.8
1934	131,525	192.5		1970	15,899	15.4	172.3				
1935	132,151	190.8		1971	13,608	13.0	150.6				

- N.B.: 1) Figures for deaths and mortality rates from 1947~1972 do not include Okinawa Prefecture. The 2002 figures are approximations.
2) Figures for morbidity rate from 1951 to 1997 use the old classification of disease activity, whereas the figures from 1998 onwards use the new classification. Figures from 1998~2000 in () are the corresponding figures under the old classification.

Source: Figures for deaths and mortality rates from "Population Vital Statistics" issued by the Statistics and Information Department, Cabinet Secretariat, Ministry of Health, Labour and Welfare. Incidences for 1951~1960 are taken from "Detailed Statistics Regarding Infectious Diseases and Food Poisoning," for 1961~1986 from the "Periodic Report Regarding Registered Tuberculosis Patients," for 1987~1995 from "Cumulative Results of Annual Surveillance Reports of Tuberculosis and Infectious Diseases," and for 1996~ from "Cumulative Results of Annual Survey Reports of Changes in the Incidence of Tuberculosis."

Figure A-6 Positive Test Rate for Parasite Eggs



The prevalence of parasitic infestation was extremely high as 70% in the pre-war and immediate post-war periods, reaching a peak of

73% in 1949, and decreasing rapidly thereafter. The number of tested for parasitic diseases increased rapidly post-war, then tended to decrease after

Table A-12 Positive Test Rate for Parasite Eggs

Year	No. of tested	Total positive rate for parasite eggs (%)	Positive rate for roundworm eggs (%)	Positive rate for hookworm eggs (%)	Year	No. of tested	Total positive rate for parasite eggs (%)	Positive rate for roundworm eggs (%)	Positive rate for hookworm eggs (%)
1918-1926	854,451	73.0	61.3	23.3	1955	7,324,726	38.0	33.3	4.2
1927	457,337	68.2	55.1	12.6	1956	8,292,895	34.5	27.8	3.9
1929	369,045	66.6	56.4	13.7	1957	8,310,858	31.6	24.8	3.8
1931	593,443	58.9	45.9	12.1	1958	8,683,921	30.0	20.6	3.3
1933	501,658	61.2	47.1	11.2	1959	8,702,768	25.3	18.4	3.3
1935	609,331	55.7	42.0	11.6	1960	8,194,622	22.7	15.5	3.3
1937	608,496	51.4	38.6	10.0	1961	7,444,796	18.4	12.8	2.8
1939	767,779	48.2	36.4	10.6	1962	6,729,356	17.4	10.4	2.8
1941	520,254	43.0	34.7	8.9	1963	6,415,619	15.3	8.2	2.8
1943	165,068	41.1	35.7	3.7	1964	6,031,346	13.9	6.5	2.6
1945	413,241	58.4	51.8	9.6	1965	5,734,960	11.3	5.3	1.8
1946	821,765	67.1	57.1	5.8	1966	5,258,999	9.9	4.2	1.3
1947	2,055,274	62.5	60.5	3.3	1967	4,588,011	9.1	3.7	1.1
1948	3,334,597	71.1	62.5	3.1	1968	4,035,043	8.1	2.9	0.9
1949	5,559,078	73.0	62.9	3.5	1969	3,746,543	6.8	1.9	0.6
1950	7,026,499	63.8	59.6	4.5	1970	3,626,768	6.7	1.6	0.5
1951	6,552,143	61.7	55.1	4.8	1971	2,407,061	5.1	1.1	0.3
1952	6,191,612	55.8	48.3	4.9	1972	1,841,350	4.6	0.7	0.3
1953	7,107,763	48.7	43.2	4.8	1973	1,663,146	4.2	0.6	0.2
1954	7,234,396	51.8	40.4	5.3					

N.B.: Testing data from the Ministry of Health and Welfare. Testing methods varied widely pre-war, with small sample sizes, so caution is needed in making comparisons with post-war data.

Source: Ministry of Health and Welfare Statistics

Table A-13 Trends in Implementation Rate of Vaccination

Classification	Regular (fixed period)															Temporary schedule			
	Smallpox			Diphtheria							Pertussis			Poliomyelitis		Rubella	Measles	Influenza (administered twice)	Japanese encephalitis
	Phase 1	Phase 2	Phase 3	Phase1			Phase 2	Phase 3	Phase 4	Phase1			Phase 2	Phase 1	Phase 2				
				First	Second	Third				First	Second	Third							
1962	67.5	66.4	67.2	70.8	61.0	51.4	56.7	55.9	57.8	68.4	59.1	49.7	52.5	93.0	89.0	—	—	—	—
1963	69.8	67.9	61.0	71.5	61.6	51.3	63.1	57.0	52.1	69.1	59.4	49.4	59.0	83.9	70.3	—	—	—	—
1964	70.6	65.1	65.5	68.4	57.9	48.4	51.6	55.0	58.0	67.4	56.8	47.3	50.2	74.2	78.8	—	—	—	—
1965	68.0	68.1	65.3	69.4	59.1	48.9	54.0	58.8	62.3	68.2	58.3	48.2	51.7	82.5	85.0	—	—	—	—
1966	67.3	62.9	62.7	67.1	57.3	48.0	48.9	53.6	56.6	66.1	56.4	47.2	47.0	80.9	77.5	—	—	—	—
1967	60.6	64.6	65.8	63.7	54.6	45.2	47.8	55.8	60.8	63.5	54.3	44.6	46.0	76.0	62.7	—	—	—	—
1968	70.5	64.0	65.8	69.5	59.5	50.0	46.7	55.3	61.3	69.0	59.1	49.6	45.4	86.4	78.0	—	—	—	—
1969	64.4	64.7	63.9	67.3	57.6	47.7	44.2	56.2	56.4	66.8	57.2	47.4	42.4	79.5	71.4	—	—	—	—
1970	43.9	52.9	50.9	58.9	49.7	40.0	40.2	50.3	50.3	58.5	49.3	39.7	38.8	73.1	64.7	—	—	—	—
1971	50.3	62.5	65.3	63.2	52.5	41.1	40.2	53.0	57.2	62.2	51.6	40.7	39.1	78.5	64.2	—	—	—	—
1972	61.2	75.4	65.7	73.3	60.7	48.4	38.6	65.4	59.6	72.6	60.1	47.8	36.8	80.0	69.4	—	—	—	—
1973	70.9	58.3	65.7	77.4	65.1	52.0	49.4	53.6	60.6	69.0	64.8	51.9	48.0	88.2	77.7	—	—	—	—
1974	82.5	73.4	72.9	81.2	70.2	58.9	55.0	60.4	59.1	78.9	68.2	57.1	52.4	87.8	81.0	—	—	—	—
1975	64.3	66.9	65.7	26.8	20.2	16.2	26.6	58.0	68.4	22.1	16.0	12.9	21.1	77.7	72.1	—	—	—	—
1976	5.5	4.8	7.6	20.5	17.9	12.5	34.8	23.5	33.7	13.6	10.7	7.9	26.2	73.5	66.3	—	—	—	—
1977				63.7	54.2	39.7	26.0	66.2		41.7	35.2	28.4	13.2	89.9	84.0	27.3	—	49.5	42.5
1978				85.5	76.7	60.3	40.2	79.3		64.4	57.2	47.9	27.6	84.1	79.1	72.4	72.6	56.9	47.3
1979				82.6	73.6	61.2	61.1	60.6		70.5	62.6	53.9	44.9	83.2	76.8	63.7	59.1	67.9	57.9
1980				81.4	73.2	63.4	61.5	76.4		75.5	68.1	60.2	51.2	84.3	80.2	65.1	54.2	55.5	49.3
1981				98.4	90.2	79.2	71.0	78.3		92.5	84.8	75.2	64.1	98.7	95.2	64.8	63.9	63.0	53.7
1982				99.2	92.2	83.3	76.3	78.6		95.8	89.3	81.2	71.2	98.4	95.0	72.2	65.5	64.3	57.4
1983				99.1	91.9	83.8	82.4	81.2		96.4	89.5	81.9	78.6	100.0	95.1	74.0	69.5	63.5	54.0
1984				98.1	92.6	84.1	79.1	86.0		95.8	90.4	82.3	76.1	98.4	94.9	72.6	72.9	65.3	53.0
1985				93.3	89.7	81.4	77.6	81.6		91.2	87.9	79.8	74.2	94.3	92.3	70.1	65.8	61.7	55.6
1986				98.4	94.0	86.3	80.8	82.7		96.4	92.1	85.1	77.8	96.0	93.7	72.1	70.4	61.0	53.5
1987				97.2	92.8	86.5	84.1	86.8		94.6	90.7	84.8	80.9	92.8	90.2	70.6	77.3	44.8	53.4
1988				95.3	90.9	84.9	85.3	80.4		93.3	89.3	83.4	82.9	92.7	90.9	68.2	75.3	32.0	55.2
1989				97.8	93.2	86.7	83.2	80.1		96.1	91.8	85.4	80.5	94.8	92.5	69.6	76.5	25.0	47.1
1990				100.0	94.9	87.3	79.9	79.6		98.2	93.0	85.8	77.6	95.6	92.4	68.8	65.5	21.9	49.6
1991				100.0	98.6	92.8	95.4	81.3		99.8	96.6	91.5	82.7	96.3	93.5	69.0	71.4	19.9	46.7
1992				97.9	94.3	89.0	91.7	80.7		95.8	92.5	87.2	88.5	97.6	94.4	70.6	69.2	17.8	43.5
1993				93.3	89.9	85.4	85.0	82.3		91.7	88.4	84.5	82.3	93.6	91.1	67.2	67.5	20.6	66.1
1994				95.2	91.2	85.4	80.3	79.8		93.9	90.0	84.5	77.5	95.2	90.9	66.8	74.5	—	65.4

N.B.: These figures were derived by dividing the number of people undergoing each immunization (public health center operational data) by the number of eligible people (population of eligible age according to the Ministry of Internal Affairs and Communications Statistics Bureau estimates).

Source: *The Saikin Seiyaku Kyoukai* [Bacterial Products Association] (1996) "Fifty Years of Progress" pp. 210-211

4. Occupational Health

Table A-14 Number of Industrial Accidents

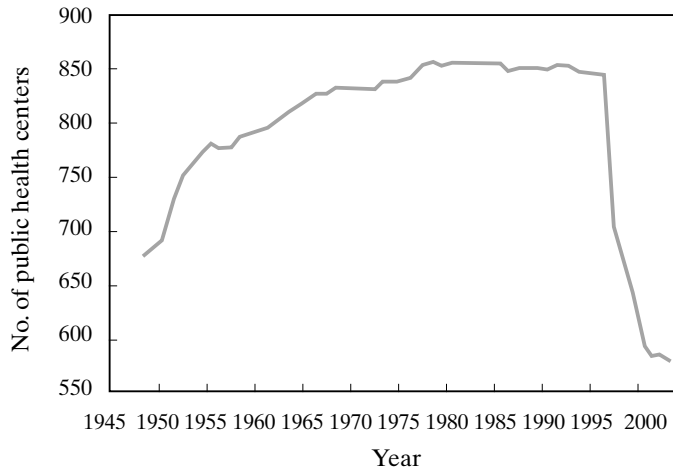
Year	Fatal accidents	Accidents resulting in more than 4 days absence from work*	Year	Fatal accidents	Accidents resulting in more than 4 days absence from work*	Year	Fatal accidents	Accidents resulting in more than 4 days absence from work*
1957	5,612	398,190	1972	5,631	324,435	1987	2,342	232,953
1958	5,368	401,760	1973	5,269	387,342	1988	2,549	226,318
1959	5,895	435,017	1974	4,330	347,407	1989	2,419	217,964
1960	6,095	468,139	1975	3,725	322,322	1990	2,550	210,108
1961	6,712	481,686	1976	3,345	333,311	1991	2,489	200,633
1962	6,093	466,126	1977	3,302	345,293	1992	2,354	189,589
1963	6,506	440,547	1978	3,326	348,826	1993	2,245	181,900
1964	6,126	428,558	1979	3,077	340,731	1994	2,301	176,047
1965	6,046	408,331	1980	3,009	335,706	1995	2,414	167,316
1966	6,303	405,361	1981	2,912	312,844	1996	2,363	162,862
1967	5,990	394,627	1982	2,674	294,319	1997	2,078	156,726
1968	6,088	386,443	1983	2,588	278,623	1998	1,844	148,248
1969	6,208	382,642	1984	2,635	271,884	1999	1,992	137,316
1970	6,048	364,444	1985	2,572	257,240	2000	1,889	133,948
1971	5,552	337,421	1986	2,318	246,891			

N.B.: *Includes fatal accidents.

Source: Japan Personnel Management & Safety Information Center

5. Community-based Health Systems

Figure A-7 Number of Public Health Centers



The number of public health centers rose rapidly up until 1955, and then more slowly, reaching a peak of 858 in 1978. The number

stabilized at around 845~855 for the next two decades, 139 public health centers has closed in 1997, and continuing to decline steadily thereafter.

Table A-15 Number of Public Health Centers

Year	No. of public health centers	Year	No. of public health centers	Year	No. of public health centers	Year	No. of public health centers
1948	675	1963	810	1977	852	1991	852
1950	691	1964	817	1978	858	1992	852
1951	723	1965	821	1979	852	1993	848
1952	746	1966	826	1980	855	1994	847
1953	758	1967	829	1981	855	1995	845
1954	772	1968	832	1982	855	1996	845
1955	781	1969	832	1983	855	1997	706
1956	778	1970	832	1984	855	1998	663
1957	778	1971	832	1985	855	1999	641
1958	785	1972	832	1986	849	2000	594
1959	790	1973	839	1987	850	2001	582
1960	793	1974	839	1988	851	2002	582
1961	796	1975	840	1989	850	2003	576
1962	803	1976	843	1990	848		

N.B.: The date of ascertaining the numbers differed from year to year. Figures since 1991 are as of 1 April.

Source: From "Annual Report on Public Health Center Management" issued by the Statistical Analysis Division, Statistics and Information Department, Cabinet Secretariat, Ministry of Health and Welfare, and "Report on Public Health Center Management" issued by the Public Health Statistics Division, Statistics and Information Department, Cabinet Secretariat, Ministry of Health and Welfare, and figures provided by the Health Service Bureau, Ministry of Health, Labour and Welfare.

Table A-16 Number of Public Health Nurses according to Workplace

Year		1965	1970	1975	1977	1978	1980	1982	1984	1986	1988	1990
Community-based health	Public health center	5,926	6,354	7,144	7,290	7,437	7,649	7,870	8,150	8,386	8,460	8,749
	National public health center	5,477	5,362	5,799	6,008	7,226	7,750	8,390	9,486	10,273	11,033	11,673
	Municipal public health center	573	637	920	1,011							
	Subtotal	11,976	12,353	13,863	14,309	14,663	15,399	16,260	17,636	18,659	19,493	20,422
Public health nurse training school		79	98	160	172	175	169	188	215	227	293	258
Hospital, medical clinic, aged care facility		502	474	748	771	890	1,057	1,246	1,320	1,439	1,842	2,426
Office		952	783	794	871	875	852	953	1,112	1,080	1,154	1,254
Other		450	299	400	467	413	480	490	575	645	777	943
Total		13,959	14,007	15,965	16,590	17,016	17,957	19,137	20,858	22,050	23,559	25,303

N.B.: 1) National public health nurses transferred to municipalities in 1978.

2) The figure for municipal public health center also includes public health nurses employed by prefectures.

Source: "Report on Public Health Administration" issued by the Statistics and Information Department, Cabinet Secretariat, Ministry of Health and Welfare

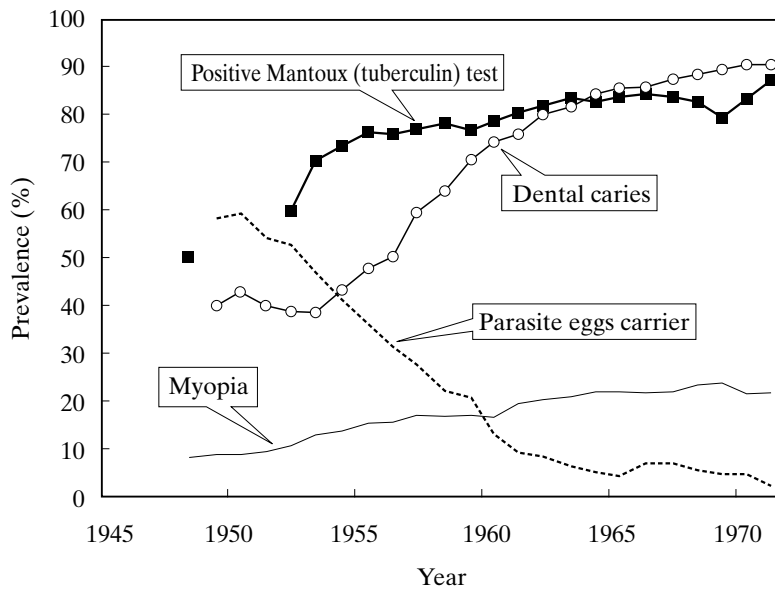
6. School Health Programs

Table A-17 Physical Characteristics of School Students

	Trends in height of schoolchildren (cm)								Trends in weight of schoolchildren (kg)							
	Male				Female				Male				Female			
	6yrs	11yrs	14yrs	17yrs	6yrs	11yrs	14yrs	17yrs	6yrs	11yrs	14yrs	17yrs	6yrs	11yrs	14yrs	17yrs
1964	113.2	138.2	157.7	166.4	112.2	140.0	152.3	154.7	19.4	31.8	47.0	57.1	18.9	33.3	46.1	51.0
1974	115.2	141.7	161.9	168.7	114.5	143.9	154.7	156.2	20.5	35.0	50.7	59.1	20.1	36.7	48.8	52.3
1984	116.3	143.2	163.6	170.2	115.6	145.4	156.2	157.6	21.1	36.4	52.8	61.5	20.7	37.7	49.7	52.7
1996	116.8	144.9	165.1	170.9	116.1	146.7	156.6	158.1	21.6	38.4	54.6	62.9	21.2	39.4	50.5	53.1
1999	116.6	145.3	165.5	170.9	115.8	147.1	156.7	158.1	21.7	39.3	55.3	62.4	21.3	40.0	50.7	53.1
2000	116.7	145.3	165.5	170.8	115.8	147.1	156.8	158.1	21.8	39.4	55.4	62.6	21.3	40.1	50.7	53.1
2001	116.7	145.3	165.5	170.9	115.9	147.1	156.8	158.0	21.7	39.5	55.5	62.8	21.2	40.1	50.9	53.2
2002	116.7	145.2	165.5	170.7	115.8	146.8	156.7	157.9	21.7	39.4	55.5	63.2	21.1	39.8	50.9	53.5

Source: "Survey of School Health Statistics" issued by the Ministry of Education, Culture, Sports, Science and Technology

Figure A-8 Disease Prevalence in Junior High School Students



The main post-war trends in disease prevalence in schoolchildren are the increase in dental caries, and the decrease in parasite infestation. The increase in the rate of positive Mantoux (tuberculin) testing is attributable to the school health program of BCG vaccination.

Although Figure A-7 refers to junior high school children; trends are similar for primary schoolchildren. The main differences are that the rate of positive Mantoux (tuberculin) testing is lower, and the increase in the rate of myopia is not as great, in primary schoolchildren.

Table A-18 Prevalence of Main Disease in School Students

Year	Primary schoolchildren (total of male and female)				Junior-high school children (total of male and female)			
	Myopia	Dental caries*	Positive Mantoux (tuberculin) test	Parasite eggs carrier	Myopia	Dental caries*	Positive Mantoux (tuberculin) test	Parasite eggs carrier
1948	8.30	-	29.37	-	8.22	-	49.66	-
1949	5.44	42.08	-	63.89	8.86	39.37	-	58.50
1950	8.22	42.25	-	63.42	8.85	42.04	-	59.26
1951	7.72	41.63	-	57.98	9.51	39.35	-	54.29
1952	8.99	45.45	44.37	55.14	10.49	38.38	59.43	52.77
1953	10.50	51.94	55.28	48.76	12.83	38.34	69.72	46.92
1954	10.23	59.78	57.20	42.21	13.97	42.87	73.68	41.14
1955	10.29	66.50	60.41	38.28	15.19	47.31	76.53	35.71
1956	9.21	70.47	60.84	32.48	14.96	50.00	75.87	31.02
1957	9.61	79.00	61.70	29.20	17.03	58.80	77.00	27.40
1958	9.78	80.00	62.60	25.40	16.49	63.80	77.90	22.10
1959	9.13	81.60	62.70	21.80	16.81	70.40	77.00	20.30
1960	9.69	84.19	65.20	14.04	16.71	73.97	78.50	12.83
1961	12.36	83.14	65.40	11.55	18.85	75.50	80.20	9.40
1962	12.09	85.54	67.00	9.50	20.03	80.01	82.30	7.81
1963	11.77	87.61	67.20	6.90	20.59	81.74	83.90	6.08
1964	11.99	87.89	64.90	5.81	22.21	84.15	82.80	5.03
1965	12.09	87.88	65.00	4.47	21.96	85.65	83.10	3.78
1966	11.40	88.67	67.70	9.29	21.53	86.06	84.20	6.98
1967	11.34	91.96	67.60	9.33	22.19	87.44	83.80	7.09
1968	11.68	91.50	67.10	4.71	23.30	88.50	82.50	5.53
1969	12.10	92.24	62.80	7.59	23.70	89.67	80.00	4.85
1970	11.30	93.60	68.30	7.30	21.20	90.50	84.10	4.40
1971	10.55	93.92	72.62	6.65	22.20	90.85	87.57	2.06

N.B.: *Includes treated disease.

Source: Based on the Ministry of Education, "Report of Survey of School Health Statistics." For details, refer to Japanese Society of School Health eds, "One Hundred Years of School Health,"(1997) First Statutory Publication.

7. Emergency Medical Care

Table A-19 Number of Traffic Accidents, Deaths and Injuries

Year	No. of accidents	No. of deaths	No. of injured	Year	No. of accidents	No. of deaths	No. of injured
1956	122,691	6,751	102,072	1984	518,642	9,262	644,321
1963	531,966	12,301	359,089	1985	552,788	9,261	681,346
1967	521,481	13,618	655,377	1986	579,190	9,317	712,330
1968	635,056	14,256	828,071	1987	590,723	9,347	722,179
1969	720,880	16,257	967,000	1988	614,481	10,344	752,845
1970	718,080	16,765	981,096	1989	661,363	11,086	814,832
1971	700,290	16,278	949,689	1990	643,097	11,227	790,295
1972	659,283	15,918	889,198	1991	662,388	11,105	810,245
1973	586,713	14,574	789,948	1992	695,345	11,451	844,003
1974	490,452	11,432	651,420	1993	724,675	10,942	878,633
1975	472,938	10,792	622,467	1994	729,457	10,649	881,723
1976	471,041	9,734	613,957	1995	761,789	10,679	922,677
1977	460,649	8,945	593,211	1996	771,084	9,942	942,203
1978	464,037	8,783	594,116	1997	780,399	9,640	958,925
1979	471,573	8,466	596,282	1998	803,878	9,211	990,675
1980	476,677	8,760	598,719	1999	850,363	9,006	1,050,397
1981	485,578	8,719	607,346	2000	931,934	9,066	1,155,697
1982	502,261	9,073	626,192	2001	947,169	8,747	1,180,955
1983	526,362	9,520	654,822	2002	936,721	8,326	1,167,855

N.B.: 1) Accident numbers include accidents with property damage only until 1963.

Figures from 1967 on are accidents causing injury to humans only.

2) Figures from 1972 on include Okinawa Prefecture.

Source: From National Police Agency files.

8. Health Expenditure, Social Security

Table A-20 Overview of National Medical Expenditure

Year	National medical expenditure		Medical expenditure per head of population (¥1,000)	National medical expenditure as proportion of national income (%)	National income		Total population (1,000)
	Total amount (¥100 million)	Increase rate (%)			(¥100 million)	Increase rate (%)	
1954	2,152	-	2.4	-	-	-	88,239
1955	2,388	11	2.7	3.42	69,733	-	89,276 *
1956	2,583	8.2	2.9	3.27	78,963	13.2	90,172
1957	2,897	12.2	3.2	3.27	88,681	12.3	90,928
1958	3,230	11.5	3.5	3.44	93,829	5.8	91,767
1959	3,625	12.2	3.9	3.28	110,421	17.7	92,641
1960	4,095	13	4.4	3.03	134,967	22.2	93,419 *
1961	5,130	25.3	5.4	3.19	160,819	19.2	94,287
1962	6,132	19.5	6.4	3.43	178,933	11.3	95,181
1963	7,541	23	7.8	3.57	210,993	17.9	96,156
1964	9,389	24.5	9.7	3.9	240,514	14	97,182
1965	11,224	19.5	11.4	4.18	268,270	11.5	98,275 *
1966	13,002	15.8	13.1	4.11	316,448	18	99,036
1967	15,116	16.3	15.1	4.03	375,476	18.7	100,196
1968	18,016	19.2	17.8	4.12	437,209	16.4	101,331
1969	20,780	15.3	20.3	3.99	521,178	19.2	102,536
1970	24,962	20.1	24.1	4.09	610,297	17.1	103,720 *
1971	27,250	9.2	25.9	4.13	659,105	8	105,145
1972	33,994	24.7	31.6	4.36	779,369	18.2	107,595
1973	39,496	16.2	36.2	4.12	958,396	23	109,104
1974	53,786	36.2	48.6	4.78	1,124,716	17.4	110,573
1975	64,779	20.4	57.9	5.22	1,239,907	10.2	111,940 *
1976	76,684	18.4	67.8	5.46	1,403,972	13.2	113,089
1977	85,686	11.7	75.1	5.5	1,557,032	10.9	114,154
1978	100,042	16.8	86.9	5.82	1,717,785	10.3	115,174
1979	109,510	9.5	94.3	6.01	1,822,066	6.1	116,133
1980	119,805	9.4	102.3	6	1,995,902	9.5	117,060 *
1981	128,709	7.4	109.2	6.14	2,097,489	5.1	117,884
1982	138,659	7.7	116.8	6.32	2,193,918	4.6	118,693
1983	145,438	4.9	121.7	6.3	2,308,057	5.2	119,483
1984	150,932	3.8	125.5	6.2	2,436,089	5.5	120,235
1985	160,159	6.1	132.3	6.15	2,602,784	6.8	121,049 *
1986	170,690	6.6	140.3	6.3	2,711,297	4.2	121,672
1987	180,759	5.9	147.8	6.37	2,838,955	4.7	122,264
1988	187,554	3.8	152.8	6.22	3,013,800	6.2	122,783
1989	197,290	5.2	160.1	6.12	3,221,436	6.9	123,255
1990	206,074	4.5	166.7	5.88	3,507,153	8.9	123,611 *
1991	218,260	5.9	176	5.85	3,730,039	6.4	124,043
1992	234,784	7.6	188.7	6.32	3,712,482	-0.5	124,452
1993	243,631	3.8	195.3	6.56	3,711,869	0	124,764
1994	257,908	5.9	206.3	6.86	3,761,619	1.3	125,034
1995	269,577	4.5	214.7	7.16	3,764,543	0.1	125,570 *
1996	285,210	5.8	226.6	7.33	3,889,109	3.3	125,864
1997	290,651	1.9	230.4	7.41	3,924,334	0.9	126,166
1998	298,251	2.6	235.8	7.84	3,805,335	-3	126,486
1999	309,337	3.7	244.2	8.26	3,746,015	-1.6	126,686
2000	303,583	-1.9	239.2	7.98	3,804,499	1.6	126,926 *
2001	313,234	3.2	246.1	8.46	3,700,468	-2.7	127,291

- N.B.: 1) Figures for national income are based on the National Accounts issued by the Cabinet Office (December 2002).
2) Figures for total population are based on the Annual Population Estimates issued by the Statistics Bureau, Ministry of Internal Affairs and Communications (population as of 1 October). Figures marked with * are actual population numbers from Population Censuses.
3) With the implementation of the Long-term Care Insurance System, some expenses that were previously included in national medical expenditure figures now came under the new system. These expenses are therefore not included in the national medical expenditure figures after the 2000 financial year.

Source: The Ministry of Health, Labour and Welfare "Summary of National Medical Expenditure for the Year 2001"

Table A-21 Change in National Medical Expenditure by Classification (unit: ¥100 million)

	1955	1965	1975	1985	1995	2000	2001
National medical expenditure	2,388 100.0%	11,224 100.0%	64,779 100.0%	160,159 100.0%	269,577 100.0%	303,583 100.0%	313,234 100.0%
Public sickness benefits proportion	279 11.7%	1,471 13.1%	8,471 13.1%	12,090 7.5%	12,953 4.8%	16,051 5.3%	16,899 5.4%
The Livelihood Protection Law	244	750	4,210	8,443	8,610	10,650	11,314
Tuberculosis Prevention Law	31	432	819	572	208	120	112
Mental health and mental illness Legislation related to disabled welfare ¹⁾	-	222	961	938	554	853	963
Welfare for the Aged Law ²⁾	·	·	2,127	·	·	·	·
Other	5	68	354	2,138	3,582	4,427	4,510
Medical and public health benefits proportion	1,185 49.6%	7,442 66.3%	47,933 74.0%	88,506 55.3%	140,042 51.9%	140,214 46.2%	141,871 45.3%
Health insurance	1,140	7,193	46,541	85,090	136,641	137,073	138,755
Employee's health insurance	952	5,178	30,262	52,273	83,674	77,603	77,833
National health insurance	188	2,015	16,280	32,816	52,968	59,470	60,922
Other	45	248	1,391	3,417	3,400	3,141	3,116
Proportion of benefits from health insurance for the elderly	· ·	· ·	· ·	40,377 25.2%	84,877 31.5%	102,399 33.7%	107,623 34.4%
Patient co-payments	923 38.7%	2,312 20.6%	8,375 12.9%	19,185 12.0%	31,705 11.8%	44,919 14.8%	46,841 15.0%

N.B.: 1) Mental Health Law from July 1988 until June 1995, previously Mental Hygiene Law.

2) Enacted from January 1973 until January 1983. Replaced by the Law for Health and Medical Services for the Aged in February 1983.

Source: The Ministry of Health, Labour and Welfare "National Medical Expenditure"

Table A-22 Change in Social Security Expenditure by Classification

Year	Social security benefits						National income (¥100 million)	
	Total (¥100 million)	Medical expenses (¥100 million)	Structural ratio (%)	Superannuation, other (¥100 million)		Structural ratio (%)		
1950	1,261	646	51.2	615		48.8	...	
1951	1,571	804	51.1	768		48.9	44,346	
1955	3,893	1,919	49.3	1,974		50.7	69,733	
1960	6,553	2,942	44.9	3,611		55.1	134,967	
				Superannuation (¥100 million)	Structural ratio (%)	Other (¥100 million)	Structural ratio (%)	
1964	13,475	7,328	54.4	3,056	22.7	3,091	22.9	240,514
1965	16,037	9,137	57.0	3,508	21.9	3,392	21.2	268,270
1970	35,239	20,758	58.9	8,548	24.3	5,933	16.8	610,297
1975	117,693	57,132	48.5	38,831	33.0	21,730	18.5	1,239,907
1980	247,736	107,329	43.3	104,525	42.2	35,882	14.5	1,995,902
1985	356,798	142,830	40.0	168,923	47.3	45,044	12.6	2,602,784
1990	472,203	183,795	38.9	240,420	50.9	47,989	10.2	3,509,873
1995	647,314	240,593	37.2	334,986	51.8	71,735	11.1	3,788,057
1996	675,475	251,789	37.3	349,548	51.7	74,139	11.0	3,886,361
1997	694,187	253,095	36.5	363,996	52.4	77,097	11.1	3,918,579
1998	721,411	254,077	35.2	384,105	53.2	83,228	11.5	3,820,384
1999	750,417	263,953	35.2	399,112	53.2	87,352	11.6	3,829,620
2000	781,272	260,062	33.3	412,012	52.7	109,198	14.0	3,805,066

N.B.: 1) Figures may not add up due to rounding off.

2) Figures for national income from prior to 1954 are taken from the "Annual Report of National Income for 1978," for 1955~1977 from the "Report of Long-term Retrospective Major Series National Accounts," for 1978~1989 from the "Annual Estimate of National Accounts for 2000," all issued by the Economic Planning Agency, and for 1990~ from the Annual Estimate of National Accounts issued by the Economic and Social Research Institute, Cabinet Office (December 2001).

Source: National Institute of Population and Social Security Research "Social Security Expenditure in the Year 2000"

Table A-23 Determination of Healthcare Benefits

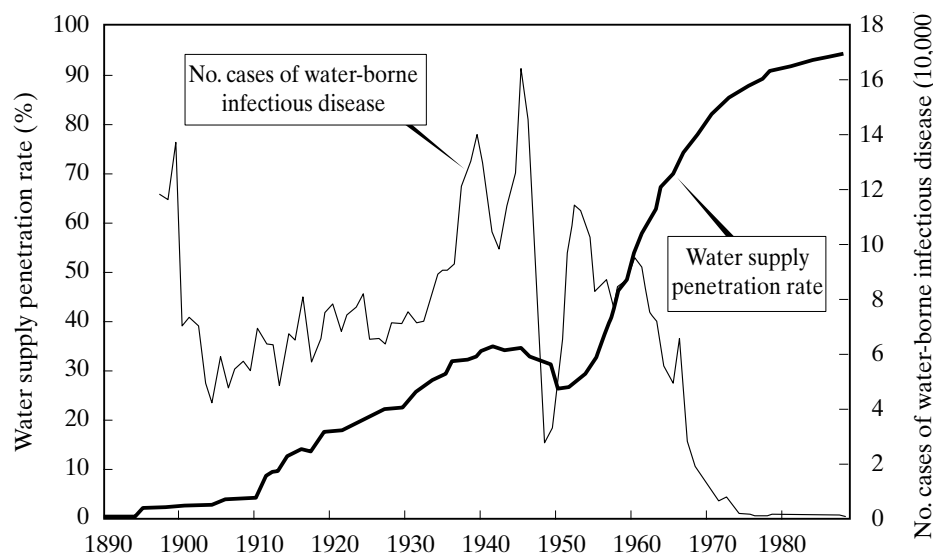
No. of consultations per 100 people (consultation rate)							Medical costs per day (¥)						
		Government managed health insurance		Health Insurance Society		National health insurance			Government managed health insurance		Health Insurance Society		National health insurance
		Insured	Dependents	Insured	Dependents				Insured	Dependents	Insured	Dependents	
Total	Year						Total	Year					
	1975	645.61	611.33	534.88	622.07	538.44		1975	2,682	2,173	2,613	2,102	2,550
	1985	635.46	599.24	535.56	613.13	583.03		1985	5,543	4,664	5,657	4,356	5,714
	1990	669.51	643.84	574.38	645.59	677.11		1990	6,698	5,758	6,751	5,367	7,037
	1995	708.86	689.30	621.24	668.14	739.34		1995	7,819	6,823	7,798	6,359	8,217
2001	689.43	719.94	635.63	712.26	792.76	2001	8,461	7,672	8,430	7,071	9,137		
Inpatient care	Year						Inpatient care	Year					
	1975	16.23	13.02	10.21	11.17	14.23		1975	7,147	6,626	7,734	7,032	6,801
	1985	13.85	12.41	9.18	9.86	17.09		1985	15,210	13,879	17,239	15,268	13,337
	1990	13.10	13.23	8.94	10.28	20.72		1990	18,272	15,949	20,357	17,534	14,463
	1995	12.46	14.01	9.04	10.80	21.73		1995	23,121	18,928	25,903	21,015	16,772
2001	10.27	13.38	8.16	10.38	20.16	2001	30,707	24,611	33,472	27,005	21,296		
Outpatient care	Year						Outpatient care	Year					
	1975	533.02	510.86	429.54	514.12	448.37		1975	2,090	1,619	2,094	1,605	1,883
	1985	509.60	481.81	412.38	487.39	465.49		1985	4,056	3,236	4,262	3,125	3,920
	1990	528.74	512.33	436.40	507.03	539.02		1990	5,195	4,271	5,417	4,102	5,186
	1995	564.32	555.46	477.80	531.31	595.43		1995	6,103	5,182	6,237	4,926	6,194
2001	547.25	588.22	493.65	577.29	643.31	2001	6,307	5,609	6,476	5,350	6,490		
Dental care	Year						Dental care	Year					
	1975	96.36	87.45	95.13	96.78	75.78		1975	2,090	1,596	1,989	3,632	1,731
	1985	112.01	105.02	114.00	116.04	100.45		1985	4,847	4,125	4,846	4,107	4,384
	1990	127.68	118.28	129.05	128.28	117.38		1990	5,346	4,507	5,282	4,440	4,945
	1995	132.08	119.83	134.40	126.02	122.19		1995	5,982	5,009	5,862	4,901	5,646
2001	131.90	118.34	133.82	124.60	129.29	2001	6,402	5,525	6,342	5,361	6,241		

- N.B.:
- 1) Medical costs include health insurance benefits, patient co-payments, and benefits related to publicly funded medical services. Benefits from health insurance for the elderly are excluded after 1985.
 - 2) Employees health insurance merged into government managed health insurance following the revisions of October 1984. Figures for government employees insurance, corresponding to pre-revision government managed health insurance, are used.
 - 3) National health insurance is the total of municipal and national health insurance cooperatives, but excludes health insurance for the elderly.

Source: Health Service Bureau, Ministry of Health, Labour and Welfare.

9. Sanitation

Figure A-9 Trends in Water Supply Penetration Rate and the Prevalence of Water-borne Infectious Disease



N.B.: The prevalence of water-borne infectious disease is the total of the number of cases of cholera, dysentery, typhoid fever, and paratyphoid. Data exists from 1897, although figures for paratyphoid are uncertain prior to 1910, so figures from 1911 are given.

Source: Water supply penetration rates are taken from "A Century of Modern Water Supplies" Nihon Suido Shinbun Co. (Japan Water Newspaper) Editing Committee eds (1987). Figures for water-borne infectious diseases are from "Infectious Disease Statistics for 1998 and 1999 (January~March)" Statistics and Information Department, Cabinet Secretariat, Ministry of Health and Welfare eds (2000) Health and Welfare Statistics Association.

Table A-24 Water Supply Penetration Rate

Year	Total population (1,000)	Population with water supplies (1,000)	Penetration rate (%)
1890	39,902	193	0.5
1895	41,557	803	1.9
1900	43,847	1,017	2.3
1905	46,620	1,699	3.6
1910	49,184	2,131	4.3
1915	52,752	7,192	13.6
1920	55,391	9,759	17.6
1925	59,179	12,256	20.7
1930	63,872	14,976	23.4
1935	68,662	19,970	29.1
1940	71,400	24,150	33.8
1945	72,200	25,110	34.8
1950	83,200	21,799	26.2
1955	89,496	28,821	32.2
1960	93,419	49,915	53.4
1965	98,275	68,242	69.4
1970	103,720	83,754	80.8
1975	112,279	98,397	87.6
1980	116,860	106,914	91.5
1985	121,005	112,866	93.3
1990	123,557	116,962	94.7
1995	125,424	120,096	95.8
2000	126,901	122,560	96.6

Source: From the Water Supply Division, Health Service Bureau, Ministry of Health, Labour and Welfare.

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<Japanese>

*The references which are available only in Japanese are not listed in this report. For the complete lists of references, please see the Japanese version. The full text of this report in Japanese can be downloaded in PDF format from JICA home page (URL: http://www.jica.go.jp/activities/report/field/200311_01.html).

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