Health Sector Profile

Summary

Indonesia

国別医療協力ファイル　要約　インドネシア

1997

Japan International Cooperation Agency

Medical Cooperation Department

1 Health Policy

1.1 National Health Administration and Plan

1.1.1 National health Administration Organs

The Ministry of Health is responsible for the national health administration. The Ministry is largely divided into a logistical half and a technical half with the technical half consisting of four Directorate Generals (Public Health, Medical service, Communicable Disease and Environmental Sanitation, Food and Drug). Family planning falls under the jurisdiction of the National Family Planning Coordination Committee (BKKBN) responsible for population policy and family planning matters, rather than under the Ministry of Health. BKKBN consists of six divisions, namely, Project Design and Analysis, Training/Development, Family Planning, Family Welfare, General Affairs, and Monitoring.

1.1.2 National Health Plan

A health plan is established and carried out as a part of the Five Year National Development Plan. The major goal of the Sixth National Health Plan (fiscal 1994 - 99), which is currently being implemented, aims to improve the quality and the access to health services in order to improve health status of citizens. The main issues in establishment of the plan are as follows:

- Quality improvement and equitable distribution of health services
- Improvement in nutritional conditions in communities
- Promotion of social participation and the private sector
- Improvement in program management

1.2 Provincial Health Administration and Plan

1.2.1 Provincial Health Administration Organs

(1) Province Level

The Ministry of Health operates a line office (Kanwil) in each of the 27 class-A local governments (special territories, provinces). Moreover, each provincial government operates a provincial health cell (Dinas) which is responsible

for health administration. Until now, each Kanwil has supervised and each provincial health cell has implemented the national health policy, but with recent trends toward decentralization, authority is being transferred from the Kanwil to the Dinas.

(2) District and Municipal

The district and municipal health departments are in charge of medical health programs at the district and municipal levels. Each department consists of five sections (health recovery section, infectious disease control section, environmental sanitation section, community health section and maternal and child health section).

(3) Sub-District

Medical health programs at the sub-district level are the responsibility of Puskesmas. The number of Puskesmas established differs by the size of a sub-district but a minimum of one Puskesmas is established in each sub-district.

(4) Village Level

The main health facility at the village level is a maternity homes called Polindes, the establishment of which has been progressing rapidly in recent years. Other than these homes, village medicine administration offices called Pos-Obat-Desa, which operate without full-time staff, function as simple health clinics in villages where there are no drugstores or pharmacies.

(5) Community Level

Health programs at the community level are conducted by Posyandu (integrated service). The Posyandu provides general health services consisting of maternal and child health, family planning, nutrition, immunizations, and control of diarrhoeal disease with the goal of reducing the infant mortality rate.

1.2.2 Provincial Health Budget

Provincial health care budgets consist of subsidies from the Ministry of Health, provincial government budgets, district government budgets and contributions from the private sector. The provincial health budget per person differs greatly by province with the province of Irian Jaya being highest, exceeding 20,000 rupia, while the province of Lampung is the lowest at 1,962 rupia, less than 10% of the amount of Irian Jaya.

2 Demography

2.1 Population Total, Growth Rate, Distribution by Age

According to a socioeconomic survey (SUSENAS)[1] conducted in 1995, the total population in that year was estimated at about 192,700,000. The average annual population growth rate has been gradually declining, falling from 2.3% (1980 - 85) to 1.8% (1985 - 90) to 1.5% (1990 - 95), but the population continues to increase and is expected to reach the 200 million level during 1997.

As for population by age groups, the under 15 age group accounts for 33.9% of the total population, with the 15 - 64 age group accounting for 61.9%, and the 65 or older age group at 4.2%, showing a "young" population structure with the population skewed toward the younger age groups. The change in age structure over time shows that the ratio of the young age group is on decline. The percentage of the population under age 15 dropped sharply from 40.9% (1980) to 33.9% (1995), and in particular, the percentage in the under five age group decreased from 14.4% to 9.6% during the same period. On the other hand, the percentage of the population in the 65 or above age group has increased slightly from 3.8% (1980) to 4.2% (1995).

In recent years, the urban population is growing at an annual rate of 4.9% (average over 1980 - 95), with the urban population accounting for 35.2% of the population in 1995.

2.1.1 Population Distribution by Region

The population distribution of Indonesia is extremely concentrated. About 60% of the total population is concentrated on Java Island which accounts for only 7% of the total area of the country. The population density of the island has reached 861 people per square kilometer. In particular, the population density of the Capital City Jakarta with a population of 9 million, is more than 15,000 people per square kilometer, the highest among the 27 provinces. This is about the same level of concentration as the 23 wards in Tokyo. On the other hand, the population density of the Irian Jaya province is only 5 per square kilometer, the lowest among the 27 provinces, indicating extreme remoteness.

2.1.2 Fertility

The total fertility rate was 2.85 in 1994, representing a nearly 50% drop from the 5.61 recorded in the 1971 population census.

Analyzed by region, the Java-Bali region has, in general, a lower average total fertility rate of about 2.6. When the total fertility rates of urban and rural

[1] One of important surveys conducted by the Central Statistics Bureau(BPS) to grasp socioeconomic characteristics of the country. Survey items include population, health, birth rate, family spending, crime housing and environment. The sample population of the survey is 25,000 – 100,000 families.

areas are compared, the rural total fertility rate at 3.15 is found to be higher than that of the urban areas, which is 2.31. Moreover, a urban-rural comparison in terms of age group reveals that the urban fertility peaks at ages 25-29 while the rural fertility peaks at ages 20 – 24, considerably younger than that of the urban.

2.1.3 Mortality

The crude mortality rate per 1000 population was estimated to be 18.7 in the 1971 SUSNAS, but the figure rapidly fell in the next 15 years to 9.1 in the 1985 SUSENAS. Since then, the figure has dropped to 7.9 as of the population census of 1990, and is expected to gradually fall to 7.5 in 1997.

3 Epidemiology

3.1 Mortality

In Indonesia, infectious diseases such as tuberculosis, respiratory and diarrhoeal diseases, which have traditionally been the primary causes of death, are beginning to decrease, but chronic degenerative diseases such as heart disease, cirrhosis of the liver, and malignant tumors are on the rise. However, the number of deaths caused by infectious diseases continues to be high and infectious diseases remain a threat. Table3-1 lists the 10 major causes of death.

Table 3-1 10 Major Causes of Death in Indonesia (1992)

1992	Disease
1	Heart Disease
2	Tuberculosis
3	Respiratory Infections
4	Diarrhoeal Disease
5	Other Infectious Diseases
6	Bronchitis, Emphysema, Asthma
7	External Injuries, Food Poisoning, Accidents
8	Digestive Diseases
9	Tumors
10	Malaria

3.2 Morbidity

According to 1992 national hospital statistics, the most common form of disease is intestinal infection, followed by birth complications/miscarriages, injuries/poisoning, lower respiratory tract, stomach and internal organ and peritoneal diseases.

Table 3-2 10 Major Diseases in National Hospitals (1992)

	Disease	Ratio(%)
1	Intestinal Infections	15.1
2	Birth Complication/Miscarriages	12.2
3	External Injuries/Food Poisoning	10.8
4	Lower Respiratory Tract Diseases	5.8
5	Stomach, Internal Organ, Peritoneal Diseases	4.3
6	Tumors	4.0
7	Upper Respiratory Tract Diseases	3.4
8	Tuberculosis	3.2
9	Urinary Tract Diseases	2.9
10	Perinatal Diseases	2.4

3.2.1 Child Health

According to the family health survey (SKRT) of 1992, Acute Respiratory Infection (ARI) accounts for the highest percentage of infant mortality at 40%, followed by diarrhoeal disease at 11%, and newborn tetanus at 10%. The main cause of death for children under five years of age is diarrhea at 23%, followed by acute respiratory infections at 17%, EPI-related diseases at 9% and malaria at 6%.

3.2.2 Maternal Health

There are no national statistics for maternal mortality in Indonesia. According to a survey based on accounts given by families, the maternal mortality rate was estimated to be 360 per 10,000 during 1984 - 88 and 390 per 10,000 during 1989 - 94. These figures are by far the highest among ASEAN nations, and moreover, the fact that there was no improvement during the 10 year period of the survey has caught the attention of the world.

Direct causes of maternal mortality are excessive bleeding, toxemia, infectious disease(septic), and miscarriages/abortions.

3.2.3 Adult Health

According to SPRS (hospital reporting system)[2], the number of patients with adult diseases such as heart disease, tumors and diabetes as a percentage of the total number of patients admitted to domestic hospitals (public and private) is gradually increasing.

3.3 Infectious Diseases

3.3.1 Immunno- Preventable Diseases

The immunization coverage for BCG, DPT, polio and measles is improving each year from a mere 50% in fiscal 1986 to more than 90% in fiscal 1993.

According to data released by the Communicable Disease/Environmental Sanitation Bureau of the Ministry of Health, the number of provinces which have achieved immunization coverage exceeding 90% for DPT and polio and exceeding 80% for measles, the goals of Universal Child Immunization, climbed to 25 out of the 27 provinces, with only the Ache special territory and Irian Jaya province failing to make the grade.

[2] Reporting is required for all the public and private hospitals. Mortality rates and morbidity rates, are estimated from a sample survey (for 10 days every three months) of admitted patients and outpatients of the hospitals thus, do not cover the entire population.

3.3.2 Diarrhoeal Disease

In Indonesia, diarrhoeal disease is the largest cause of death among children under five years of age (see Figure 4.2). According to 1994 IDHS, 3.2% of all children under five in Indonesia had shown symptoms of diarrhoeal disease during the 24 hours prior to the examination.

3.3.3 Acute Respiratory Infection(ARI)

ARI was the largest cause of infant mortality in the SKRT of 1992. ARI is one of the most common diseases among children, and is the number one reason for children's visits to health centers (pusukesmas).

Of all the ARI patients, infants between 12 and 23 months old account for the largest number of patients (14.2% of total number of patients), with the number of patients decreasing with age.

3.3.4 Tuberculosis

Tuberculosis is quite common in Indonesia, perennially ranking high as a cause of death. The total number of tuberculosis patients in 1993 was 576,581, with the number of tuberculosis deaths reaching 1,207. Exacerbating the problem is , the spread of new bacteria strains that show a strong resistance to anti-tuberculosis drugs, likely to be caused by the discontinuation of treatment due to poor accessibility to medical institutions.

3.3.5 Leprosy

The total number of Leprosy patients in 1993 was 48,053, a sharp drop from 125,676 in 1986. The incidence of Leprosy per 10,000[3] decreased by two-thirds from 7.6 to 2.5.

3.3.6 Malaria

In the SKRT of 1992, malaria ranks 10th as a cause of death and is one of the most significant health problems. However, the incidence of malaria varies greatly by region. In particular, on Java Island the incidence of malaria dropped to 1.51 per 1000 in 1992, which is a substantial improvement. Moreover, the incidence in the Northern Sumatra region is also relatively low. On the other hand, the incidence of malaria is generally high for the outer islands, with the incidence rates in East Nusa Tenggara (213.28 per 1000) and Irian Jaya (190.23 per 1000) being strikingly high.

[3] Traditionally, statistics on Leprosy is per 10,000

3.3.7 HIV/AIDS

The number of patients who have AIDS or are HIV positive is growing each year, with the cumulative total of HIV positive patients climbing to 258 between 1987 to October 31, 1994. Distribution by region shows the highest number of patients in the Jakarta special territory, accounting for 33.7% of the total, followed by Irian Jaya Province at 24.8%, Bali Province at 12.8% and the East Java Province at 9.3%. These four regions account for about 80% of the total number of HIV positive patients.

Classification by sex shows that 75.6% of those afflicted are male and 14.0% are female, with the remaining 10.4% unknown. By age, 46.9%, or nearly half, of the patients are in their 20s, followed by 28.7% in their 30s, indicating that the disease is concentrated among the younger generation. hetero Sexual intercourse is the main mode of transmission, representing 57.4% of reported cases, followed by sexual activities among homosexuals and lesbians at 24.4%. Infections caused through blood transfusion etc. are relatively rare, accounting for only 1.6% of known cases.

3.3.8 Other Infectious diseases

(1) Dengue Fever

The number of Dengue Fever patients was normally around 5,000 during 1970s and not much more than 10,000 even during epidemic years, but the number has been increasing since the 1980s, reaching around 20,000 in recent years.

(2) Rabies

Twenty provinces reported cases of rabies in 1993. Examination of a sample consisting of 2,008 animal bite victims in these 20 provinces revealed that 56% of the sample were infected by the disease.

3.4 Non-communicable Diseases and Injuries

3.4.1 Malnutrition

Recently, the nutritional condition of children under five years of age is improving and the ratio of underweight children (from average to serious cases) dropped from 51% in 1986 to 39% in 1993 according to the data released by the Directorate of Nutrition bureau of the Ministry of Health. However, these figures are still high compared to other nations.

3.4.2 Chronic degenerative Disease

The number of heart disease, tumor and diabetes patients as a percentage of the total hospitalized patients in 1992 were respectively 2.3%, 4.0% and 1.1%. The share of these chronic degenerative disease has tended to increase, though only slightly, during the five years from 1988 to 1992.

3.4.3 Mental Disorder

The ratio of psychiatric patients to the total hospitalized patients in 1993 was 2.1%. Though slight fluctuation has been seen since 1989, the figures have remained at around 2%.

3.4.4 Injuries and Accidents

The ratio of external injury patients to the total number of hospitalized patients in 1993 was 10.7%. The number of people injured in traffic accidents was about 34,500, of which about 10,000 of whom died.

3.4.5 Food Poisoning

There were about 3,900 cases of food poisoning in 1992, with four resulting in death.

4 Health Programs and Measures

4.1 Primary Health Care (PHC)

The main organization for PHC in Indonesia is Posyandu (integrated service post), a health service based in villages. Nationwide development of Posyandu was carried out as a joint project of the Ministry of Home Affairs, the Ministry of Health and BKKBN during the Fourth Five Year Health Plan period (1984 - 88). The number of Posyandu increased from about 25,000 in 1985 to about 250,000 in 1993, with average number of Posyandu per village reaching 3.72 Posyandu provides services such as growth monitoring, immunizations and family planning, which were previously offered separately through various organizations.

Posyandu is administered by staff dispatched from health centers (one of which is either an immunization specialist, a nurse or a midwife) with the cooperation of health volunteer (Kader) groups organized by each village.

4.2 Expanded Program on Immunization

The goal established in the Sixth Five-Year Plan is to raise immunization rates for various diseases including newborn tetanus, polio, diphtheria, pertussis, measles and hepatitis-B. With the enhancement of the immunization program, the eradication of newborn tetanus, and an 80 - 90% reduction in morbidity rates for polio, diphtheria and measles is expected soon.

4.3 Nutrition

Improvement of community nutrition conditions is one of the most important issues in the Second Long-Term Health Plan. The purpose of the program is not only to reduce the rate of malnutrition but also to improve the intellectual capabilities and labor productivity of the citizens through improvement in nutrition. The four major activities of the program are as follows;

- Community nutrition education
- Family nutrition improvement program (UPGK)
- Organized nutrition improvement campaign
- Enhancement of food nutrition monitoring system

4.4 Maternal and Child Health(MCH)

Maternal and child health care measures, particularly a reduction in mortality rates of expectant mothers is considered the most urgent issue in the

Sixth Five-Year Development Plan (fiscal 1994 - 98), with the goal being a substantial reduction in the number of deaths of mothers to 225 per 100,000 live births (1993 estimate is 425) by the end of the plan.

The "one village, one midwife" plan was started in the Fifth Five-Year Plan (fiscal 1989 - 93). One of the goals of the plan was to establish a maternity homes with a full time midwife for each village in order to improve geographical accessibility to midwifes and to enhance prenatal and neonatal health care.

4.5 Family Planning

An active population policy is being promoted mainly through around BKKBN, the organization responsible for formulating the family planning program, with the cooperation of the Ministry of Health. Basically, the program is divided into (1) carrying out promotional activities, and (2) providing services related to family planning.

4.6 Malaria Control

One goal of the Sixth Five-Year Health Plan is to reduce the morbidity rate of malaria to 0.1 per 1,000 population in the Java-Bali region (1993 estimate is 1.0) and to 2.2 per 1,000 in other regions (1993 estimate is 40.0). To accomplish this goal, the Plan encourages the use of mosquito nets, fumigation of residences and biological control measures (use of mosquito larva eating fish).

4.7 HIV/AIDS Control

Indonesia established a National AIDS Strategy in 1994. The content of the Strategy is basically in line with guidelines set by WHO, with major emphasis on disseminating AIDS related information and establishing a safe blood supply system.

4.8 Measures against Diarrhoeal Diseases

One goal that has been set is to reduce the mortality due to diarrhoeal disease in infants and children under five years of age to three per 1,000 from the current four per 1,000. A goal has also been set to reduce the incidence rate of diarrhoeal disease to 280 per 1,000 from the current 330 per 1,000. In order to accomplish these goals, the rate of use of oral rehydration therapy (ORT) will be raised to 80%.

4.9 TB control

Based on the tuberculosis elimination strategy established by WHO, Indonesia is making efforts to detect and properly treat tuberculosis carriers. A

goal has been set to improve the recovery rate to 85% and to replace monocular microscopes used for diagnosis in the past with binocular microscopes.

4.10 Other Countermeasures

4.10.1 Traditional Medication Development Program

This is a program designed to promote the establishment of traditional medicines and treatments and to effectively utilize traditional treatment methods in existing health service system.

4.10.2 Safe Water Supply Program

Goals of the program include improving water quality, increasing the supply of safe water which meets hygienic standards, and increasing the availability of tap water. More specifically, a goal has been set to increase the percentage of the population which has access to safe water from 50% to 60% in the rural areas and from 80% to 90% in the urbans.

4.10.3 Environmental Sanitation Improvement Program

In the Sixth Five-Year Plan currently being implemented (fiscal 1994 - 98), various concrete goals have been established in order to remove risk factors which are harmful to health through improvements in public sanitation and housing conditions.

5 Health Service Provision

5.1 Health Care Facilities

The main medical facilities in Indonesia are public and private hospitals, and Puskesmas (health centers) for people in rural areas and for low income earners in urban areas.

The total number of hospitals in 1995 was 1,062, of which 850 were general hospitals, 49 were psychiatric hospitals and 163 were specialized hospitals. Moreover, 598 were public hospitals while 464 were privately owned hospitals.

As for the number of hospital beds, there were about 79,000 beds in public hospitals, while private hospitals had only about 39,000 beds, slightly more than half that of public hospitals.

5.1.1 Public Sector

Public hospitals are classified into 1) hospitals directly operated by the Ministry of Health (national hospitals), 2) provincial hospitals, 3) hospitals operated by districts and municipalities, 4) military hospitals and 5) State-owned corporation hospitals. Of the 598 public hospitals, 289 hospitals are operated by districts municipalitues and 112 are military hospitals. The Ministry of Health, provinces and state-pwned corporations each operate around 60 - 70.

5.1.2 Private Sector, Missionaries and NGOs

The total number of private hospitals was 420 in 1993, of which 157 (37%) were operated by religious groups, 251 (60%) were hospitals incorporated under social insurance programs, and 12 (3%) were private hospitals.

5.2 Logistics

5.2.1 Drug Supply

The total value of pharmaceutical production in Indonesia was 875 million dollars in 1992, or a mere 5 dollars worth of consumption per individual, the lowest amount among the five ASEAN nations.

There was a total of 224 pharmaceutical manufacturers in Indonesia as of fiscal 1993.

The Indonesian government is pushing for nationalization of pharmaceutical production, and importation of medicines is prohibited with the exception of drugs for which domestic production is currently impossible.

The number of registered pharmaceutical products in Indonesia reached 20,021 in fiscal 1993.

Marketing of pharmaceutical products is channeled out through 1,271 wholesalers, 3,868 pharmacies and 4,821 government approved drugstores nationwide.

5.2.2 Quality Control

Methods of quality testing and control and standards of pharmaceutical products as well as their ingredients are stipulated by Indonesia Pharmacopeia.

Quality control of pharmaceutical products at the national level is conducted by the National Drug and Food Quality Control Laboratory(classified as type A) under the jurisdiction of the Directorate General of Drug and Food Control of the Ministry of Health, with quality control at the provincial level being the responsibility of provincial quality control laboratories.

5.2.3 Medical Supplies

Supplies of inexpensive disposable medical products such as disinfectants and hypodermic needles which are needed in large quantities, are not enough in Health centers. The shortage of disinfecting alcohol for immunizations is becoming a serious problem.

5.3 Utilization of Health Services

5.3.1 User's Perspective on Utilization

The bed occupancy rate for private hospitals increased from 51.9% in 1989 to 57.4% in 1995, but the bed occupancy rate for most public hospitals is either leveling off or decreasing.

Daily visitors to Puskesmas increased from 43.5 in 1990 to 50.3 in 1991, but the number of visitors to Puskesmas continues to be at a very low level.

5.3.2 Traditional Medicine

In Indonesia, a natural drug mix called Jamu is widely used. Jamu is sold by pharmaceutical companies, but it is also possible to purchase homemade Jamu from peddlers. There are several kinds of Jamu such as varieties used in beauty enhancement, health promotion and disease treatment.

5.4 Medical and Health Information System

The following systems have been established in Indonesia

- Health documents, library and information service (HELLIS) network
- Health service research (HSR) information system
- Primary health care (PHC) information system
- National population and family planning information network

5.5 Medical Insurance System

The main medical insurance programs in Indonesia are ASTEK for employees of private companies and ASKES for government employees. In addition, there are Dana Sehat, provincial medical funds at the village level, and medical expense exemption program health cards for the poor. However, only 36% of the total population is covered by these programs. The Ministry of Health, facing limited public funds, aims to increase the responsibility of the private sector in sharing the burden of health costs and is making efforts to spread ASTEK and other insurance programs as one means of achieving this goal.

5.6 Emergency Medical Assistance System

5.6.1 Emergency Medical System in Cities

(1) Referral System

The referral system in Indonesia is practically non-functional.

(2) Transport and Communication System

Some ambulances are owned by hospitals while others are operated by the Red Cross, but the number of ambulances is limited and not all ambulances are equipped with sufficient medical equipment to provide emergency first-aid treatment. Most ambulances are used for transporting slightly injured patients and medical staff.

5.6.2 Emergency Medical Policy

Given the problems and the background of these problems described above, the Indonesian government is aiming to establish a far-reaching referral system to improve emergency medical services, the accomplishment of which will lead to the establishment of a nationwide systematic emergency medical network.

5.7 Research Institutions

The major research and development institutions include the Health Laboratory Center (CHL), National Institute of Health Research and Development in Jakarta, National Drug and Food Quality Control Laboratory, Airlangga University's institute Research Laboratory Tropical Disease Research Center, Central Institute for Leprosy Research, Eijkman, Malaria Institute, National Center of Industrial Hygiene, Occupational Health and Safety and Health Services Research and Development Center in East Java.

6 Health Manpower

6.1 Health Staff by Category

The number of medical personnel in general and specialized hospitals in 1995 include 17,255 physicians (including dentists), 65,621 nurses, 9,482 midwives, and 20,992 other paramedics. Among physicians, there are 8,291 (48%) internist, about 7,196 (42%) specialists, numbering about 1,000 less than internist, and 1,768 (10%) dentists.

6.2 Human Resource Development

6.2.1 Training System

(1) Training of Physicians

In order to obtain a general physician's license, a candidate must complete a 6 year curriculum at a medical school.

Physicians who have successfully obtained a general physician license are required to practice two to three years in Puskesmas or public hospitals in outlying areas in order to avoid concentration of physicians in the cities, and to provide physicians in remote areas.

(2) Nurses and midwives

A) SPK (Nursing School)

A three year nursing education course is offered for junior high school graduates. The curriculum covers basic nursing science with only a partial review of maternal and child health care.

B) Academy (Junior College)

A three year nursing education course is offered for high school graduates. About 10% of the graduates of the academies are midwife trainers. Most of the academies are in large cities.

C) Nursing Schools in Universities

A nursing school was founded in Indonesia University in July 1985, thereby launching nursing education in colleges. The required period of study is four years for high school graduates, and two and a half years for academy graduates.

(3) Other Paramedics

Education courses differ depending on the type of paramedic. Requirements for dental assistants and laboratory analysts may be met in high schools. Requirements for sanitation assistants, laboratory staff, dieticians and radiology technicians may be met in the academies (1 - 3 years). Moreover, degrees in pharmacy, nutrition and public health are offered by universities.

6.2.2 Training Institutions

(1) Physician training institutions

Schools of Medicine are established in 17 public universities and 14 private universities.

(2) Nurse and Midwife Training Institutions

There are 260 nurse training schools nationwide. Of these schools, 183 are SPK (129 public and 54 private), 76 are academies (30 public and 46 private), and one is a university offering a degree in nursing (Indonesia University, School of Nursing).

(3) Other paramedic training institutions

There are 181 schools nationwide which train paramedics other than nurses and midwives. Of these, 99 are public schools and 82 are private schools.

7 Environmental and Occupational Health

7.1 Environmental Health and Sanitation

In recent years, improvements have been made in living conditions led by the establishment of a safe water supply system and sanitation facilities, mainly in the cities. On the other hand, rural areas, where 65% of the total population resides, still do not have sufficient social infrastructure, and the urban-rural gap is widening.

7.1.1 Potable Water

The percentage of families using water from pipes and from pumps is increasing, reaching 28% in 1995. However, there is a large gap between cities and farming villages, with a 56.5% availability rate for pipe and pump water in the cities but only 13.0% rate in rural areas.

Ministry of Public Works has set a goal to increase the population with access to drinking water supplied individually or publicly by 22 million in the cities and by 16.5 million in rural areas.

7.1.2 Latrine

According to welfare statistics from 1995, 46.8% of all families have their own toilet, 13.6% use a shared toilet (with certain other families), 10.1% use public toilets (sharing with an unspecified number of families), and 29.5% have other means. In the cities, 62.4% of the families own their own toilet, but only 38.5% own their own toilet in villages.

7.1.3 Housing Conditions

The most common roofing material is tile.

About 76% of houses nationwide use brick, tile or wood as flooring material.

In the cities, fully 85.6% of the homes use electricity for lighting, while 68.2% of homes in rural areas are still using oil lamp for lighting.

7.1.4 Road Conditions

Roads in Indonesia account for 87% of passenger transportation and 53% of cargo transportation (1990), playing an important role in the transportation sector.

7.1.5 Pollution

(1) Water Pollution Control

The river water quality improvement program has been promoted since 1989, and includes water quality monitoring of major rivers and on-site inspection of plants using rivers.

(2) Air Pollution Control

The Board for Control of Environmental Impact (BAPEDAL) established the Blue Sky Program in 1992 with the goal of reducing air pollution levels, and is also making an effort to reduce by half the amount of pollutants emitted from automobiles in cities and to reduce the volume of gases emitted from cement and steel plants.

(3) Hazardous Waste Control

Since 1994 the government has officially regulated the processing, transporting and importing of hazardous waste material.

(4) Analysis of Environmental Impact (AMDAL)

An Analysis of environmental Impact called AMDAL is required of businesses in the plant/energy field (mining districts, power generation and transmission facilities), the health field (Class A hospitals, other hospitals, basic pharmaceutical manufacturing facilities, etc.) and public works (construction of dams, irrigation systems and river-related projects).

7.2 Occupational Health

With the advancement of industrialization, problems relating to mental stress are increasing in addition to labor-related disasters such as injuries from machine tools and poisoning from chemical materials. This has prompted the Ministry of Health to implement the following two programs.

- Occupational hygiene Program
- Industrial hygiene monitoring Program

8 International Cooperation in Health

8.1 Cooperation with Donors

8.1.1 International Organizations

(1) AsDB

In the health field, the bulk of loans is given to the "Health and Population Project." In addition, small-scale grants are given to nutrition improvement projects.

(2) UNDP

In the health field, grants are given to a wide variety of projects which are related to primary health care, development of human resources and enhancement of nutrition. Moreover, UNDP supports the government's Health Planning.

(3) UNICEF

UNICEF is implementing Master Plan (1995 - 2000) as a comprehensive country program to support the government, Sixth Five-Year Plan. The primary goal of the Master Plan is to reduce the infant mortality rate and maternal mortality rate.

(4) WHO

WHO conducts research to assist in the formulation of policies, suppliers program enhancement funds, and supports human resource development.

(5) IBRD (The International Bank for Reconstruction and Development)

In addition to providing loans for population policies, support is given for improvement of water and sanitary conditions for low income communities.

8.1.2 Bilateral Support

(1) Germany

Germany provides loans for community health programs including HIV/AIDS control.

(2) France

France provides loans for improvement of hospital equipment.

(3) Austria

Nearly 100% of assistance by Austria consist of loans for upgrading hospital equipment.

(4) Australia

Australia is carrying out various projects mainly in the eastern regions of Indonesia.

(5) USA (USAID)

USAID has been providing assistance mainly to maternal and child health, enhancement of public health research and to health sector financing.

8.1.3 Non-Governmental Organizations

There are more than 3,700 NGOs currently engaged in activities in Indonesia, with the number of foreign NGOs at 65 (U.S.A. 24, Germany 11, Netherlands 9, Australia 6, Japan 4, Canada 3, Belgium 2, France 1 and Sweden 1).

8.2 Cooperation by Japan

Indonesia is regarded by Japan as one of the most important nations for development assistance because of its close ties with Japan, it's economic and geographic importance for Japan, and development needs. Indonesia ranks second in the world for the amount of Japan's bilateral ODA provided in 1995 (892 million U.S. dollars). Loan assistance is provided for medical equipment and family planning (domestic production of condoms) among others, while grants are being provided for physical infrastructure such as four hospital improvement projects and four equipment supply projects as well as for the Malaria Control Program and the Health Center Improvement Program. Moreover, technical assistance is being provided for projects such as the South Sulawesi Regional Health Project.

JICA