HEALTH IN TRANSITION IN MALAYSIA

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Present Health Status

Malaysia is a federation of thirteen States and a Federal Territory which consists of Peninsular Malaysia and Sabah and Sarawak on the Island of Borneo. Sabah and Sarawak are separated from Peninsular Malaysia by the South China Sea. We have a population of over 17 million, with an annual growth rate of 2.5 percent.

Health is a federal responsibility, and treatment is provided free for all those who cannot afford to pay. Life expectancy is now around 70 years. Maternal mortality, from 1976 to 1988, dropped from 0.78 to 0.26. Infant mortality dropped from 30.7 to 14.05.

The following are some goals for improvement of health service indicators. The target for hospital beds is 2 per 1,000, but it is now 1.34 per 1,000. Our target for the rural clinic to rural population ratio has been between 1 per 3,000 and 1 per 4,000. Our new target is 1 per 2,000. It is now 1 per 5,000. Our target for doctors is 1 per 2,000, but at present it is 1 per 2,700.

Per capita GNP is now M $ 5,477. This is a bit over US $ 2,000. The Ministry of Health budget is 1.4 percent of the GNP. The Ministry of Health is responsible for about 53 percent of the total health expenditures of the country.

Morbidity and mortality patterns are changing, showing a changing mixture of communicable diseases and noncommunicable diseases. Now cardiovascular diseases, cancer, and accidents are coming to the forefront.

Primary Health Care System

Health care is provided by the public and private sectors. The private

sector provides mainly curative care and is concentrated in the urban areas. It consists mainly of individually-owned or group practices. The number of private hospitals offering specialist care is increasing, but it is still very limited. 86 percent of our hospitals are in the public sector.

In the public sector, the Ministry of Health is the main agency, providing a comprehensive range of promotive, preventive, curative, and rehabilitative services. Health services are also provided by the Ministries of Defense, Home Affairs, Education, and Local Governments.

The Ministry of Health focuses attention on and gives priority to the provision of basic health services to the rural population, in addition to the hospitals providing secondary and tertiary care. These services are delivered through a network of facilities of increasing size and complexity.

The rural health service has a two-tier system comprised of rural clinics, which are run by paramedical staff, and health centers, which are run by professional doctors and paramedics.

Rural health services are provided not only by the centers, but also by mobile teams. They travel by land, sea and air. We have a helicopter and permanent charter to provide these services.

At present, 96 percent of the population has access to primary health care facilities provided by the Ministry of Health. 74 percent of the population are within three kilometers of one of these health facilities, and 89 percent are within five kilometers.

Hospitals

In Malaysia there is a hierarchy of hospitals, ranging from small district hospitals to sophisticated general hospitals. A system of referrals ensures that patients in rural health centers have access to general hospitals if needed.

Community Involvement

Community involvement is the main pillar of primary health care. This includes individuals as well as voluntary organizations. I believe that compared to many other countries, voluntary work is not intensively

implemented in our country. But there is some in Sarawak, where we have village health promoters. In Sabah, school teachers are involved in Malaria control. Our most extensive volunteer program is in rural water supply and sanitation, with labor being shared by the community.

At the grassroots level, an integrated approach is being attempted with officers from various sectors collaborating to assist the people in the rural areas.

Emerging Issues

Disease patterns in Malaysia are changing. At present, non-communicable diseases dominate but this will very likely change, creating implications for future planning. Perhaps, soon AIDS will be a problem for us as with other countries.

The high expectations of the public is a major issue. The rising demands for specialist care must be met. CT scans are now available all over the country. We have to have diagnosis units in both general hospitals and in some district hospitals, for example. This is going to be major issue for us. There are major implications in terms of upgrading our facilities and the need for skilled manpower to run these facilities. As a result of these expectations, we are planning many new hospitals under the Fifth National Plan, which ends this year. I am sure we will have more under the Sixth Malaysian Plan.

When we look at our needs for our country, we notice one major need is for doctors who are specialists. In 1988, we had 371 specialists. Our requirement for 1990, based on the workload, is 1,877 doctors in the Ministry of Health. Obviously, this is a major issue. We have specialists besides those in the Ministry of Health, but a lot of them are in the private sector.

New Technology

As health care technology advances, with new or improved methods for prevention, diagnosis, treatment, and rehabilitation, the costs for treatment will escalate, particularly for high technology medicine. The potential for new

technology must be balanced against available resources and its social and ethical impact. This is important for us, as resources for health care are limited. Expertise in health and in technology assessment must be developed to continuously monitor and assess technology from medical and social viewpoints, and then to choose and appropriately use technology based on its acceptability, benefits, safety, equity, and economic and social consequences.

Environmental Sanitation

The Ministry of Health is responsible for rural environmental sanitation and water supply, mainly because the other government agencies which are supposed to provide these services are currently unable to do so. The other agencies are, however, providing them in the urban areas. The Ministry of Health plays a supportive and advisory role in the National Drinking Water Quality Monitoring and Surveillance Program. It ensures safe drinking water through routine water analysis, sanitation surveys and inspections carried out together with the relevant water authorities. Our main problem with this program is the capacity of the Chemistry Department to handle the workload. We need to look at the possible use of field kits to monitor water quality both in the urban and rural areas.

In the urban sanitation program, the Ministry of Health assists in formulating plans and designs for proposed sewerage and sanitation programs. At present, only 5.3 percent of the population is provided with a central sewerage system. Although 19 towns already have master plans, we have problems in terms of implementation because of the enormous cost.

Financing

As health care costs rise, there is a need to utilize resources optimally and ensure that development efforts in the different sectors complement each other. Towards this end, the Government is looking at the possibility of an integrated health plan and considering how to finance the cost.

At present, our total health expenditure is 3.2 percent of the GNP, of which public sector expenditure is 76.6 percent, or 2.45 percent of the GNP, whereas private sector spending is 23.4 percent, or 0.75 percent of the

GNP.

In the health financing study of 1984/85, it was projected that health expenditure will be 6 percent of the GNP by the year 2000. Obviously, we will have to look at how to fund this, since the government may not be able to fund it at the level that it has been planning. We need to look at alternative means of financing health care costs, and also to ensure that not only curative care is well funded, but preventive and promotive programs are equally well funded.

At present, when we look at our total health expenditure, 37.7 percent is spent on primary health care, 50.3 percent on secondary care and 4.3 percent on tertiary care.

REMARKS

Mr. Basudev Pradhan
Acting Secretary,
Ministry of Health,
Nepal

We have seen that no two countries have the same problems. I think the health status of a country depends on many factors. It depends upon, first, the level of economic development, and second, on the proportion of population who are educated. It also depends on geographical or topographical situation of the country.

An economically developed country may have problems with its own stagnant and aging population or drug problems, for example. In Nepal, where two-thirds of the land is covered by mountains and hills, where transportation and communication, as well as socio-economic conditions, are very poor, a large problem is meeting even the basic minimum health needs of our population.

I would like to cite some of the difficulties we are facing in attaining the goal of "Health for All by 2000". Nepal has an area of 147,000 square kilometers, two-thirds of which is covered by hills and mountains. The population is 18 million people and is increasing at the rate of 2.6 percent per year. More than 90 percent of the people live in villages. To serve them, there are 101 hospitals, 10 health centers, and 816 health posts.

Because the land is mountainous, the people are scattered in small groups, making it difficult to deliver the services. We also have staffing problems, because of an acute shortage of technical manpower. Even where the manpower is available, they rarely go to the villages. This is one of the basic problems of management.

Infrastructure is also very limited. Out of 816 health posts, only 30 percent have infrastructure. The rest are working in small rented houses.

Basic health service still cannot be achieved for most of our people. The population growth rate is one of the main stumbling blocks in our own health delivery.

Dr. Chee Yam Cheng
Director (Medical and Nursing Manpower),
Hospital Division,
Ministry of Health,
Shingapore

All of us face the continuing challenge of nationwide communicable disease control. Singapore began fighting the problem about fifty years ago. Today we are maintaining tight control over these communicable diseases by our nationwide immunization program, which covers tuberculosis, diphtheria, tetanus, whooping cough, polio, measles, mumps, and rubella. In 1987 we introduced hepatitis B immunization. I strongly believe in nationwide immunization.

Today in Singapore, the major mortality causes are degenerative conditions like heart diseases, cancer, and strokes.

Previous speakers have also mentioned accidents as a major mortality cause, specifically, road traffic accidents. To treat and attack this problem in Singapore, we enforce laws dealing with safety belt use and safe driving. We also monitor the road worthiness of cars. Cars beyond a certain age go for yearly checks ; those beyond ten years old pay an excessive tax. We also have legislation regarding alcohol abuse by drivers.

Regarding health financing, which will be a problem for nations worldwide, Malaysia has highlighted the problem. Public expectations of health care are always high and continue to rise. But who pays the health bill ?

In Singapore we have two schemes. One is called "Medisave" and the other is called "Medishield". For Medisave, all employees contribute to a central providence fund. To this Medisave account, they contribute 6 percent of their monthly wage to a limit of 15 Singapore dollars at any one time. This money is used for hospitalization costs. When they have a hospital bill, it shows them the actual amount incurred as well as the amount of subsidy given by the Government. Depending on the class the subsidy will vary. Poor patients will have free or very heavily subsidized health care.

To complement Medisave is the low cost insurance plan called "Medishield", which will be implemented in July this year. It is meant to cover the cost of treatment of major catastrophic kidney dialysis, and treatment of chemotherapy and radiotherapy for cancer.

As countries continue to industrialize, there is a need to maintain a tight control over the use of technology in factories. Now, in undergraduate training for medical students, there is a Department of Community Occupational and Family Medicine, which introduces medical students to concepts of occupational medicine. The Industrial Health Department is under the Ministry of Labor, and they have a tight control on the preventive and promotive aspects of industrial health. Their main concern is actually noise-induced pollution from machinery and robots. There is also an Anti-Pollution Unit.

Singapore has done exceptionally well in population control—— actually, too well. Now we face declining fertility rates, manpower shortages, and a fast-aging population. Two-child families were the norm until recently; now it is one. More children are becoming obese and myopic.

Health education will be used to encourage change of some lifestyle patterns. In Singapore, 87 percent of our population is literate, and there is one TV for every five people. So, through the mass media, we hope to educate the population.

In 1987, Singapore received WHO's award for health education and primary health care for the promotion of healthy lifestyles in Singapore.

Today our goal is to make Singapore a nation free of cigarette smokers. Singapore still has a long way to go in coming up to the standards of health care in Japan and other developed countries. We look forward to increased international cooperation to help us face these new challenges and issues.

DISCUSSION

In the Discussion the participants mentioned other problems : the indiscriminate use of modern technology and the difficulty of maintaining modern equipment, irresponsible use of pharmaceutical drugs, lack of accurate data, etc. As for emerging First World health problems, it was suggested that developing countries need suport for research to find solutions appropriate for each specific country. In addition, intersectoral collaboration at the highest levels of government and better public/private sector cooperation are necessary.

PART 2
HUMAN RESOURCES DEVELOPMENT IN HEALTH

Cochaired by: Dr. Kenzo Kiikuni
Professor,
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Secretary for Health,
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HUMAN RESOURCE DEVELOPMENT IN HEALTH —— AN OVERVIEW

Dr. Sang Tae Han
Regional Director,
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I am particularly gratified to note the importance given to developing human resources for health, an area which is one of the highest priorities in the Western Pacific Region and which I am sure is also of vital importance to the other Regions of the World Health Organization.

As has been pointed out in several recent forums, including the discussions this morning, despite substantial achievement in health during the past decade, there remain many obstacles to the achievement of the health-for-all goals which we have collectively set for ourselves for the year 2000. In addition, it should be pointed out that even if we do achieve these goals, there will continue to be new challenges and threats to health as we enter the 21st century. Thus, in order to deal with the health problems of tomorrow, the health systems of today will need to be significantly restructured. This is true for the developed and the developing countries alike.

Among the different categories of health infrastructure, the health workforce is the one in which change will have the greatest impact on the health status of people and communities. If health personnel are appropriately educated and effectively managed, all the other components of the health infrastructure will be efficiently utilized. Conversely, you can have the best physical facilities, equipment and technologies in the world and they will all be useless without well-trained and adequately- motivated personnel to operate them.

This is the context in which I propose to approach my assignment this afternoon. I will begin by outlining what I believe to be the major Human resources problems in health. I shall then propose some guiding

principles to follow in dealing with these problems. Finally I will mention some areas in which I think action should be taken immediately, both at the national level and through international cooperation. I hope that this approach will provide us with an appropriate background for discussing today's presentations from Indonesia, the South Pacific and Malaysia.

Human Resources Problems in Health

The human resources problems which I will review today should be seen in relation to a number of measures that have already been taken to deal with them. Many of these measures followed the principles expressed in the Tokyo Declaration of 1985 on Health Manpower for 21st century. Perhaps the most useful functions of this afternoon's discussion will to be assess the existing situation in order to determine what more needs to be done to ensure that the health workforce in all countries can handle health problems of tomorrow. Some communicable diseases, such as poliomyelitis and leprosy, may come under control, but others, like malaria, may persist, and still others, like AIDS, will pose new threats. Even now, the diseases associated with behavior and life-styles, as well as environmental factors, are beginning to complicate the picture of health in most countries. Obviously, in the developing countries with their severely limited resources, these problems will be more difficult to solve. It is therefore in these countries, therefore, that international cooperation can have the greatest positive effect.

Almost all countries in Asia and the Pacific, both developed and developing, have health personnel shortages and distribution problems. There are countries, such as Papua New Guinea in our Region and Bhutan and Nepal in the South-East Region, where there is less than one physician per ten thousand people. In many countries, the majority of health professionals are concentrated in the cities, where a minority of the population lives, leaving only a few people, often poorly trained and equipped, to look after the health of large rural populations. Among the different categories of personnel there are such imbalances as a shortage of nurses coexisting with a surplus of physicians, too many specialists and not enough general practitioners, too many hospital and clinic-based personnel and not enough community and field

staff.

The problem of shortages and poor distribution is very closely linked to that of low quality and inappropriate skills, which is especially severe in poorer countries. Many factors contribute to this problem, but perhaps the most important one is the fact that the health infrastructures are predominantly based on Western models which may not be very adaptable to the situation of developing countries. These models call for health personnel trained according to metropolitan academic norms which are very difficult to meet in countries with poorly developed educational systems.

Whatever may be the reason, the reality is that in many countries situations arise where choices have to be made between unnecessary service or no service at all. An example is the X-ray department of a small island hospital: a radiologist, fully trained in accordance with present certification requirements would be quite over-qualified for such a situation, but there is no doctor there who has the appropriate radiological skills.

The Tokyo Conference of 1985 recognized the need for close coordination between all those who participate in the development of human resources for health. Most of the discussions and recommendations at that time were focused on the interaction between the academic training institutions and the health systems which used their products. But now it is necessary to take a look at how other elements, such as professional groups, including those organized to protect the interest of their members, may be further involved in providing adequate and appropriate human resources for health services. The different professions and specialist organizations should be encouraged to review their training programs and cover pathways in the light of integrated, multidisciplinary and multiprofessional approaches. This is because health problems now and in the future can only be solved when such approaches are used.

Guiding Principles

In light of this analysis, I would like now to propose some guiding principles to improve the effectiveness of international cooperation in the development of human resources for health. These principles are based on

the three mutually reinforcing concepts of integration, relevance and innovation.

In this context, **integration** includes cooperation, coordination, multidisciplinary and multiprofessional approaches, and the humanization of interests to achieve common goals. All the elements that are involved in the planning, production, and utilization of human resources for health must work together in a concerted effort. The concern for academic quality, for example, must be balanced by the need to ensure availability of services as well as the requirement of maintaining professional standards. The narrow interests of health professions – such as medicine, nursing, and dentistry – should not only be reconciled with each other but should be made subservient to the real health needs of individuals and communities. In sum, academic excellence, professional identity, and administrative efficiency can do nothing to improve anyone's health if they are seen as ends in themselves and in isolation from each other. To give meaning to these concepts educational institutions, professional groups, and health agencies should identify common objectives and design common programs to achieve them. This is the only way to ensure that a country's health personnel can make the system work and provide the services people need.

Relevance means that the whole process of human resource development in health must be based on the specific needs of countries and communities. This does not mean that professional academic qualifications are of nonvalue. On the contrary, in a rapidly changing world, thorough knowledge and the ability to master complex data are often indispensable. What it does mean, however, is that these qualifications must also take into account the specific skills and attributes that are needed to solve the dominant health problems facing communities. For example, managerial skills and the ability to work in teams and with communities must be given the same emphasis as biomedical knowledge and understanding. At a time when life-styles and behavior are becoming important health determinants, health promotion has become an urgent necessity, and therefore health personnel need well-developed communication skills.

Lastly, **innovation** must be the hallmark of all actions to promote the

development of human resources for health to meet future needs. To attain relevance while maintaining quality, new methods of teaching and training must be adopted. To achieve integration while respecting professional identities, new relationships and ways of working together must be established. To maintain the momentum of reorienting health workers to current health needs, new ways of thinking must be encouraged in health agencies, academic institutions and professional groups. For example, career paths in health agencies could be reviewed to allow cross-overs through professional lines at levels where these naturally intersect. In this way, such current problems as the overlapping responsibilities of nurse practitioners and medical assistants can be solved. Academic institutions will then have to adjust their training programs or create new ones to accommodate such changes. Likewise, the professions will need to revise their qualification standards to allow for this restructuring of career paths.

Action to be Taken Immediately

Since 1985, much has been accomplished in the reorientation of the undergraduate and basic curricula of most categories of health workers. Much remains to be done, but there are many reasons to be optimistic that in time most of the urgently needed changes will occur. The presentations this afternoon will contribute to change in the basic training of health professionals.

In addition to these efforts, however, it is important to initiate changes in the other levels of education and training for health professionals. The products of the reoriented basic programs will only come into the health workforce and begin exerting their influence ten or fifteen years from now. In the meantime the existing workforce must be brought into line with that new thinking, so that the process of meeting the emerging needs of the future can begin. Thus postgraduate and continuing education, as part of a continuum in health professional education, must also be included in the agenda for change in human resources development. If we are to be ready for the twenty-first century, we must train health professionals for it now.

For this purpose, later this week in Seoul, Korea, WHO will conduct

an intercountry meeting on Postgraduate and Continuing Medical Education for Primary Health Care. Following this, there will be a workshop on continuing medical education at the Regional Training Center in Sydney, Australia. These are initial attempts to review present programs on clinical specialization and technological updating for physicians within the context of community needs and evolving new trends in health systems development. In this light, this symposium today may consider recommending the design and implementation of programs aimed at refocusing health technology and the specialization it generates on the people who need care and the communities within which they receive such care. This would make it possible to envision tertiary medical care facilities which are closely linked to and supportive of primary health care.

Summary

In summary, I believe that to be ready for the future, the health sector needs to develop appropriate new infrastructures, and the most important of these is the health workforce. International cooperation in health will be most effective when it deals with human resources problems of quality and quantity, appropriateness and development. In contrast to the construction of health facilities, it is not possible to place commemorative plaques on projects for human resource development. But I think everyone agrees, that in the long run, investments in human resources pay greater dividends that anything else in terms of people's health, and this, after all, is our goal. I know that the Government of Japan realizes this and that is why training and fellowship grants are invariably incorporated into many of its international cooperation projects. In the context of today's discussion, I hope that this consideration for the development of health personnel will not only continue but expand into a priority concern. With policies based on integration, relevance, and innovation, it will be possible to develop the kind of health work-force that is needed not just now but for the foreseeable future in all countries.

HUMAN RESOURCE DEVELOPMENT IN HEALTH —— INDONESIA

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Health Services Infrastructure

In Indonesia there are hospitals at the central level in the capital of the country and also one in each province. (We have 27 provinces in Indonesia and 350 districts.) So in those cities we have hospitals, and below the district level we have health centers at the sub-district level. Currently we have about 5,500 health centers all over the country.

Below the health center, we have sub-centers staffed by paramedics. At the village level we currently have about 225,000 integrated health posts, or yen yandu, which provide basic services for mothers and children, like immunizations, family planning, disease control, and rehabilitation.

Another part of the infrastructure includes support organizations, which start at the Central Ministry of Health Office in Jakarta. We also have provincial and district health offices district. These are the administrative parts of the infrastructure.

Manpower Problems

Despite success in disseminating health services, we have serious manpower problems. First is our shortage of nurses. It is interesting that in Indonesia we have three times as many doctors as nurses. The second problem is the unequal distribution of trained personnel.

At first we thought that most of the doctors were concentrated on the island of Java. When we did a calculation using population as the adjustment factor, however, we found that Java is still experiencing a shortage of manpower when compared to other places in the country.

Our allocation and distribution of manpower among health service facilities has been based on a normative standard for each specific facility and not on actual workload or size of facility. This has created some problems.

The third problem is low productivity. Even though we have distributed doctors — one doctor per health center — throughout the country, the occupation rate of hospitals is still low. Nationwide, only about 45 to 60 percent of the beds are occupied. Also, health center utilization is still very low. On average, only people living within five kilometers of a center use it. So productivity is one of the main problems in human resources development for health in Indonesia.

The fourth problem is the weak capacity of administrative support at the district level. Like many other countries, we have focused too much on those people who can provide direct services in hospitals, health centers, or health care at the village level, and neglected, to an extent, the problems of the provincial level and district levels.

Long-term Plan for Manpower Development

So in Indonesia, we need to strengthen district level management so it will be able to support the sub-district health centers.

In 1983, we made long-term goals for manpower for the year 2000. There were three bases used in that long-term plan. One was the service-based approach. We set up normative manpower standards for each of the services — hospitals of Class A, Class B, and Class C, health centers and sub-health centers — for setting manpower requirements. That was the first approach we used.

The second approach used was the population-based approach. We looked at the ratio of population and manpower in other countries to close to some extent the gap between the situation in our country and the situation in other countries.

And the third approach is what we call normative staffing of programs. For example for our malaria control program, we considered the manpower requirements of the malaria program in making projections of the

requirements in the future.

We found that the amount of manpower needed in the future will be quite enormous. By the year 2000 we estimate that we will need half a million new health workers. Based on these projections, we are trying to produce an adequate number of doctors. There are 13 public schools of medicine, and ten private schools which each year produce about 1200 doctors in the country.

In 1984 and 1985, to meet the need for nurses, we started special morning and evening classes at the 250 nursing schools at the high school level throughout the country. In 1987 and 1988, however, we found that we had about 45,000 more nurses than we needed. Economic difficulties after the oil shock had reduced the country's ability to absorb the nurses. For example, prior to 1983 about 80 to 90% of the manpower produced was absorbed by the system, but after the oil crisis the capacity was only 41%.

Needs

First, there is a serious need in Indonesia to strengthen our health policy analysis capacity, and this capacity will lead the country to avoid the kinds of mistakes we have made before. In other words, we should consider in health manpower planning not merely epidemiologic factors, service needs and manpower needs, but also we should consider affordability.

Second, we must strengthen the planning and production capability of our country. This is an area in which we really need international cooperation. How should we include epidemiologic transition projections into health manpower planning? How do we plan for the increasing demand of the population for more sophisticated medical technology? Also, how do we coordinate health manpower planning with the national economic plan? This is the second area in which we should establish cooperation.

The third area is strengthening health manpower at the district level. As I said before we have been over-emphasizing direct official manpower—— hospital staff, health center staff, village health center staff —— but we also need to develop supporting manpower at the central level, official level, and district level.

Our fourth need is for a strong health manpower information system. With 200,000 health workers in 350 districts, such a system is necessary for monitoring development. Strengthening the health information system —— including both software and hardware development —— is essential to aid the decision-maker in the planning, production, and management of health manpower.

MEDICAL TRAINING FOR THE PACIFIC BASIN

Prof. Ian C. Lewis
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Introduction

The Pacific Ocean covers a huge area of the world's surface and surrounds some twenty-one countries, most of which are self-governing. Only two of these countries have populations of more than half a million, and eight have populations of less than twenty thousand. Climate, limited economies, scattered population, distance, and isolation create problems in providing health care. In the past, European explorers, exploiters, and colonists introduced diseases which seriously decreased the population. More recently migration has drained large number of people from some of these countries.

Disease patterns differ considerably in the Pacific. Mortality among the island countries has been studied by Taylor and his crew, who have revealed a spectrum of disease patterns ranging from those which you would expect to find in a developing country to those more typical of a developed country.

Health services should aim at meeting the needs of the whole community, giving everyone ready and easy access to health facilities. For Pacific Island countries this is difficult, since many of them have populations spread over atolls with people congregated in relatively small traditional village communities. Health care cannot be provided by doctors on a continuous basis to very small populations because doctors are often in short supply ; it would also be uneconomical. Yet it is generally recognized that a health professional is most effective when he or she is a respected and accepted member of his or her particular community. Several countries, mostly in the so-called Third World, have been training people from small villages in common disease recognition and management and also in

community health education. The impacts of these people on community health has often been remarkably successful.

Two-tier Training Programme at the Fiji School of Medicine

The Fiji School of Medicine has been providing trained medical personnel to Fiji for a century. About sixty years ago, it became a center for training students from other countries in the South Pacific. Initially, training lasted for three years, producing what were originally called native practitioners, and gradually the course was extended to four, five and finally in 1982 to a six-year course leading to a university degree in medicine.

There has been disquiet about the Fiji School of Medicine for some time. The concern springs from high student drop-out rates, difficulties in recruiting and retaining staff and the small numbers of graduates from the School's various courses not meeting service requirements.

Following initiatives originating from the Manila Office of the World Health Organization in March 1989 and Dr. S. T. Han's personal involvement, the Fiji School of Medicine will shortly become a World Health Organization-sponsored regional training centre with a novel two-tier training programme.

The plan of action calls for a problem-based integrated and community-oriented type of curriculum, and the first tier will involve the training of primary care practitioners. Their training will take three years with preventive aspects of medicine and health promotion being stressed and ending with a primary health qualification. These graduates will all be employed in a supervised and assessed primary care situation for at least one year before selected practitioners are invited back to complete a further three years of more hospital-oriented but still problem-based training to qualify as doctors. Some students coming into this course will be expected to remain at the primary care practitioner level because of their country's health service requirements or because their assessment would indicate that they would be unlikely to be successful in the more taxing medical officer training curriculum. Others may choose to continue as primary care practitioners because that is what they wish to be. This programme is now expected to start in February 1991.

Research Projects for Supporting the Training Programme

To help design the size of the school and the two-tier curriculum, personnel from the School and the Fiji health services are involved in two research projects. Both are well advanced. The first project will seek information on the medical personnel requirements of the Pacific Island countries. The health authorities are being asked to assess their health service requirements. Do they want three-year-trained primary care practitioners who are specifically prepared for work in small and maybe isolated communities or do they want fully-trained doctors? I would expect that they will want both but until the primary care practitioners have demonstrated their competency, the demand for doctors may be greater.

I believe that ultimately the backbone of health care services of most Pacific Islands will be primary care practitioners and that doctors will occupy positions in hospitals and regional centres where their greater skills and depth of understanding can be better utilised. The School will want to know the numbers of primary care practitioners and doctors the regional countries will be requiring so that the student intake may be calculated to meet the expected service demands.

The second project is to prepare disease profiles for each country sending students to the school. These profiles will be compiled from statistics gathered from randomly selected community health centres where the twenty commonest acute conditions and the three to five commonest chronic conditions in each of the recognized age groups will be collected every second month for a year. These figures will be computerized and will give the disorder pattern for that country. The School's curriculum will be based on this information and students will then be able to study the problems which will confront them when they return to work in their own communities.

Postgraduate Education

Though I have spoken of a two-tier system of training, we are also planning a third tier which will take in postgraduate education. Such training is expected to take four years and it will be conducted in the region's major hospitals. We hope to organize a seminar on postgraduate training in

November with representatives from postgraduate education institutions in Australia and New Zealand taking part. It is essential that high standard postgraduate training be established within the Pacific region so that the services of trainees are retained in the region's hospitals, and the loss of successful doctors who stay in the countries where they are trained is at least diminished. It would reduce the dependence on expatriate specialists and teachers who are prominent in the health services and training establishments of the region at present.

Provision of Health Services and Personnel

Finally, in planning for the provision of health services and preparing health personnel to work in these services in the Pacific Basin, there are certain principles which must always be borne in mind :

First, the services must reach the people, and the personnel in the services must understand the needs of the people and how their needs can be met.

Second, the economic resources of the country must be considered in designing health services and in the provision of health personnel.

Third, primary health care must have precedence over secondary care.

Finally, where budgets are small and national economic resources are limited, innovation in health personnel training and in the provision of services should replace traditional views and methods. Developed countries may have little to offer those countries where primary health care has been given top priority.

HUMAN RESOURCE DEVELOPMENT IN HEALTH —— MALAYSIA

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Malaysia

Background

Malaysia is a multiracial country of 17.3 million people, and considerable advancement has been made in the health sector since our independence from Britain in 1957. The general health indices reveal a very significant improvement in the state of health ; for example, life expectancy has increased significantly, from 57 years in 1957 to 70 years in 1985.

The achievement of a higher health status, though not evenly distributed, has come about as a result of rural development, hence an improvement of poverty levels and changing patterns of mortality and morbidity through better primary health care. With development, infectious diseases have now diminished in relative importance as more and more people suffer and die from diseases of stress and degeneration. However, bronchopneumonia and gastroenteritis still remain important causes of infant and toddler deaths.

Manpower Problems

A striking feature of the system of health delivery in Malaysia is the rigid separation of government health services from those rendered by the private sector.

As in most developing countries, the government health services play an important role in the supply of medical and health care. Malaysia has developed a comprehensive rural health system. However, although considerable improvements in health programmes have been made, we have an unequal distribution of doctors. More doctors are working in the private sector than for the government.

Other medical personnel that we have and are training are nurses, midwives, dentists occupational therapists, and so on. Although there are many nurses in training, we are currently facing a shortage of nursing personnel.

Training of health personnel in Malaysia takes place both in universities and in programs sponsored by the Ministry of Health. Training of doctors and dentists is done only at universities. The bulk of allied health personnel courses are non-degree courses. There have recently been proposals to upgrade these courses to degree level but controversies are still raging as to whether a university education is really necessary. There are issues that need to be resolved at the highest policy making level.

Undergraduate Medical Education

Undergraduate medical education (after independence) was started in 1963 with the establishment of the Faculty of Medicine at the University of Malaya, and since then two universities, Universiti Kebangsaan, the National University of Malaysia, and the Universiti Sains have established faculties of medicine. These three universities produce about 400 new medical graduates per year, and about 160 medical graduates per year return from medical schools overseas.

Although the curricula of the three medical schools differ in their approaches towards teaching and learning processes, the duration of the courses and the basic philosophy and goals of the courses are the same. The common goal is to produce doctors who are competent to work in any setting in the country and who are committed to lifelong education. The curricula of the three medical schools is strongly community-oriented, especially towards rural health and primary care medicine. We have started an innovative approach to medical education at the Universiti Sains Malaysia by introducing an integrated problem-based and self-directed learning programme.

Postgraduate Training of Malaysian Doctors

For a long time, post-graduate training of Malaysian doctors was done

overseas, but recently the Government of Malaysia has realized that universities in developing countries are agents for national development. Therefore, ideally, postgraduate medical training and certification should be done by the local universities. This was spearheaded by the National University in 1982.

In the planning and implementation of our postgraduate medical education, we considered the entire continuum of medical education, that is, basic medical education, postgraduate and continuing medical education. Our goal for postgraduate medical education is to prepare doctors who are competent to provide specialized services to meet the health needs of our own country, needs which are within the context of the socio-economic and cultural development of Malaysia. Continuing medical education for established physicians is important to make sure they have up-to-date knowledge and maintain competence in their profession.

A national needs-assessment survey for continuing medical education (CME) was done in 1989 to define broad areas for intervention. Studies are currently being done to determine effective methods for continuing medical education. In November, a national workshop will be held to formulate policy guidelines on continuing medical education and to try out a training module for CME programs which are locally or self-initiated.

Cooperation with Japan

As for the kinds of cooperation that Malaysia needs with Japan, I would categorize them under three headings. In the undergraduate curriculum I think we have a satisfactory situation. We can train enough doctors for our country. But we would like to have a system of exchange so that students from Japan and Malaysia can learn about each other's systems of education and understand each other's problems.

Second, in postgraduate training, we need help in training for certain specialized fields, such as managerial skills in health, training for newer technologies, or collaboration in research. This is not only for doctors but for allied personnel as well. Third, in the areas of continuing medical education, we need assistance in developing communication between the two

countries, such as exchanges of information and development of health informatics.

REMARKS

Mr. Madhu Sudan Dayal
Additional Secretary,
Ministry of Health and Family Welfare,
India

Several speakers have highlighted some very important points relating to human resources development. I would like to talk of a bit about human resources development in general and the development of human resources in health in particular. In looking at human resources development in general, we can say that the human resources of a society are well-developed if the adult working population of that society is working at a high level of intellectual and physical activity and meeting the needs for goods and services in the society and if the people enjoy a state of well-being. A further level of human resources development is reflected in the acceptance of certain social and human values, which are established in early childhood. Therefore, it is essential that during infancy and the preschool years, our children get the most focussed attention.

Dr. Taylor, in his address, referred to his particular concerns relating to pediatric care and health and nutrition during childhood. We have been experimenting with various programs for child development services in India, in which we try to provide a package of health, immunization, supplementary nutrition, nutrition education, and psychosocial stimulation. The main deliverers of these services are two women selected from the local area, one of whom is trained for three to four months in a variety of tasks related to all these fields.

And as several speakers have mentioned, since solutions have to be locally relevant, many of these projects are modified to suit local needs. One point which was referred to by Dr. Taylor and Dr. De Leon is the issue of resources and the effect of the economic situation on the capacity of the nation to provide social services, particularly health services. And it is in this context that the nature of cooperation that comes from a developed

country also becomes very important.

There are certain programs crucially relevant to the health of the people which are affected by scare resources. But those who extend assistance for health or for any area must understand the budgetary processes in developing countries. When assistance is offered for any particular problem, then that country, in order to draw on that assistance, has to make local currency budgetary provisions corresponding to the aid that comes. But when the expenditure is related to a particular project, in order to draw on the foreign aid, the expenditures on other items have to be cut. From that point of view, when we extend cooperation, if we really want that assistance to reach large masses for the improvement of their health, then we may have to provide funds for local currency expenditures. In my own country, during the mid-70s, there was a good program for village health guides. But, because of the demands of other sectors, that program actually got stopped.

In India, however, we are not short of doctors. In fact we have started receiving students from foreign countries for receiving medical education. But there is a great shortage of para-professionals : nurses in hospitals, technicians of all categories, and primary health care workers are all needed.

About research, I would like to make one point only. Our experience shows that a lot of surveys and studies can by carried out by utilizing the available manpower in the local academic institutions, such as medical colleges and schools of social welfare and home economics. We have students and faculties who have a lot of extra time which can be put to use.

Dr. Primitivo D. Chua
Secretary Treasurer, CMAAO
Phillippines

I have the honor to represent the Confederation of Medical Associations in Asia and Oceania (CMAAO) in this Conference. The Confederation was founded in 1956. Presently it is composed of 13 national medical associations in the region.

The Japan Medical Association, represented here by Dr. Mishima, is one of the most supportive and leading members of our Confederation. The CMAAO Confederation meets bi-annually in Congress with the mid-term Council meeting in the interim. Each year we discuss the public health problems most commonly affecting our countries.

Health care and the development of human resources has been a common theme of our Congresses. Some others that we have discussed include medical education, health insurance, the impact of industrialization on health, quality of life, and the effect of smoking on health, all these discussions being an attempt to contribute to the knowledge and skills of doctors and health personnel.

Fifteen years ago, the late Dr. Taro Takemi, who became the President of the World Medical Association, and, I believe, the longest-serving president of the Japan Medical Association, stated his belief at an WMA Assembly in the importance of the allocation of medical resources in the promotion and maintenance of global health care. Today we have the opportunity to view human resources development in health as an important aspect in carrying out objectives. In the midst of rapidly changing philosophies and technologies in health care, people play a major role, notwithstanding automation, in medicine.

The efforts of Japan's Ministry of Foreign Affairs, Ministry of Health, Ministry of Education, and, more importantly, JICA in bringing together those responsible for providing health care in this region and the leaders of the medical organizations is a step in the right direction. The GOs and the NGOs must learn to work together effectively if we are to see rapid implementation

of health programs and technical cooperation.

The continuing education being given by the medical organizations to the medical doctors is a good example of human resources development in health. During these two days of discussions we aim to assess how much has been achieved in terms of basic human needs by each country, and where we have failed. The impact of international cooperation on the level of health in our respective countries cannot be overstated. Thus we commend JICA for its continuing efforts in promoting the welfare of the people in this region and on the global level through their contributions. One of the most important objectives of the Confederation is the promotion of the highest possible level of health for the people in Asia and Oceania. I believe this meeting has led us to a good exchange of experiences that will have far-reaching effects in our efforts.

I would also like to recommend that the organizations from highly-developed countries not only provide infrastructures or medical equipment for the propagation of health care, but also establish more training programs for our medical personnel where this can not be given, such as in less-developed countries. It is the training of more medical personnel that will enable us to meet the health care requirements of the under-developed and developing countries.

The Human Resources Department of your organization should be most able to answer these basic human needs.

DISCUSSION

In the Discussion, participants suggested: i) better coordination among aid agencies to avoid duplication; ii) information exchanges among recipient countries to determine successful programs; iii) more in-service training and follow-up monitoring; iv) more fellowships to study abroad; v) training of private sector medical personnel to administer more primary health care services; vi) more involvement by medical universities in the teaching and delivery of primary health care.

PART 3
INTERNATIONAL COOPERATION IN HEALTH BY DEVELOPED COUNTRIES

Cochaired by: Dr. Takashi Wagatsuma
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Dr. M. Harly Soeradi. S.K.M.
Secretary General,
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INTERNATIONAL COOPERATION IN HEALTH BY JAPAN

Dr. Takefumi Kondo
Managing Director,
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JICA
Japan

Schemes of International Cooperation

Recognizing that health conditions in developing countries lag far behind those in Japan and other developed countries, Japanese cooperation aims to promote health among the peoples of developing countries.

Japan has utilized two dominant schemes in its international cooperation efforts in the field of health : "hardware" and "software". Hardware cooperation attempts to improve local health systems by constructing hospitals and other facilities and by supplying medical equipment and other materials. Software cooperation is technical in nature, including transfer of technology in diagnosis and treatment, training of medical personnel, and research.

These two strategies are combined in such a way that technical cooperation, such as the dispatch of experts and the acceptance of trainees, is carried out in conjunction with financial cooperation to improve facilities and supply equipment.

In principle, the Japanese Government makes it a rule to extend its assistance only in response to official requests from recipient governments. Recently, however, a more active approach, including discussions with the recipient countries on the definition of projects, has been initiated.

Japan's health cooperation to developing countries is comprised of, in addition to bilateral ODA, cooperation through multilateral organizations, emergency disaster relief, and subsidies and support to NGO's.

Japan's economic cooperation can be basically classified into the categories I will describe below. In practice these areas are combined to make

use of the respective advantages of each.

Bilateral Loans: (Yen-loans)

Their use in the field of health cooperation is naturally limited. Project loans have been used in a few cases for procurement of medical equipment.

Grant Aid Cooperation:

Grant aid cooperation is in principle extended to countries whose per capital GNP is US $ 940 or less. Funds are granted to recipient countries for construction of facilities and purchase of equipment aimed at improving infrastructure.

In the health and medical field, grant aid cooperation is used mainly to support core clinical and research facilities. This includes the construction and the supply of equipment and materials, for central hospitals and research institutes in the capital cities and for regional core hospitals.

The central hospitals and regional core hospitals comprise the nuclei of health and medical service in developing countries. They not only serve those with direct access to the facilities, but also provide a base for supporting primary health care programs reaching a wider community.

Unfortunately, grants for core facilities and equipment in some developing countries have imposed a heavy burden in maintenance and control.

Technical Cooperation:

Technical cooperation aims to develop human resources in developing countries through transfer of necessary technology. Japan's technical cooperation is comprised of the following seven items.

1) Acceptance of trainees :

Acceptance of trainees is the most fundamental form of cooperation for development of human resources. This program aims to transfer expertise and technology in specific fields to personnel from developing countries so

that they may play a key role in the socioeconomic development of their own countries.

JICA has been accepting trainees since 1954. The number of people trained as of the 1988 fiscal year totals 80,000, of which 7,600 or 9.5% were in the health field. This proportion has risen to 11% in recent years. As of the 1989 fiscal year, 39 courses were offered on a range of subjects, including tuberculosis and cancer control, nursing etc. Since 1974, Japan's training program has expanded from training in Japan to training in developing countries where trainees are invited from neighboring countries and provided with courses of their own choosing.

2) Dispatch of Experts

The dispatch of Japanese experts in various professional fields contributes directly, through person-to-person contact, to the development of human resources who will become the driving force for socioeconomic development in recipient countries.

Health experts dispatched by JICA are classified as individual experts and project experts. The total number of health experts dispatched between 1981 and 1988 was 3,200, accounting for about 20% of experts dispatched in all fields.

In the field of health, however, the ratio of short-term dispatches is higher than that of other fields, as there are problems in recruiting qualified Japanese health experts, especially for long terms. In light of the needs of developing countries and the availability of qualified personnel in Japan, it is necessary to increase the number of eligible experts in the future.

3) Supply of equipment and materials

To promote the smooth transfer of technology, equipment and materials are given when a shortage of necessary equipment will impede training, technology transfer, or effective use of existing technology.

Equipment granted for technical cooperation as part of health projects totaled about 31 billion yen between 1959 and 1988. Individual grants, including such things as ambulances and medical instruments, have totaled

1.4 billion yen since JICA's establishment.

Grants for equipment under technical cooperation are small compared to those under financial cooperation. Yet, requests for this type of grant continue and are directed towards increasingly sophisticated equipment. In granting equipment, the ability of the recipient country to maintain and operate the equipment must be considered. Priority must be given to the development of medical equipment and instruments with high utility that are easy to handle, maintain, and control in the hot and humid climates which characterize many developing countries.

4) Project-Type technical cooperation

Project-type technical cooperation involves large-scale efforts over a period of about 5 years, combining the dispatch of experts, acceptance of trainees, and supply of equipment. Due to the large scale of much project-type technical cooperation, it is often combined with the supply of facilities and equipment under grant aid cooperation.

Before implementation, the objectives and targets of the project are discussed with the recipient government. Then Japanese experts and their recipient country counterparts work together to plan and operate the project jointly according to the set objectives.

To date, Japan has undertaken 133 projects in the Health field, initiating 7 or 8 new projects a year. Project-type technical cooperation is seen as the nucleus of Japan's cooperation in the health field and will be expanded accordingly.

In addition to projects on clinical medicine and laboratory research, Japan needs to formulate projects emphasizing primary health care directed particularly at women's health, poverty, and the environment.

5) Japan Overseas Cooperation Volunteers (JOCV)

The Japan Overseas Cooperation Volunteers program aims to promote cooperation at the grass-roots level between Japanese youth and inhabitants in developing countries, who jointly work towards socioeconomic development of their local communities. Cooperation of this sort in the health field directly

benefits the neediest.

From the program's inception in 1965 to 1988, the number of volunteers dispatched in the health field numbered 846, accounting for 9.5 % of the total 8,800. In recent years the proportion of volunteers in the health field has increased to up to 16% and will continue to rise in the future.

About one-third of the health volunteers are nurses, followed by lab technicians, midwives, public health nurses, and pharmacists. Three-fourths of the JOCVs are dispatched to Africa and Asia.

In the future, attempts will be made to link volunteers with other cooperation programs.

6) Acceptance of Foreign Students

Foreign students at Japanese universities and other educational institutions have increased sharply to reach 31,000 in 1989. Among them, 4,400 are on Japanese Ministry of Education scholarships. Of the total, 1,300 students are specializing in the field of health, 420 of which are on scholarships from the Japanese Government. Measures are being taken to encourage rapid increases in the future.

7) Scientific Exchanges

Finally, we promote scientific exchanges. Since 1979 Japan has been active in exchanges of researchers from Japanese and ASEAN universities in order to contribute to scientific research in ASEAN countries in the field of health. A new program, a large-scale cooperative research project, will start this year.

Multilateral Cooperation

Japan contributes to and supports the activities of several international organizations, such as WHO, UNICEF and UNFPA, cooperating in the field of health. Japan also contributes to regional multilateral organizations such as ICDDR, B and the Onchocerciasis Control Program in the Volta River Basin area.

Japan's contribution to WHO has been increasing along with its total share to the United Nations since joining it in 1951. In 1990, Japan's share of contributions to WHO reached 11%, second only to that of the United States.

In addition, in 1989 Japan donated US $ 7.7 million in voluntary contributions to primary health care programs, an AIDS control program, and others.

In order to reinforce Japan's rapidly expanding bilateral cooperation in the health field, it has been necessary to seek collaboration from multilateral organizations which can offer experience, expertise, and competent personnel. To this end, Japan has held regular conferences with WHO and UNICEF to exchange information, especially in the field of infectious disease control. Further collaboration of this sort will be pursued in the future.

Emergency Disaster Relief

As Japan is prone to natural disasters such as earthquakes, typhoons, floods, and volcanic eruptions, it has accumulated a great deal of experience and technical knowhow regarding disaster countermeasures. In 1986, the government established the Japan Disaster Relief Team (JDR) as a ready supply of personnel and goods for prompt response to disaster-sticken countries. JDR consists of three teams —— a rescue team, a medical team and an experts team —— for emergency and reconstruction projects. As appropriate, combinations of these teams are dispatched through JICA.

Since its creation, JDR has been sent abroad 43 times, for example, Japan sent the rescue and medical teams to Iran for earthquake relief.

Subsidies and Support To NGOs

NGO activities supplement and complement ODA, thus the Japanese Government subsidizes NGO programs to enable effective collaboration in the promotion of economic development. Subsidies have been granted to three NGOs in the health field up to the present. Japan sees this as a valuable form of health cooperation and hopes for an increase in the number of Japanese NGOs currently operating. To this end the Japanese Government

has set aside 220 million yen to be granted in fiscal year 1990 upon requests for support from NGOs.

Conclusion

Japan has rapidly expanded its role in the field of international health cooperation. However, due to its short history in international cooperation, Japan is less experienced in health cooperation than some other developed countries. While Japan recognizes the importance of primary health care as defined in the Alma Ata Declaration, we must also strive to respond to the increasingly varied and complex health problems faced by developing countries.

Japan hopes to contribute from its own experiences to the improvement of health conditions in Asia and the Pacific region. In addition, Japan will strive to improve the efficiency and effectiveness of its international cooperation through use of evaluations of past performance and better targeting of the specific needs of recipient countries.

INTERNATIONAL COOPERATION IN HEALTH BY THE U.S.A.

Mr. Robert M. Clay
Chief,
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Office of Health,
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USAID,
U.S.A.

Health Assistance within A.I.D.

Health assistance is an integral part of the U.S. foreign assistance program. As we move into the 1990s, A.I.D. has defined three broad development goals that provide the framework for our work. They are: first, to pursue economic growth that is broad based and sustainable; second, to develop human capacity, with a particular emphasis on the health and education levels required to empower all citizens to contribute and benefit from economic progress; and third, pluralism, including the promotion of democracy, freedom, and competition in the political, economic, and social institutions of nations.

Health assistance is essential to attaining all these goals. Investments in individual, family, and community health have a positive impact on the nation's macro-economy. A healthy work force without the economic and psychological burdens of sick and dying children and other family members can contribute significantly to a country's future social, cultural, and economic development. And finally, in terms of pluralism, health programs can encourage the development of "informed consumers", capable of caring for themselves and their families and knowing where to go for help when they need it.

The focus of A.I.D.'s health program is to increase life expectancy and improve the general health status of developing countries. Highest

priority is given to programs designed to reduce infant, early childhood, and maternal morbidity and mortality —— our child survival initiative.

Funding for health from A.I.D. has doubled since 1984 from about $ 150 million to $ 300 million. Approximately 60 % of these funds are directed to improving the survival of children under five and their mothers. At present most of these funds support immunization and diarrhea disease control. However, increasing attention is being given to assist countries in such areas as acute respiratory infections, breast-feeding, malnutrition, high risk births, and maternal health. The balance is devoted to other areas such as AIDS prevention, water and sanitation, health system development (including health financing and logistic systems), and vector control (including malaria). Our efforts in health are complimented by A.I.D.'s US $ 250 million per year family planning program and by $ 1.2 billion per year in food assistance.

A.I.D.'S Child Survival Program

A.I.D.'s child survival program, which began formally in 1985, is based on partnerships with other donors : host countries, many of whom are here today, the private sector, and communities. We are part of a worldwide effort. From the beginning, child survival programs have benefited from the commitments and contributions of many organizations, especially UNICEF, the World Health Organization, bilateral donors, universities, and private voluntary, professional, and business organizations. JICA is part of this partnership, and we at A.I.D. are very pleased to note the increasing interest in child survival and health initiatives articulated by JICA and the Government of Japan. As I mentioned earlier, we at A.I.D. stand by ready to continue our useful collaborative efforts.

As a member of this worldwide partnership, A.I.D. tries to offer assistance in areas we believe, and are informed by others, to be our technical comparative advantage. Overall, A.I.D.'s child survival program builds on those strengths by focusing resources on the most effective known technologies, by supporting field programs with technical expertise and results-oriented research, and by involving the private sector, NGOs, and

private practitioners.

In the spirit of continued collaboration in child survival, the United States is also looking forward to the Summit for Children this September as a catalyst for such collaborative actions at the national level. As a member of the Summit Planning Committee, the U.S. is encouraging a focus on achievable initiatives for children in health, nutrition, and education that take into account the realities of specific country situations. A.I.D. works in over 70 countries worldwide, though we have focused our child survival support on 22 child survival emphasis countries.

Four primary interventions form the centerpiece of our assistance. These are: first, immunization against six major childhood diseases; second, oral rehydration therapy (ORT) to prevent dehydration due to diarrheal diseases; third, improved nutrition through enhanced breastfeeding, weaning, and growth monitoring; and fourth, optimal birth spacing.

This focus on interventions that can best influence infant and child mortality has stood the test of time. Infant mortality has dropped dramatically in a number of countries and life expectancy is rising. More than 60% of the world's children are now protected by immunization from childhood diseases. Just six years ago, only 25% were protected. And ORT is now being used in 25% of all diarrheal episodes, compared to less than one percent in 1989. One example of these especially impressive results comes from Egypt, a country where A.I.D. has a long history of health assistance. In 1983 and 1984, close to 70% of the children under 4 years of age were dying from diarrheal diseases. In 1985 and 1986, deaths due to diarrhea fell to less than 45% of total deaths.

The Egypt example provides us with an important insight into future challenges for A.I.D.'s child survival and health program. In some countries we can see the positive effects of improved nutrition and immunization and oral rehydration therapy. Yet children are still dying. In Egypt, for example, respiratory and parental illness remain important causes of deaths for children under age 4. Thus the child survival challenge of the next decade becomes a combination of staying flexible enough to address the requirements presented by neonatal tetanus, acute respiratory diseases, and other diseases

of the young.

Future Challenges

Attaining the goal of increased life-expectancy and improving the health status of developing country populations poses other formidable challenges as well. Other diseases threaten. Fifty-eight percent of the world's population live in areas where malaria is endemic. Chemotherapy is becoming less useful, and we are challenged to find new strategies to control this disease. The AIDS virus has now spread to virtually every corner of the globe. WHO estimates that 5 to 10 million people have already been infected with HIV worldwide and most of these are expected to die of AIDS. We hope this is an area where JICA can increase its support for the global effort.

Some three million people worldwide are infected with Hepatitis B. The orphans of these diseases, often poor and vulnerable to the traditional health threats, present the international health community with a formidable task.

Demographic change is affecting the health profile of many developing countries. Populations are growing and this growth, combined with modernization and urbanization, brings new threats to health. Dengue hemorrhagic fever, directly associated with urbanization, for example, is severe in cities of Southeast Asia and has entered Latin America and the Caribbean as well. Environmental health is a primary concern for many Asian countries and will likely be one for many of the world's mega-cities in the next decade.

Populations are getting older, adding new disease burdens for families and for the health system. The cause of death in many advanced developing countries is expected to shift from childhood diseases to the chronic diseases of middle age.

A.I.D. also sees finance and technology as keys to what we are able to accomplish over the next decade. Sustainability of health programs is a major concern. A.I.D. is looking at cost-recovery and cost containment, and in many countries we are engaged in dialogues with the government about a basic reorientation of health policies and government expenditures in the health sector. A.I.D. is also actively encouraging the expansion of the private

provision of social services and products, as well as encouraging the development of more effective health technologies. We need vaccines that are less expensive, that will be easier to administer, that are heat stable, and that are protective against the range of diseases that occur in the developing world. We also need simple, rapid diagnostics and simpler and more effective drug therapy.

Finally, to combat many of the issues raised here, we will have to focus more attention on changes in health behaviors, both those of the health provider and those of the caretaker of the child. Having spent the past six years working on communications programs, I was heartened to hear that the communication of health education is a focus in many of the countries. I am convinced that, for many countries, this is a major missing element which must be stressed in the future.

Conclusion

Thus there will be many challenges ahead of us. It will take a strong partnership to address these, and it is precisely meetings such as these that will enable us to form useful and efficient relationships. We at A.I.D. stand ready to work together with our team players and to play an active role in meeting these challenges in the future.

INTERNATIONAL COOPERATION IN HEALTH BY THE NETHERLANDS

Prof. Jane A. Kusin
Head,
Department of Nutrition,
Royal Tropical Institute,
The Netherlands

Policy of the Dutch Government

According to the last OECD DAC report released last week, Japan is the largest donor country at present. This Symposium therefore is very timely. The Netherlands is a small contributor as far as the absolute amount of money is concerned. But it is one of the three countries which, in spite of its own economic crises, has always earmarked more than 1% of its Gross National Product to international cooperation. Since the absolute amounts are rather small, our policy has been always to optimize the amount to be spent by limiting bilateral assistance to what they call "priority countries and priority regions". At present, there are twenty-three priority countries, of which 6 to 8 are in this region .

One of the major shifts is the change of priority from hospital-based care to primary health care. The 1990 – 95 policy document to be released in September has earmarked an even greater amount of money for primary health care. We will see in the coming decade a large increase in contributions to family planning in the context of safe motherhood, while endemic diseases have gained importance because of the continuing threat of these major diseases like malaria, tuberculosis, leprosy, schistosomiasis and hepatitis.

There is a declining trend in training because a large portion of training is now channeled through multilateral agencies. Research has a low priority, receiving just 2% of our contribution, since the Dutch government believes that we know enough but we just don't know how to implement

our knowledge.

The policy of the coming decade is based on all the situational analyses released by either United Nations members or by the World Bank or by the countries themselves. It is specifically based on the requests made by these countries and it is specifically related to the absorbtive capacities of these countries. The basis for our policy in the coming decade is a selection of problems published by the various agencies that I mentioned before. We believe that very much emphasis should be given to mortality reduction and it is indeed a success that infant and child mortality has dropped. But a wide variation still exists among provinces and areas in certain countries, indicating that there are pockets of need, as well as a disparity of health care service delivery.

We also realize that surviving children are not always healthy, and according to the last World Food Survey, malnutrition in relative terms may have decreased but in absolute terms it has increased. What is the most appalling is that while infant and child mortality have dropped, maternal mortality has, at least as far as available statistics indicate, remained alarmingly high, varying from 50 to 500 times higher than in industrialized countries. This is due to the maternal depletion syndrome (the stress of reproduction, morbidity and hard physical labor) and also very limited access to maternal health care and maternal nutrition care, and the very low coverage of antenatal delivery and postnatal care.

While UNICEF has been a successful advocate of child health, very few organizations have adopted the mother as its special focus. Continued rapid population growth seriously drains limited national resources, and the Netherlands will contribute heavily to programs to reduce this rate. But even if supported by information, education, communication, and motivation, our contribution is bound to fail unless it is fully integrated in an MCH nutrition package.

As far as primary health care is concerned, we had the Alma Ata ——10 Years After symposium at our Institute 2 years ago, and the general conclusion of that symposium was actually similar to what has been voiced this morning. The problem was one of sustainable grassroots-level workers

who are supposed to be volunteers. Cost recovery and community financing were other problems.

Priority for the Coming Decade

Based on these selective problems identified by advisors of the Netherlands International Cooperation Agency, the priority for the coming decade will be comprehensive primary health care, in strict contrast to selective primary health care targeted to under-served higher-risk rural and urban communities. The approach for urban communities will be very different than for rural communities.

The second main priority will be an intersectoral approach, with emphasis on women both as recipients of health care as well as participants in health care and developmental activities, such as integrated family planning and MCH in the context of safe motherhood, and a strong support for cost recovery strategies without sacrificing the poor. As far as development of human resources is concerned, the emphasis will be on health management of mid-level health manpower from the district level downwards.

Research will mainly be focusing on how to reach the people and how to get programs which are supported and maintainable. The Royal Tropical Institute, being one of the few institutes with a long history of international cooperation, receives requests from the Dutch International Cooperation Agency to implement part of its policy. So in general terms, what we do is stress these three broad components, with a major emphasis on implementation of projects, but we do have a strong research component in basic health services, primary health care, and biomedical research, and in the latter case, we focus on four diseases : tuberculosis, leprosy, schistosomiasis and malaria. As far as training is concerned, we try to have institutional collaboration on a long term basis, say for about 10 years, in which every 3 years, the content of collaboration is again delineated.

Conclusion

With 1992 coming very close, whether we want it or not, the Netherlands will be part of the EEC. Institutions in developing and developed

countries will have their comparative advantages, and it would be so much more favorable if all these experiences can be bundled together and made use of for those who are in need of it.

REMARKS

Prof. V. Ramalingaswami
Special Adviser to the Excutive Director
on Child Survival and Development,
United Nations Children's Fund

I would propose to our meeting that all international cooperation in health, indeed in any other area, be governed by one ethic, and that is to enhance the capacity of those countries to solve their own problems, with assistance from outside if needed.

I think if we keep that as our ethical goal, then the routes that we take will then become much more humanized.

This part of the world —— Asia and the Pacific Region has actually more than half of the world's population. It is a very interesting and exciting area in that it has one of the world's healthiest nations, as well as some countries whose health status is very low, especially if you include Afghanistan. The needs of the countries of our region are extremely varied and highly location-specific, a point made throughout the discussion today, and the background paper that JICA produced emphasized this diversified approach to helping countries in their struggle for health development.

In many countries we are witnessing an epidemiological transition as well as a demographic transition. In fact these changes are very striking. There are countries, such as Japan, that are in the most industrial phase—— well beyond the transitional stages —— and there are several others which are still about to begin or have just begun this transitional process.

Therefore, I think there is need for a great deal of flexibility in our approach to help countries of this region. There is also a need for a long-term perspective, not simply a come today and be gone tomorrow, "Safari", kind of assistance. I was very pleased to hear Dr. Kondo mention some project interaction with countries extending up to 5 years or perhaps even beyond. When it comes to building institutions in the Third World, I would think ten years is about the minimum time it takes to get something on

the soil and to keep it going. Decision makers generally don't want to commit resources over a long term but at least this perspective ought to be kept in mind.

There is, of course, in the two regions we are talking about, an enormous wealth of information. If we did analytical work on the histories of health development in the countries of our regions associated with high, medium, and low economic growth, I think we could distill results and policies that could serve us well in the future. Perhaps aid policies ought to pay some attention to these historical trends in health development of each country.

Two or three speakers today drew attention to what I consider to be one of the most important needs that the developed countries ought to keep in mind when they look towards helping the Third World, and that is the capacity of those countries to resolve their own problems. This revolves around skills in health policy analysis and health policy formulation, which in turn must rest upon a continuing source of information coming from different parts of the country on a "time scale". I think this is what our International Commission on Health Research emphasizes as the centerpiece of health development in the Third World.

Japan has a tremendous role to play because it has quite a lot of hardware and a lot of software. Software can be used to make information more accessible at the local level. This information can then be used immediately, instead of being passed up the hierarchy only to gather dust at the top.

Such an information revolution could be supported by aid agencies, and I think this could have a significant impact on many fields. Connected with this is surveillance which must depend not only upon contact between health care agents and the people, but also on the use of technologies. Surveillance tools are advancing rapidly. For instance, molecular biology has made it possible to conduct, in addition to antibody analysis, antigen analysis, so that one can get a picture of present infections as well as past infections.

Here again I see simple tools which arise from high science and high technology which can be used to help the neediest people. Through these

kinds of activities, Japan can play a great role in the promotion of primary health care.

Finally, I would like to comment on something that several speakers have mentioned : the intermediate structures. We can see a fair amount of progress in the primary care movement, with the establishment of structures out in the rural areas, and we already have a certain amount of tertiary care structures, largely as a result of the colonial legacies that we inherited. But in between these two levels is intermediate care, the lack of which leads people from the rural areas to seek short cut and go directly to the teaching hospital. All of us here are familiar with this kind of geographic medicine and method of referrals. The strengthening of the intermediate structures, the diagnostic as well as therapeutic efficiencies is, therefore, also important.

As one very last point, I suggest that within the framework of comprehensive health care that we are all dedicated to, there could be a certain acceleration of some efforts against some diseases which I think are very pertinent to our region and against which Japan can make some very significant contributions towards the prevention of. This is not distorting primary care ; after all, control of endemic disease is part and parcel of primary care. We have opportunities to stop tuberculosis, which our Commission has called the great neglected disease. We have the potential, and Japan has a tremendous record of bringing down tuberculosis in a very short period of time. Japan is the only country, I think, to still train professionals for the control of tuberculosis around the world. This is an opportunity to turn the scales of time against tuberculosis. Some people are repelled by the term "target", saying we don't need targets, but I think we do. People are suffering, so we need to do something. And in the same category, I would put the Hepatitis B virus, which is unique to this region.

DISCUSSION

In the Discussion the increasing use of pharmaceutical drugs and the need for stronger regulation of the distribution of drugs were commented upon. There was a request that developed countries develop programs to inform consumers in Third World countries about products related to health.

The need for more funding that can provide structures which will help developing countries become less dependent was also stressed. There was a comment that JICA mainly provides bilateral assistance, so it is difficult for smaller international organizations to get funds from JICA. JICA replied that it is planning to establish stronger ties to international organizations. There was also a query as to whether JICA could provide assistance to foreign NGOs. JICA replied that except for a small-scale grant scheme there is no framework for foreign NGO assistance at present.

The benefits of joint medical research and the need for more schools of public health were also mentioned.

SECOND SESSION
INTERNATIONAL COOPERATION IN HEALTH RESEARCH

PART 1
HEALTH RESEARCH IN DEVELOPING COUNTRIES

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Penegrin Dato Mohammad Yassin
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HEALTH RESEARCH AND RESEARCHERS IN DEVELOPING COUNTRIES ——AN OVERVIEW——

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Introduction

Differences between industrialized and developing countries are measured by several parameters. Economists use per capita income, GNP, GDP, etc., and social scientists use indices such as literacy rates. Realization that the goal of industrialization and technological development is to improve the quality of life led to the use of health parameters as markers for such an achievement.

There is increasing awareness that the widening gap between industrialized and developing countries is due to the science and technology gap. The Nobel laureate Dr. Abdus Salam says that "in the final analysis, **creativity**, **mastery** and **utilization** of **modern science** and is **basically** what distinguishes the South from the North. On science and technology depend the standards of living of a nation."

The route to science and technology is through research because research generates new knowledge and new tools. Therefore the development of the potential for research has to be an integral component of the efforts of developing countries to improve the well-being of their people.

Health Reseach in Developing Countries

A review compiled by the Commission on Health Research for Development analyses the states of current health research world- wide and identifies strengths and weaknesses. What follows has been taken largely

from the report of the Commission.

[Variations]

The first point to note is that there is a great diversity among developing countries. Some have attained research capability of considerable magnitude while others have hardly any capacity at all.

[Output]

Research output measured by number of publications shows that this is very low. For 1988, only 5.6% of publication from all areas came from developing country resident researchers.

[Scope]

The pattern of research investment also shows heavy dominance of clinical, biomedical and laboratory research and less on health information systems, field epidemiology, demography, behavioral sciences, economics and management.

[Research expenditure]

According to the Commission, "the ratio of expenditures on science and technology (between the North and the South) ranges between a factor of seven or more so that the absolute total expenditure on science and technology in the South amounts to no more than 3.1% of the world total."

The situation with regard to health research is just as astonishing: about 93% of the world's burden of preventable mortality occurs in the developing world. Yet of the $30 billion global investment in health research in 1986, only 5% or $1.6 billion was specifically earmarked to health problems of developing countries.

Of the $1.6 billion spent on developing countries, 42% originated in developing countries themselves. Of the remainder, only one-sixth was actually transferred to developing countries.

In addition, eight developing countries (Argentina, Brazil, China, India, Mexico, Saudi Arabia and Taiwan) account for 75% of total health research

investment by developing countries.

Researchers and the Research Environment

[Researchers]

There is a severe dearth of health professionals competent to conduct research. This is in part a reflection of the general shortage of professionals, which in turn is due to inadequate health manpower development programs. The few health professionals attempting to conduct research are often overwhelmed by routine service duties. Their salary is unattractive ; they are intellectually isolated and have a restricted research agenda. They receive little understanding or encouragement from government bureaucrats. Finally funds for research are hard to come by, and when they are available, keeping up the paper work to account for them becomes nightmarish. Despite these problems, there exist a quota of competent researchers in most developing countries who battle against the odds and do produce occasionally brilliant results.

[Institutions]

Health research is mainly conducted in health institutions for undergraduate and postgraduate medical education. In many developing countries these account for as much as 75% of all the output. However, research is also carried out in a few autonomous health research centers, governmental departments and non-governmental agencies. The most productive are institutions conducting postgraduate education in which research is an integral requirement for graduation.

Although some developing country institutions compete with the best in the world, the majority suffer from serious constraints. Resource constraints include inadequate laboratory equipment, computers, etc., lack of well-trained technicians (including technicians to maintain and repair electronic equipment), unreliable equipment and vital supplies. All of these problems are compounded by unstable budgetary support.

Another major problem is lack of easy access to health information and to information retrieval systems. Research thrives in an atmosphere

where there is critical exchange of views, where a system of peer review is in practice, and where health professionals from diverse specialities such as basic medical science, epidemiology and public health, social science, etc. work together. Such an environment is hard to come by in developing countries.

[Macro-environment]

The genesis of the above constraints lies in the lack of social appreciation of research. In addition, it is often noted that the research process is not adequately matched with the needs of beneficiaries or policy makers.

The above are compounded by the declining economic performance of developing countries, misappropriation of funds and the inevitable cuts in research funds, and the bureaucratic and often inefficient research administration machinery.

[Is Health Research Necessary ?]

The fairly dismal state of health research in developing countries begs the question : Is health research really necessary or is it a luxury ? Many developing country economists, particularly amongst those from the least developing countries, consider investment in research as superfluous and wasteful. Such views are understandably easily adopted in times of stark economic austerity.

Yet research is particularly needed under these circumstances. Research enables governments to save money and multiply benefits by effective planning and wise use of scarce resources. Research is essential to guide action. It enables the development of new health technologies against economically wasteful health problems.

Indeed all countries should be empowered with the capacity to :

1) identify and set priorities among health problems ;
2) guide and accelerate application of existing health technologies to solving health problems ;

3) develop new tools and fresh strategies ;
4) advance basic understanding and frontiers of knowledge.

The above have been referred to as essential health research. The first two are particularly urgent to define to solve country-specific health problems.

Concluding Remarks

Inter-dependence amongst the countries of the world has increased during this century to the point where it can be said that we live in a global village. It is therefore the responsibility of people in both developing as well as industrialized countries to remedy the situation of health research in developing countries. Accordingly, the recommendations for action of the Commission on Health Research for Development are particularly befitting to conclude my presentation.

1) Research capacity must be built up in developing countries by developing research manpower and enhancing individual competence, supporting institutional structures and career paths, developing fusion of research, policy and action, and utilizing important potential contributions to global health research.
2) International partnership in health research must be promoted by supporting in industrialized countries individual and institutional research capacity concerned with developing country health problems, and building linkages with developing country institutions and researchers.
3) Capability for essential national health research must be built by establishment and strengthening of country- specific research to inform decision makers on health action, and of global health research to contribute towards solution of unresolved health problems.
4) Mobilization of funds for health research must be undertaken to accommodate proposed expansion and to build research capacity, noting that the investment will have to be a long-term undertaking.

THE RESEARCH INSTITUTE FOR TROPICAL MEDICINE ——CAPACITY STRENGTHENING THROUGH INTERNATIONAL COOPERATION IN HEALTH RESEARCH——

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Research Activities at RITM

The Research Institute for Tropical Medicine (RITM) is the research arm for infectious tropical diseases of the Department of Health. Established in 1981 through a grant-in-aid by the Government of Japan, it is tasked with planning and implementing the Department's tropical medicine research program. Research efforts are geared towards the development of biomedical tools and the formation and evaluation of effective and efficient intervention measures for the control of infectious tropical diseases. Unlike other tropical disease research institutions, the RITM, from its inception, has focused not only on tropical diseases prevalent in the country, which include malaria, leprosy, and schistosomiasis, but it has pursued just as vigorously other research priority areas principally defined by the burden of illness and feasibility for control, such as acute respiratory infections, and diarrheal diseases which are two of the leading causes of illness and death among Filipino children, and hepatitis B, human immunodeficiency virus infection, and vaccine-preventable diseases.

Beginnings of RITM

Six months prior to the inauguration of the RITM in 1981, there had been only one person chosen for its staff, and this was the Director, Dr.

Omowaldes of WHO. For the first year of operations, the Government of the Philippines could only provide a little over $ 180,000, a fourth of which went to salaries of personnel. Although there were provisions for a hundred positions, less than ten of these were occupied by senior researchers. This handful of scientists had to be recruited from academia since there seemed to be a dearth of capable researchers within the Department. I was one of those researchers from academia, who, at that time, was thought to be crazy to be joining such a brand-new institution. Only three research projects could be initiated, one each on acute respiratory infections and diarrheal diseases, both supported by the World Health Organization, and the third on schistosomiasis through a re-entry grant for the principal investigator from the Edna McConnell Clark Foundation.

In spite of this lowly beginning, the RITM during the last nine years has emerged as one of the leading health research institutions in the country. It has expanded its research programs to include other diseases of public health importance. In recognition of the quality of research generated, it has been able to secure research grants from local, as well as international, agencies, including the Australian Development Assistance Bureau, the International Development Research Center, USAID, Family Health International, WHO-TDR, the International Atomic Energy Agency, the TDR-Rockefeller Joint Venture, and the Board on Science and Technology for International Development. Local as well as international linkages have been forged, notably with scientists from the United States, Japan, Australia, and Finland.

The RITM now has close to 300 members on its staff and at least 100 contractual research personnel. Support from the government through the Department of Health has increased to a little over $ 1 million annually, still a small sum considering that this is less than 1% of the Department of Health budget; but what it lacks in financial support the Department of Health tries to make up for by recognizing the research outputs of the RITM. There can be no better evidence of this than the utilization of data generated by the Institute in the formulation of health policies and implementation of programs.

Development of RITM

How did the RITM get to where it is now over a short period of nine years? A great deal of the credit goes to international co-operation in health research, specifically through the Japan International Cooperation Agency. This external aid was crucial to building and sustaining research capacity in the Institution.

Strengthening research capacity involved two main components : manpower development and institutional infrastructure. Through a grant-in-aid from the Government of Japan, the initial building, facilities, and equipment were donated to the Philippine Government. This provision of material resources was complemented by the implementation of a seven-year technical co-operation project through JICA.

Under this bilateral agreement, additional equipment was obtained and, more importantly, our staff acquired and strengthened their skills in specific disciplines. The latter was achieved by sending trainees in particular fields for periods of a few months up to a year. In addition, effective technology transfer was facilitated by visits from short-term and long-term Japanese consultants, who saw to it that technologies learned abroad were successfully applied and adapted to local conditions. This follow-through during this critical period when our staff returned from training abroad was essential and often determined the success or failure of establishing the technology locally.

This technical co-operation project was successful in establishing a virology laboratory, which is now one of the few functioning virology laboratories in the country and supports research on acute respiratory infections, diarrheal diseases, dengue, HIV, and rabies. The project was also successful in setting up an animal research lab; in strengthening bacteriology, parasitology, and immunology ; in training in electronmicroscopy ; and, to a certain extent, in the development of our own health products such as diagnostic reagents for hepatitis B. A total of 22 Philippine trainees and 28 JICA experts directly participated in this project.

In ensuring the success of the project, there could be no substitute for careful planning, monitoring, and evaluation of the entire undertaking.

A body was created that was tasked with formulating a five-year plan for institutional strengthening and with monitoring its implementation. This was called the Technical Co-ordinating Committee and chaired by the Assistant Minister of Health himself, with representatives from JICA, the RITM, the Department of Science and Technology, and the National Economic Development Authority. Quarterly meetings and consultations were held to discuss the progress of research capacity building and problems encountered.

Additionally, an evaluation team from JICA periodically visited the Institute to review outputs in relation to targets set for the project. This was instrumental in arriving at the decision to extend the implementation from a period of five to seven years to meet the Project's targets.

Setting priorities is a complex issue. In the Philippines we have always believed that this should not be dictated by international donors since it is our health interests that are at stake. In this regard, I would like to make special mention of the significant contribution of the JICA team leader for TCP, Dr. Yoshinori Kaneko, who saw to it that the priorities as articulated by the recipient institution were upheld.

Problems at RITM

However, there was not only the bright side but also a number problems we encountered. I shall highlight the major ones and offer some recommendations. The first relates to the provision of equipment. Rigid rules on the donor side, particularly in the early 80's, mandated that equipment should come from the donor country. This led to the problems of availability of spare parts. Even if local suppliers were available, it would take several months to procure the ordered replacement parts. Maintenance and repair of sophisticated equipment require highly qualified personnel, and also, unstable power supply and voltage fluctuations can seriously damage sensitive equipment. Most government institutions in developing countries are confronted with lack of skilled manpower for maintenance service and the RITM is no exception. The donor agency could remedy these problems by buying from manufacturers who have maintenance and service facilities in the developing country concerned.

The problems related to staff training partly stemmed from rigid internal rules and policies, this time on the government side. Bureaucratic requirements would often impede rather than facilitate the process. It was also difficult for us to recruit qualified personnel for training when government salaries could not compete with what the private sector offered. On the donor side, although the technical experts sent were competent in their respective fields, some had serious problems in communicating their knowledge due to the language barrier. Other considerations in the selection of experts, such as proficiency in English, need to be addressed.

The availability of scientific literature remains a problem in our country. Efforts to remedy the situation have been made by the Philippine Council for Health Research and Development through the establishment of a network of libraries, documentation and information centers. In our own institution, our library is not as developed as our laboratories since government funds are inadequate for purchasing books and journal subscriptions. A donor agency might consider adjusting its policies to support library resources.

Training at RITM

As acquired knowledge and skills grew through research, the RITM had to expand its role to include training. This covers a broad range, from laboratory skills and improved clinical management of patients with infectious diseases, to research design and methodology. Since three years ago, the Institute has conducted training workshops in diagnostic techniques relevant to acute respiratory infections and diarrheal diseases. This has been undertaken under the Third Country Training Program supported by JICA. Participants come from countries in the Western Pacific and other parts of Asia. Moreover, since ongoing research programs are multidisciplinary and field-based, the RITM provides a wealth of opportunities and experience especially for young researchers, both from the Philippines and from abroad, who want to spend some time in our rural and urban field areas.

Technology transfer as offered by RITM has been facilitated by the construction of a three－story dormitory for visiting scientists and trainees

and a training center with teaching laboratories, lecture rooms, and an auditorium. These were acquired through another grant from the Japanese Government and the construction was completed in 1989.

Presently, these facilities are used not only by us but also by other agencies in government and the private sector, providing them a venue for training activities.

Conclusion

In conclusion, the technical co-operation projects, which were conducted over a seven-year period, were successful in building up the research capacity of RITM. This was most evident in the fields of laboratory sciences. Capacity strengthening efforts in the other essential areas, particularly the social sciences, are currently being addressed. For these efforts to succeed, sustained support from national and international agencies is critical.

HEALTH RESEARCH IN THAILAND ——THE ASEAN INSTITUTE FOR HEALTH DEVELOPMENT AT MAHIDOL UNIVERSITY——

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Functions of AIHD

The ASEAN Institute for Health Development (AIHD) is a technical training and human resources development institution acting as a focal point for developing Primary Health Care (PHC) and Quality of Life (QoL) networks and technologies, primarily (but not solely) in the ASEAN and Asia-Pacific regions and in the context of technical cooperation among developing countries. Its inter-related functions are: training, research, model development, and information documentation. Its three objectives are: 1) to facilitate training, research and models for PHC/QoL development in both rural and urban settings; 2) to develop facilities, technologies, materials, methods and programs to meet the training needs of target groups in Thailand, the Southeast Asian and Asia-Pacific regions, as well as other Asian and African countries; and 3) to establish national and international networks in PHC/QoL in order to share and/or exchange resources, experiences and information to promote the development of PHC/QoL in relevant countries and regions.

Background

AIHD was originally established as the ASEAN Training Center for Primary Health Care Development (ATC/PHC) in 1982 when the Government of Japan offered grant-in-aid and technical cooperation under the ASEAN Human Resource Development Project in the amount of US $ 20

million for each ASEAN member country. As a part of the latter Project, both governments and their associated educational institutions felt that the ATC/PHC Project, itself, would significantly contribute not just to local and national health development endeavors, but more crucially it would serve a valuable role in strengthening regional and international PHC, health manpower and health research and development efforts. Thus far, the Royal Thai Government and its collaborating agencies have supported AIHD and will continue to do so. The Japanese Government's support ended last year, however, except for the Master of Primary Health Care Management (MPHM) international degree program. From this partnership, on 11 October 1988 and by Royal Decree of His Majesty King Bhumipol Adulyadej, ATC/PHC was promoted to become a full Institute within Mahidol University and given its current title.

Lessons Learned

As noted above, AIHD's four main functions are inter-related. Health research involves training and encouraging personnel to look into the biomedical, ecological, sociocultural, economic, political, behavioral and managerial aspects influencing health care delivery and utilization. They then must be responsible for applying this knowledge and then demystifying and disseminating information at the lowest possible organizational level where it is needed the most. Over the past eight years, AIHD's activities have pointed out important lessons to be learned, and AIHD is a model process in itself, for bringing such aims and research training activities to bear on health and social development problems from the community level to the international realm. Some main examples of these lessons are as follows :

1. Participatory Learning as an Initial Research Training Objective

As of last year, AIHD has offered a series of over 30 national and 60 international training courses, programs and consultative meetings, all of which utilize a multi-sectoral perspective concerned with improving PHC and Quality of Life within Thailand and the region, and involving over 4,50024 participants from over 30 different nations. The international programs are

concerned mainly with promoting inter-country cooperation and exploring innovative techniques in PHC and QoL management and development, the roles of hospitals and medical educators, the mobilization of communities for PHC, management information systems and leadership development. National topics, which also vary according to needs and demands, focus on the training of trainers in PHC development, incorporation of PHC into many different sectors, leadership development, cooperatives and PHC, Basic Minimum Needs (BMN), rural development funds, non-government organizations and quality of life development, religion and quality of life development, research methods for PHC, and the identification of key groups as effective PHC/QoL promoters, amongst others.

For both national and international training programs, in particular, AIHD adopts a "participatory learning" strategy requiring participants' full participation, instead of a passive classroom role. This training approach highlights one of the greatest challenges in the health development research arena, that is, participating with the people to truly understand their ways of life and their problems. Consequently, by emphasizing participatory learning, individuals can become accustomed to working in teams and with a greater sense of empathy ; orientations which have a great impact and benefit for future research work, especially at local levels.

The concept of "community participation," the backbone of many of today's development strategies, can effectively turn abstract ideas into concrete action plans and results. However, in some developing and least developing countries, full participation oftentimes remains to be seen. This is because "community participation" is often interpreted by officials to mean "direct participation" with the latter acting as the agents of change, not the people themselves. "Social participation", wherein people take it upon themselves to identify problems and make appropriate changes is the real key to initiating, managing, and thereby maintaining any community development activity. To achieve such participation, health providers and managers must be taught to work shoulder-to-shoulder with the people at all stages. They must also accept the challenging democratic principle that groups through self-directed education, research and action can utilize

knowledge to transform their social realities. For this to occur, they must challenge themselves to incorporate working class or popular-sector men and women in the production of knowledge and include popular knowledge in their accepted practices. By involving the people, their leaders from many areas (e.g., religious, political, civic) and their own knowledge and concepts, a sense of community consciousness can develop within and between the people and officials.

2. Leadership Development for Health Development

From every side, people recognize that one crucial factor in changing people's conceptions of themselves and their situation is leadership, and the demand and need for constructive leaders is urgent. Leaders today are no longer considered unique individuals, set apart from others by unusual personal qualities or personalities. Rather, leadership development is really a learning process which allows people to work as effective teams. In actuality today, leadership is a paradox. Formally-trained and experienced leaders are in very short supply, and are often overused. Yet, leadership opportunities abound for each individual and the latter have inherent leadership qualities. But this vast number of people are untrained and inexperienced, and hence they need to be trained and guided as to how best to use their untapped potential to resolve critical problems and overcome barriers.

Recognizing this need, since 1986 AIHD has offered a ten-month Master of Primary Health Care Management (MPHM) degree program which includes course work, field work, and a thesis. This internationally-accredited program attracts an average of about 20 individuals per year from countries within the ASEAN, Asia-Pacific, East Asian, South Asian and North American regions. Thesis topics have ranged widely but each addresses an important PHC management issue in Thailand, and one which the students would like to pursue in their own country context. In this way, students gain valuable cross-cultural insight into the research process itself and the wide-range of determinants and consequences surrounding the research problem. The MPHM program thus focuses specifically on developing health personnel to acquire

qualities of sound and moral judgment, initiative, and an awareness of the human relations approach to health care delivery.

The program's ultimate aim is to facilitate human resource development from the grass-roots community level and higher organizational levels through appropriate leadership development. Its guiding premise is that the need for leadership arises at every level: in communities, the need is for self-reliance; in non-governmental organizations, flexibility and creativity must be bought to bear on problems of national interest; in universities and other educational institutions, leadership capacity for generating and trying new ideas and programs must be strengthened to contribute to the effectiveness of policies and services; and in government, leadership responsibility must be stimulated to reach out to the poorest and most underserved and develop effective policies and programs for health and social development. In short, people at all levels must become informed leaders who can instill new ideas and values.

3. Research and Model Development: A Need for Complementary Development Strategies, Participatory Research, and an Expansion of Human Resource Development

AIHD's Research Division was also established in 1982, and its main function is not to solely promote in-house research activities. Rather, it supports the activities and skills of field personnel who are currently delivering PHC services and are directly involved in PHC tasks in rural and urban areas. In addition to funding research projects, AIHD staff members are also involved in conducting individual projects aimed at supporting the nation's PHC and social development strategies.

One project, in which I am involved, entails the potential roles elderly community members can play as health education leaders. The backbone of Thailand's PHC system is its volunteer village health worker scheme. In virtually every community, village health communicators and volunteers serve as the first referral in the nation's health delivery system. But while deployment of health volunteers is one main thrust of many national PHC programs, Thailand's experience is also showing the necessity to seek out other complementary strategies which are sensitive and responsive to existing

local conditions, especially where the volunteer health worker scheme is weak.

Elderly community members, in view of their high social status and traditional role as health advisors, are being organized into 'Aging Societies' and many have begun work disseminating health information to community members, as well as assisting other communities and district health officials in helping people understand the workings of the local and national health system and how to improve their current health status situation. They have even begun training international health workers.

As effective community-based health educators, the elderly are thus providing us with one integrated leadership and human resource development model which strengthens social resource mobilization, decentralizes communication of health information, and enhances local and national PHC program management. Their on-going popular success as health communicators is based on authentic community participation in an area which now interests and involves many age groups, not just one specific group. This strategy is also showing considerable potential for adaptation and application in other countries where there is a receptive framework for this development activity.

4. Model Development

The Institute's other significant research contributions lie in model development projects. Firstly, the Nokorn Sawan Project for Model Development, funded by the World Health Organization, concerned integrated health systems research encompassing social, cultural, economic and managerial aspects. The goal was to elucidate optimal ways of adding high priority elements to existing PHC schemes, especially those dealing with communicable non-communicable disease control, through the encouragement of local initiatives. In this context, the issues of providing services, guidance, support and supervision from the formal health infrastructure and the identification of feasible ways (e.g., cooperatives) of organizing and financing the enlarged primary health care and community development schemes were investigated. Preliminary reports by local personnel revealed the crucial role Research and Development efforts can play in promoting integrated

community-based health and social development as well as integrated complementary intersectoral leadership development. The most important is that concerned government officers from various agencies and community members must jointly adopt radically new roles and responsibilities towards community organization, leadership, appropriate technology, community financing and management, health services and intersectoral cooperation and collaboration. Specifically, at least eight major criteria must be fulfilled if Research and Development projects are to be minimally effective. These include the following.

1. Projects must build on the existing infrastructure by motivating, strengthening and increasing its organization, rather than trying to replace it outright.
2. Research and Development projects are most effective in communities which already have a high sense of community consciousness as demonstrated by past activities and talking with the people themselves.
3. Project personnel must identify the key community leaders in each major primary health care and or social development area; for example, community health workers for the health sector; teachers for education; farmers for agriculture; businessmen for commerce; headmen for government (interior). Project personnel should then work to unite them into an integrated, complementary, cooperative leadership network if any of the activities are to be successfully implemented and sustained. One leader, by himself, can do little in a community to change behaviors in sectors which he is not involved in heavily. In this way, community organization and consciousness can be maximized.
4. The most effective working style (at least in these Project villages) is through a decentralized village structure. Instead of looking at the village as a large single entity, project personnel must identify smaller groupings (e.g., compounds, hamlets, natural sub-village divisions) and "tailor" integrated income-generating and health activities to fit the resources of these smaller units. This also increases coverage and the sense of community "ownership" in project activities.

5. To increase community self-reliance and the sustainability of project activities after the personnel leave, the latter must actively train, support and supervise community leaders and members on an on-going basis during the project period.
6. Research and Development efforts which focus on income-generation must take into account the interests of other communities within that geographic or social setting, and they must not try to over-shadow existing activities or the authority of any one person or leadership group.
7. As repeatedly stressed, Research and Development efforts are most effective when government personnel work in teams, rather than separately.
8. Research and Development projects are most effective if the community and project personnel work out an on-going information dissemination strategy, such as regular meetings, public displays of information, and the like. The problem-solving process can then become a natural process rather than an artificial, project-initiated activity.

5. Information and Documentation: A Need for Networks

Information is power, and the need for efficient information networks is crucial for several major reasons. First, while the world's biomedical and health literature has undergone exponential growth, the number of persons who have need of information far exceeds those who actually use information. Information management procedures are in need of strengthening to improve accessibility and the appropriate selection of data from different levels. Moreover, public health planners and practitioners alike require a comparative health perspective so that project's and the principles upon which they are based can be applied in different contexts, and those which have not worked will not be wastefully reapplied. But most significantly, a review of existing national and international information services reveals that PHC itself is given superficial coverage. Its differing components and various supporting activities required for successful program implementation, furthermore, are not clearly defined or categorized. This situation arises since PHC data

documents are often different from other routine or even specialized health care information, leading once again to great gaps in the availability and accessibility of PHC information.

To deal with all of these, it is becoming imperative that national and international information networks be established, and AIHD has been involved in this through its position as one of two WHO/SEARO PHC Information Resource Centers (PIRCs) as well as a clearinghouse for the Asia-Pacific Academic Consortium for Public Health (APACPH). Through these, existing experiences and knowledge can be efficiently channeled and utilized in rationalizing and systematizing research and development efforts. They also offer new information on alternatives and approaches for solving technical (e.g., management, production, services) problems, while providing options for minimizing potential future ones. But above all, the information gained promotes better decision-making in all sectors and levels of responsibility as well as the development of inter-institutional partnerships.

Conclusion

In closing, for any educational institution, national government or regional body to implement strategies for cooperation in training and the transfer of technologies and knowledge, they must include at least four main areas, namely, inter-/intra-sectoral cooperation, management and leadership development in relevant fields, social resource mobilization through community participation and training, and the application of appropriate technology through innovative program development.

Accordingly, institutions are required to coordinate their activities more closely with those of the national government, especially as research and development arms of relevant Ministries; their regional and international counterparts; as well as academic, governmental and non-governmental agencies within and outside of their respective regions. For international development agencies, in particular, institutions should present an opportunity for strengthening human resource development and program management in countries without such existing or well-developed capabilities, and concentrating not necessarily on a problem-oriented focus but a target-group

concentration, for it is this group which must act as both receivers and givers of society's benefits. The challenge of educational institutions today is to broaden their research scope to include a more comprehensive approach to social problems —— be they political, economic, health or, more likely, a combination of all —— and wider perspective.

The ASEAN Institute for Health Development is one such model which began as a bilaterally-supported project. It aimed not just at serving national interests, as in many other cases. But, as a Human Resource Development Project, resources were (and are still) shared amongst the ASEAN region as a whole. Presently, AIHD has expanded its networks and services to the international level and amongst both developing and developed nations. It serves as a channel for funneling needed research, training, information and technological resources, even between nations which are not formally and politically aligned, and for which cultural differences sometimes prove to be potent obstacles to health development. The guiding philosophy at AIHD has been "To Serve is to Lead, and To Lead is to Learn". In part and in total, its activities are not to be viewed as ends in themselves, but merely the means to a healthy and well-developed end for all.

THE POLICY OF DEVELOPMENT AND COORDINATION IN HEALTH RESEARCH IN CHINA

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Outline of Modern Health Care

Since the founding of New China in 1949, medicine as an applied science in the study of human life, prevention and treatment of diseases and protection of health has developed at full speed in the past forty years and has been highly appreciated by the People's Government.

In 1951, the first National Congress of Health Work was held in Beijing. A series of important decisions and four proposed principles of health work and medical development were made :

1. to bring health and medical services to workers, peasants and soldiers ;
2. to emphasize preventive medical services ;
3. to unite doctors of traditional Chinese and Western medicine ;
4. to integrate health work and the mass movement.

Background of Medical Research

For the development of China's medical science services, scientific research institutions and scientific ranks were first extensively developed. A total of 386 central and 442 local medical research institutes and numerous medical academic bodies and groups have been set up throughout the country. The Chinese Academy of Medical Sciences, the Chinese Academy of Preventive Medicine and the Academy of Traditional Chinese Medicine were established in 1959 and 1985 in Beijing as directing centers for nationwide medical research. Medical science research in China is carried out mainly in accord with national economic development, sickness among the population, people's health needs and advances in technological development. The fundamental

guidelines are :

1. Coordinated social and economic development in line with medical science is carried out for the development of economics and the realization of the four modernizations.
2. Emphasis is put on medical research which focuses on the prevention of severely endangering diseases and the protection of people's health.
3. Long-term coexistence and the common development of Chinese and Western medicines are sought to inherit and carry forward the medicine of our motherland and to give full play to the superiority of integrated Chinese and Western medicine.
4. Theory is integrated with practice, by paying attention to investigation and study and putting applied study first, though basic theoretical research and technical reserves are stressed.
5. Multidisciplinary collaboration is organized, and concentrated forces are used to implement key projects.
6. Depending on needs and development, advanced foreign sciences and techniques are actively introduced, absorbed and digested and also further developed and renovated.

Before 1984, the medical science research of our country was carried out under the unified leadership of the state in well-organized and well-planned forms. A 12-year, long-range plan of medical science development was formulated in 1956, stressing the crucial problem of scientific techniques that should be used in the prevention and treatment of existing diseases, while importance was attached to basic theoretical research to fill in the gaps in the various disciplines.

Long-range plans or five-year plans were successively formulated in 1963, 1978, 1981, and 1986, determining the direction of medical science development and priority research projects and subjects. As the long-range plans were integrated with annual plans, the tasks were defined with prospective targets, comprehensive programs, and priorities.

In recent years reform of the scientific research system has been carried out, further emphasizing both the integration of medical science research with the prevention and treatment of diseases and the integration

of social efficiency with cost efficiency, so that the achievements of scientific research may be widely used and given full play for the prevention and treatment of diseases and the protection of health. Crosswise connections are emphasized to break the inter-sector and inter-district boundaries and to carry out various forms of cooperation and union. Public bidding systems for scientific research projects and scientific foundations are implemented.

Key Research Areas

In the period of the national "Sixth Five-Year Plan" (1981 – 1985) and "Seventh Five-Year Plan" (1986 – 1990), the National Commission for Science and Technology and the Ministry of Public Health have invited hundreds of famous scientists, medical experts and senior technology personnel of various disciplines to thoroughly discuss the development of medical sciences in China to determine the key research programs, and at the same time to select a number of scientific research projects which have significant influence on national health care. On the basis of these, the "Sixth Five-Year" and "Seventh Five-Year" plans for the development of medical sciences were worked out.

Those key research programs include: 1) family planning; 2) genetics and eugenics; 3) research on the prevention and treatment of major diseases, such as malignant tumors, cardio-cerebral vascular diseases, and viral hepatitis; 4) basic medical sciences such as molecular biology, immunology, neuroscience, endocrinology, pharmacology etc.; 5) medical Hi-tech: such as biotechnology in medicine, biomedical engineering, and so on; 6) traditional Chinese medicine and pharmacology; 7) pharmacology and technology in drug manufacture and bio-products; 8) maternity and child hygiene and nutrition, etc.

National support for major research programs is provided in the following forms:

1) National five-year plan-supported programs, such as etiology of cancer and its prevention and treatment, the related factors prevention and treatment of cardiovascular diseases, biotechnology, family planning, etc.;
2) national Hi-tech programs for new drugs and vaccines, genetic and

protein engineering and gene therapy, etc.; 3) key national industrial experimental programs, such as the new drug experimental base which is being set up; 4) key nationally-funded programs; 5) national Hi-tech programs with new concepts; 6) various special funds, for example, the medical research fund of the Ministry of Public Health, the new drug research fund of the Bureau of Medicine and Drug Administration, the traditional Chinese medical research fund of the Bureau of Traditional Chinese Medical Administration, the fund for family planning and eugenics of the Committee of Family Planning, and so on.

Coordination of Research

Besides the Medical Research Fund, under the Ministry of Public Health, there is the National Committee of Health Science which includes 16 advisory sub-committees taking charge of the coordination, consultation, advising and evaluation work of the nation-wide research or medical sciences. To strengthen the leadership of the prevention and treatment of cancer and cardiovascular diseases, two special Committees of National Prevention, Treatment and Research of Cancer and Cardiovascular Diseases were organized under the Ministry of Public Health. The responsibilities of the National Commission for Science and Technology, the Advisory Committee of Experts and the special committees are to plan scientific research programs, to guide funding programs, to determine the priority programs for support, and to take part in the examination, acceptance and evaluation of those programs.

The control of scientific research programs includes both direct and indirect mechanisms. In direct control, the unit undertaking the program and the principle investigator of the project or program sign a contract with the experts committee or sub-committee on behalf of the Ministry of Public Health or the National Commission for Science and Technology. Indirect controls are carried out through grants and material guarantees, etc. At present, direct control and conduct plans are relaxing gradually. Indirect control and macroscopic guidance are helpful in the step by step enhancement of grant-making and in the adoption bid of methods. The circulation of the

"program guideline" has taken on the nature of inviting tenders and is enthusiastically supported by scientists.

Theoretical Research

To ensure the sustained development of science and technology, the government has attached great importance to basic theoretical research. In 1986, the National Natural Science Foundation was established to specially support theoretical research. The Foundation is composed of six sections : Mathematics and Physics, Chemistry, Geoscience, Material and engineering, Information and Biology which covers research involving medicine, agriculture and other life sciences. As a result, theoretical research has been greatly promoted since the foundation's establishment.

In addition, the government has allocated huge funding to set up more the 70 key national laboratories including about ten which focus on medical research, such as the key Labs of molecular oncology, hematology, oncogenes etc. These laboratories are well-equipped, provided with senior researchers and technology personnel, and allocated with sufficient research funding. Most of them are engaged in basic theoretical research.

Achievements of Medical Research

Under the supervision of the four main guiding principles and the direction of coordinating organizations at various administrative levels of medical research work and the policy of science and technology, medical sciences in our country are developing comparatively quickly. Through meticulous research, smallpox, cholera, plague, relapsing fever, typhoid fever, kala-azar, schistosomiasis, malaria etc. have been wiped out or are being controlled to different degrees. Through cooperative studies and production of vaccines, and through the implementation of free-of-charge vaccination programs to all people, the incidence of measles, diphtheria, whooping cough, scarlet fever and poliomyelitis dropped to a great extent.

In addition, with concomitant solidification and development of the achievements made in infectious diseases control, we have launched an epidemiological and aetiological study of malignant tumors, cardiovascular

diseases, viral hepatitis, and diabetes mellitus.

Prevention and treatment of these diseases is also a major subject of study. For example, a nation-wide cancer mortality survey was organized by the National Cancer Control Office of the Ministry of Public Health. Using a retrospective survey method, leaders and the public, together with professional personnel, were able to complete an investigation of cancer mortality patterns for the years 1973 – 1975. With the help of local representatives the survey extended into villages and neighborhoods, examining cancer mortality patterns for a population of approximately eight hundred million people. The survey took about three years to complete and was carried out under the leadership of health authorities at various administration levels. Over 96.7% of the 30 provinces, municipalities and autonomous regions were surveyed, covering most of the permanent residents of the national administrative units.

Great advances have been achieved in medical research work over the past 40 years, primarily leading to the formation of a medical sciences research system, which consists of institutions at different levels and teams of research workers. In the process, we have preserved and developed our traditional advantages in medicine and also built up and carried forward our new prominent features. Complete success has been achieved in the prevention and treatment of common diseases, thereby winning a tremendous victory in our efforts to care for the people's health. A new era of modernization of medical sciences has already begun, and the policies of renovation, freedom and opening to all, together with the rejuvenation of social activities has provided an immense driving force for the development of medical sciences. However, China is still weaker than advanced countries in terms of its economy and technology. We have few resources to turn to, and the advanced techniques applied in our practical work are insufficient as far as medical sciences are concerned. Moreover, gaps exist in our standards of medical sciences as compared to those in foreign countries. Research funds allocated to medical sciences are limited. Taken together, we must be realistic, proceeding from the actual conditions of our country and finding a way for ourselves. We must be earnest in improving social welfare

and economic benefits, doing every thing possible to effect maximal benefits at minimal costs.

Summary

Summing up the developments and trends of medical sciences both abroad and at home, we can say that an era of great change is now facing us. It can be predicted that by the end of the 20th century or the beginning of the 21st century, challenging medical problems such as tumors, high blood pressure, heart disease and strokes should see successive breakthroughs. We wish, along with our colleagues in different countries, to do our share in the common effort toward making greater contributions to the medical sciences of the whole world.

REMARKS

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I come from a country which ranks 90th in size among the world's countries, but ranks ninth in population. Therefore, we have to be country specific when we enumerate health problems. I will deal with the problems of research and the necessity for having research from another dimension.

In Bangladesh, we have stressed primary health care based on the sub-district. We have union family welfare centers which link up with satellite clinics designed to reach the people in their houses. In the sub-district, we have set up hospitals and health centers but have not yet developed an adequate number of specialists.

Our objectives have tended to be vague. These objectives have to be formulated more concretely and for that we need analysts and analytical tools. For instance, we need to decide whether to link up our primary health care with the secondary system at a national level.

This links with another important field : identifying what equipment and facilities are needed for our research centers. Research centers are not appearing in developing countries, because very brilliant students are diverted to other places or to other fields.

I emphasize that we need some tools and technology from developed countries, including Japan, so that we can successfully build up research centers. We must be able to distinguish the better from the worse to avoid failure. We need continuous research for analytical system development. It should result in not one shot, but multiple shots.

DISCUSSION

In the Discussion, participants emphasized the importance of : 1) priority-setting for research schemes, 2) practical research, 3) integrated research between research institutes and health service providers. But various problems still remain, including limited access to present research output and difficulties in developing institutional capacity in developing countries.

PART 2
FUTURE DIRECTION OF COOPERATION IN HEALTH RESEARCH

Cochaired by: Dr. Akira Oya
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A REVIEW OF HEALTH RESEARCH COOPERATION BY JAPAN

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Types of Japanese Collaboration

Differing from systems in most countries in the world, Japan has diverse channels of medical research funding, rather than a focal point of research funding, as is the case with the Medical Research Council in the UK, Australia and New Zealand. The Japanese system of medical research funding is complicated. Academic health research is supported by the Ministry of Education (MOE), practical health research by the Ministry of Health and Welfare (MOHW), and specified fields by the Science and Technology Agency. All cooperation activities dealing with health improvement to foreign countries are being implemented by the Ministry of Foreign Affairs (MFA).

Therefore, all overseas activities on health research and health-promoting practices are supported by MOE, MFA, and quasi-governmental organizations under those two ministries. The main programs of collaboration by MOE deal with collaboration with researchers in developing countries. There are two programs: the International Scientific (meant as Academic) Research Program, and the Research Personnel Exchange Program directed to developing countries which is implemented by Kobe University under the support of MOE through the Japan Society for Promotion of Science (JSPS).

The cooperative activities of MFA concerning health promotion can be classified into three categories: 1) Transfer of Medical Technology, 2) Strengthening of Research Capability, implemented by the Division of Medical Cooperation, JICA, and Division of Technical Cooperation, MFA, and 3) Institute Strengthening by providing buildings, laboratories and equipment

4and materials for medical research and hospital facilities, implemented by the Division of Grant Aid Cooperation, JICA and MFA.

International Scientific (Academic) Research Program, MOE

Among collaboration programs, the International Scientific Research Program is a unique program of pure international collaboration for research supported by MOE. In the project on leishmaniasis in Ecuador, for example, it has been planned that academic research should be performed outside of Japan with foreign collaborators. Field studies were carried out at a catchment area in the first year and a collaborator was invited to participate in the data processing of the studies the following year. These two types of research are to be carried out in alternative years for about 10 years. Cost of the field study is about $ 60,000 per year, including local running costs of $ 17,000. The system of disbursement of local costs for such things as expendable materials, man-power, rentals and meetings is a special characteristic of this program. This project has been going well for the last five years.

Research Personnel Exchange Program at Kobe University, JSPS-MOE

This big program encompassing various academic fields is supported by JSPS and MOE. Kobe University is designated as the core university in Japan to be linked to the medical institutions and universities in Japan. Kobe University has been conducting health research programs with four foreign countries, in which a core university has been designated in each. The subjects and objectives of the research have been determined by the requests from the foreign country and have been changed from time to time by the agreement of both parties. For joint field studies, Japanese researchers visit the study field to make collaborative studies. For these studies, local running costs are included as in the international academic research programs. Junior researchers recommended by the foreign institutions are invited to a Japanese institution to study a specific field or to start their studies for a doctorate. When a foreign researcher completes his study of his research subject, he is able to submit his dissertation to Kobe University and can

be awarded a doctorate after review.

In this personnel exchange program, the number of researchers going out of and coming into Japan was 27 and 22, respectively, in 1986, 25 and 23 in 1987, and 29 and 17 in 1988.

When the joint research develops to a certain level of satisfaction, a symposium is held by the members concerned, together with experts invited from third countries. Symposiums are held usually once a year but in some years more than once, and the results of the joint studies are contained in the Proceedings published after the symposium.

Technical Cooperation, JICA - MFA

Technical cooperation in the medical field has been implemented according to the Colombo Plan guidelines the same way as other types of technical cooperation are carried out by Japan. Technical cooperation is usually organized into one package composed of 1) dispatch of Japanese experts, 2) invitation of trainees to Japan, and 3) donation of small amounts of equipment, vehicles and materials necessary for technical transfer. As for local running costs, a Japanese expert is allowed to spend within $ 130 a month, and, in the case of collaborative health research, another $ 770 will be added. If more funds are necessary for the local running costs, they should be borne by the recipient country as per the principles of the Colombo Plan.

Technical Cooperation Combined with Grant Aid Program

Grant Aid Programs are mostly related to institute strengthening and involve: 1) construction of hospitals, laboratories, health research institutions, primary health care centers, national institutes of health, 2) provision of equipment, vehicles and materials necessary for these newly-built institutions, and 3) necessary materials as in (2) above, for disease control (like malaria). In many cases of grant aid cooperation in health promotion sectors, technical cooperation is often necessary and is combined with grant aid. The type of technical cooperation is mostly technical transfer by on-the-job training. Nevertheless, operational health researchers are some times necessary after construction of health research institutions for evaluation of produced

biomedical regents and for activities related to disease control.

An example of this type of technical cooperation combined with a grant aid program is the Kenya Medical Research Institute (KEMRI). The results of collaborative research there have been published in international and Japanese journals.

Non-Governmental Organizations (NGO)

Most NGOs are interested in promoting health development practices in the most unhealthy areas. Some foundations offer research grants for research on health care done in Japan and some for international activities. As with those in other countries, NGOs have individually characteristic ways of carrying out their activities.

Among Japanese NGOs, the biggest and most influential one is the Sasakawa Memorial Health Foundation, which has a regular budget of about $ 1.4M yearly, besides receiving **ad hoc** contributions for specific global disease-control programs, such as those for smallpox eradication in the past and AIDS control at present. The foundation has long been interested in leprosy control in the world and 90% of its regular budget is spent for that. In leprosy programs, the main component is the development of detection and treatment practices for leprosy cases in endemic areas. In addition to that, collaborative research on treatment regimens, vaccine development and fundamental studies on leprosy immunology have been supported. Collaborative research on parasitic disease control has also been supported by 10% of the regular budget. These include research on schistosomiasis control in the Philippines, epidemilogical surveys and treatment of parasitic infections in Central Africa and studies on etiologic species and transmission of gnathostomiasis in Thailand. Training on parasite control in Thailand, and personnel exchanges with China in the parasitological field are also supported.

Program Evaluation and Proposals

1) The International Academic Research Program by MOE has been successful due to its planning, selection of participants, composition of budget items, including local running costs and invitation of foreign

collaborators.

2) Most NGO programs are satisfactory, since the programs are established according to specific disciplines and are based on goodwill and within available funds.

3) Personnel Exchange Program implemented by Kobe University and supported by JSPS and MOE is also a good program for developing research activities in collaboration with foreign researchers. The size of the program, including both the number of researchers exchanged and total budget is, however, too small and should preferably be enlarged. Since programs are designed and implemented only by a limited number of staff in the International Center for Medical Research, Kobe University, more staffing in this secretariat is necessary for developing this program.

4) Research components involved in the medical cooperation by JICA-MFA face some managerial and financial issues. Since technical cooperation by Japan is based on the Colombo Plan, which has been ratified by the Japanese Diet, research cannot be done except for technology transfer and training. There is now a common understanding that collaborative research is unavoidably necessary for institute strengthening and research-capability strengthening. And for collaborative research, local running costs are high. At present, to make up for this problem, Japanese experts dispatched from JICA are awarded limited amounts of research expenses to cover the necessities of the on-going project.

In consideration of the above-mentioned issues, it is strongly proposed to establish a new type of cooperation, provisionally called the **the Collaborative Operational Research Program** in JICA, which should be clearly contrasted and distinguished from **the International Academic Research Program** by MOE. The operational research program should be connected firmly to the projects of JICA-MFA for 1) project finding activities, 2) profile studies of proposed projects, 3) feasibility studies, 4) on-going projects, if necessary, 5) evaluation of results after termination of a cooperation project, and 6) manpower development in Japan, so that the number and quality of younger Japanese

collaborative researchers can be increased.

TECHNOLOGY TRANSFER IN HEALTH RESEARCH

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Introduction

It would be most useful to make five concrete suggestions relevant to the general topic of international cooperation in health research.

When embarking on international co-operation in health research, it is necessary first to decide what is the primary objective and we have two choices here.

Is the primary objective to get research done? Or, is it alternatively to strengthen the capacity to conduct research? This is an important choice.

To Strengthen Capacity

My first suggestion is that the primary objective should be to strengthen the capacity to conduct research. If this is achieved, then the second objective of getting research done will follow automatically. If we have decided to strengthen the capacity to conduct research, we then have to decide what kind of research we are talking about. And again, we have two choices. We can concentrate on biomedical research, which includes clinical research of all kinds, and the laboratory-based scientific research relevant to medicine.

Or, alternatively, we can concentrate on essential national health research. The choice is clear: I think the priority must be to strengthen capacity to conduct essential national health research.

Essential National Health Research

Essential national health research is the research that empowers every country, however small, to measure the health status of its population. This is something every country must be able to do: to design appropriate

interventions, to implement them on a pilot scale, to evaluate their success or failure, to implement them on a national scale, and to continue to monitor and evaluate those interventions. The concept of essential national health research incorporates all of those things. It requires skills in epidemiology, in health economics, in medical sociology, and in health services research and other fields, though those, perhaps, are the main ones.

We have to remind ourselves how scarce those skills are around the world, not only in developing countries, but in developed countries also. It would be interesting to compare the capacity of bio-medical research today in the countries around the world with their capacity in essential national health research.

Bio-medical research, on a worldwide basis, is generally stronger than essential national health research, and research activities in epidemiology and health economics related to sickness are very scarce and urgently need strengthening.

Role of Developed Countries

My third suggestion concerns how to achieve these first two objectives of strengthening research capacity and choosing to do it in essential national health research.

If the Japanese government decides to make a major contribution to that area, it is necessary to spend money, not only in developing countries, but also in Japan. I think that is true for all the major donor countries. You have to spend money at home as well as abroad to achieve these objectives, because it is necessary to strengthen the critical mass of expertise in international health.

I am aware that there have been discussions about creating a graduate school of international health in Tokyo. Such an institution could increase the critical mass of expertise in Japan, while strengthening the links with researchers in developing countries.

Similarities in Developed Countries and Developing Countries

My fourth suggestion is that one should not separate health research

in developed countries from health research in developing countries, because all countries face very similar problems. The control of infectious diseases, acute and chronic and degenerative diseases, the problems of organization and financing health services, the management of health services are a few of the problems common to all countries. The British National Health Service is at the moment in the throes of radical reorganization, and we face questions similar to questions faced in developing countries. How should the health services be organized and financed? These common problems are addressed by common research methodologies, and we should not make an undue separation between studies in developed countries and in developing countries. This applies to the idea I mentioned of having a graduate school in international health. There are distinct advantages in making that graduate school in international health part of a school of public health which is also working on domestic issues and not making it a separate institution.

There are also career advantages in taking that course of action. We heard that in Japan, as in all developed countries, there is some difficulty recruiting experts to work overseas in certain fields. In public health, this problem is minimized if one creates a cadre of experts to work on domestic and international public health and health service problems.

To Strengthen Research Institutions

Finally, if we are to strengthen the capacity in essential national health research, we must strengthen research institutions in developing countries. One approach to this is to create a network of schools of public health which collaborate among themselves and support each other.

There has been much talk in the last few years about that idea, both in the Pacific area countries and other parts of the world, but it has not happened yet. But it is an idea worth of serious consideration.

Another mechanism is through "twinning", in which a school of public health or a similar institution in a developed country is linked to a school in a developing country to their mutual benefit. I emphasize "mutual benefit". There has been much talk about twinning but very few examples. One of the reasons why networks of this kind, or twinning of this kind, have

been typically unsuccessful is because they have been grossly underfunded and planned on too short a time scale. Dr. Ramalingaswami mentioned that he thought ten years was the time frame in which one should plan such a collaboration and I agree completely with that. One needs to be looking at a ten-year horizon and one needs to be talking about substantial allocation of funds to make a network or twinning arrangement really successful. If it starts on too small a scale it is not worth doing.

Conclusion

I want to briefly repeat my five suggestions :

1. The major objective in international co-operation or health research is to strengthen capacity.
2. The most important type of capacity is the capacity to conduct essential national health research, with emphasis on epidemiology-related skills.
3. In order to strengthen health research capacity in developing countries, Japan and other developed countries must strengthen their own research capacity.
4. Health research in developing countries and health research in developed countries is similar, and it is the similarities, not the differences, which should be emphasized.
5. Strengthening research capacity requires the strengthening of institutions, which requires long term commitments (at least 10 years) and adequate finance.

The challenges in this area of international cooperation and health research are huge, but so also are the opportunities in 1990 and beyond. Japan's contribution to this has great potential to accelerate progress.

EXPERIENCE AND PERSPECTIVE OF THE CANADIAN INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

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Background of IDRC

The international Development Research Center was created in 1979 by an Act of the Canadian Parliament to "...initiate, encourage, support and conduct research into the problems of the developing regions of the world and into the means for applying and adapting scientific, technical and other knowledge to the economic and social advancement of those regions..."

Although IDRC receives its funding from the Canadian Parliament, it was conceived as an independent catalyst for development research, not as an agent of the Canadian government.

Its twenty-one Governors are appointed by the government, but only eleven are Canadians. Seven of the Governors are researchers from developing countries. The remaining three Governors are from industrialized countries.

In addition to its headquarters in Ottawa, IDRC has regional offices in Montevideo, Cairo, Dakar, Nairobi, New Delhi, and Singapore. About half of its program staff are located in the regional offices.

Aims of IDRC

IDRC's main objective is to support research relevant to development and whose likely results could be used in development work. The Center uses the term "development" to mean a continuing process of social and economic change in which people have the power and ability to decide what changes to make in society, and how to make them. They must be able to

participate equally in these decisions, and to share fully in the results of change.

IDRC believes that this kind of development is most likely to happen when people eat properly, are healthy, have a sense of independence, are proud of their achievements, respect the rights of others and have their rights respected. It supports research which tries to foster these conditions.

The other major aim of IDRC is to strengthen the research capacity and capabilities of developing countries. In order to achieve these objectives, IDRC funds research groups and institutions in developing countries and provides some support to regional networks and institutions in the Third World. This support is designed to build a corps of researchers in each country, and to help develop networks of people and institutions which provide the services needed to get research done and to use its results. Its support for training is closely linked to the research projects.

IDRC's work is guided by certain basic policies :

- To make grants to institutions, not to individuals.
- To support primarily Third World researchers.
- To support applied research whose results could be expected to benefit the poorest members of developing country populations.
- To focus on a limited number of fields.

Operating within these guidelines, the Center has supported more than 3000 projects involving over 10,000 researchers in 900 institutions in more than 100 countries.

The Health Sciences Division of IDRC

The Health Sciences Program has been part of the IDRC program from the beginning. The founders of the Center understood that health is an essential element in development, since it influences the physical, emotional, social, and economic states of both individuals and communities.

The health and well-being of poor people and their communities are the preoccupation of the Health Sciences Division. The Division does not focus directly upon diseases, subjects, disciplines, technologies, or research methodologies. They do, however, encourage the application of disciplines,

methodologies, and technologies to solve health problems facing poor communities.

To create and maintain this focus on people, the Division adopted a holistic model of the ecology of health. The Division's three research programs are derived from this model and form a continuum from the community to national systems back to the community.

The model identifies the major determinants of health as heredity, environment, behavior, and services. IDRC does not attempt to support research relating to heredity, but the other three factors are reflected in their three research programs.

Health and the Community

The Health and the Community Program supports action-oriented, community-based research. The current major thrusts of this program include :

- Assessment of how socio-economic conditions, culture and human behavior affect disease transmission and the physical and mental health and well-being of individuals, families and communities.
- Development and improvement of existing quantitative and qualitative methods for health research from an interdisciplinary perspective.
- Use of participatory strategies for increasing the community acceptability and effective utilization of appropriate health interventions and technologies ;
- Studies on the roles of women and families in health promotion and the prevention and management of disease, especially at the household level.
- Development of more effective strategies for exchanging and using health-related information. IDRC is providing assistance to the Department of Enga, Papua New Guinea for a study in that province where children under five years of age are being seriously affected by diarrhoeal diseases. This project will develop and test a set of prototype health communication materials and strategies, which are aimed at improving the sanitary behavior of the mothers of the affected

children.

- Community-based approaches for identification and analysis of nutrition problems and the development of action-oriented interventions.

Health and the Environment Program

The Health and the Environment Program deals with applied research on the physical and chemical environment as it affects the health of Third World populations. Support to projects is given on the basis of three major themes :

Research support in the **Living Environment** theme addresses the prevention, management, and control of health problems caused by the major endemic diseases, including communicable, vector-borne, parasitic diseases, and "man-made" diseases resulting from ecological disruption.

The Water and Water Use theme provides support for research on water and its use by the community. The current emphasis is on water purification, collection and storage at the community level, and on community level water-testing technologies.

The **Working Environment** encompasses elements in the workplace that can affect the health of workers and supports projects that identify, evaluate, and control these health risks. The current priority is research in agricultural and rural and small industries, especially projects related to high risk populations such as working women, children and uneducated workers at the lower end of the socio-economic scale.

Health Systems Program

The Health Systems Program endeavors to encourage and strengthen collaboration among local communities, academic institutions, non-governmental organizations and health ministries. Four themes have been identified as central to the Program :

1) **Management and delivery of health services** encompasses management processes in health service programs and methods of making these programs more effective and efficient. Research on how systems of health care delivery respond to changing ecological, social,

economic, and demographic conditions is also supported.

2) **Health services planning** includes studies on the optimal use of available resources and the development and application of health technologies, including health information.

3) **Health policy** involves research related to the development and implementation of health policy.

4) **Strengthening research capacity** supports research related to policy analysis, data analysis, and decision-making. Training in health care evaluation and management is also supported. A good example of this type of research is the grant to the National Institute of Health Sciences, Sri Lanka, to support the establishment of a national health services research network combining an academic, non-governmental research organization and government agency expertise. The network will carry out health services research on priority problems and use the results to make recommendations for policy options and actions.

IDRC in Asia and the Pacific

In fact the Division is spending about 27% of its funds for about 28% of its projects in the South Asia and Southeast and East Asia regional offices of IDRC (which correspond roughly to the SEARO and WPRO Regions of WHO).

Conclusion

I will conclude now by noting that this year IDRC is celebrating its twentieth anniversary. It has been using the opportunity to review its successes and failures and to review its role and mode of operation. It was recognized from the outset that research is a high-risk, long-term and often sensitive activity. Nevertheless, the experience seems, on the whole, to have been a very positive one, and the current policies and procedures appear to have served the Center well. In general, they appear also to have served the developing countries well.

But times change, and the field of development research is no

exception. Many developing countries have greatly expanded their scientific and technical resources over the past twenty years. Moreover, increasingly the question is being asked whether the burgeoning research results have translated as well as they might into development action. These are the kinds of issues IDRC is now considering as it develops its plans for the decade ahead.

One thing is certain : IDRC will maintain its focus on people, especially disadvantaged people.

TRAINING OF RESEARCH SCIENTISTS

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Need for Researchers

As opposed to purely clinical, laboratory medical research, research on health care problems requires knowledge of a wide range of fields, as increasing population, environmental and occupational health problems and so on associated with industrial development are creating new types of health care problems.

Some research can be done at the undergraduate level; however, since most public health problems are very complex, researchers require broad knowledge as well as expertise in particular specialities.

Present Status

There are many "Schools of Public Health" that offer a range of degrees, from undergraduate to post-doctorate degrees. These schools are not only found in the developed countries but also in the developing countries. In Korea, for instance, there are six schools for public health training. However, I wonder why there is no School of Public Health in Japan.

In the past, there had been fellowships given under foreign aid agencies, such as the UN or USAID, and many health workers including medical personnel completed the courses.

In Korea some of those graduates become professors, lecturers, and researchers. Unfortunately, others are disenchanted and return to their previous specialities.

Currently, although there are six public health schools and many health workers are being trained, no physicians are applying. The main applicants are pharmacists, nurses, health educators, public administrators, sociologists, and social workers. These people all provide important manpower

for health research, since public health fields are broad and solutions require input from all of them. However, in our institute's health research department, we only have one medical officer. Although professors and lecturers in the preventive medical department and the school of public health are supposed to be conducting research, they focus their attention on teaching. Moreover, insufficient research grants are a great constraint.

In Korea the most important reason why doctors do not join the public health sector is because of the salary situation. Curative doctors at hospitals are paid at least two to three times more than public health doctors. It is true that the physicians in the hospitals work much longer hours than their counterparts, but they were all equal classmates at medical school. The salaries of public health doctors are usually the same as for other public health workers, and this works as the largest constraint against bringing more physicians into public health. Not only this, but clinical professors and lecturers have better opportunities to be promoted and to take study leaves occasionally. The same is somewhat true of professors and lecturers of the schools of public health, but they often get discouraged or lose enthusiasm due to the lack of highly-motivated students. Many well-qualified professors have left the schools of public health to return to medical schools.

In addition, research grants for public health schools are not easy to get, in general, because these schools belong to the Ministry of Education instead of the Ministry of Health. There is one exception, the Korea Institute for Health and Social Affairs, where I work, and, fortunately, we are able to get a reasonable amount of money from the government.

Training of Researchers

In my opinion, the training programs for researchers should be developed as follows :

When adequate teachers and facilities are available within a country, training courses should be held within that country. This is the most desirable and the courses can include internships and practical training programs for public health administration and epidemiology, health education, occupational health, school health, maternal and child health, family planning

and demography, mental health, health insurance, etc.

These programs are necessary not only for the researchers but also for the government officers who plan and administer health-related policies. This is why the locally-developed training program is worthwhile. In conjunction with the classes, there should be a course for local field practice as a kind of internship. This way, all knowledge gained would be timely and usable within the country.

Where the local training programs are not good, it would be best to choose a program in a country with similar ethnic or environmental or social conditions. For example, we receive offers from some European countries, but, because of various differences, the training results in little practical knowledge, except improved English skills. Thus a training course in a place where the social system and environment are different from the trainee's home situation will not be very effective in spite of great efforts made by all concerned. In such a case, then, internship training programs should be developed locally to compensate. The experience gained in a locally-held program can be immediately applied to research work or government planning in the country. It is a serious concern that in our institute people earning doctoral degrees out of the country need about three years of orientation to understand and adjust to the local conditions.

Further Training Courses

As mentioned already in this paper, a training program should certainly contain or be followed by a practical internship. For example, in cases of maternal and child health courses, some period of clinical training in pediatrics and obstetrics should be included.

Doctoral study after a masters degree is often not compulsory but there is a trend in that direction. Some institutes, including ours, require a PH.D. in order to become a Senior Fellow. This is not a bad situation, as long as the doctoral candidate has good knowledge of local conditions. Further doctoral training can then further nourish the knowledge he already has.

Other training

Not only the differences of social background present problems in international training, but also so does language. It is, therefore, ideal that the masters' and undergraduate courses should be done within the country, so students will not have to shoulder the added burden of another language, which would lessen the effectiveness of their studies. Then further doctoral work may be done out of the country for a comparison with another country's situation.

DISCUSSION

In the Discussion it was suggested donor agencies have to recognize the need for long-term commitments to developing local research capabilities. Ideally, a research institution would be able to stand by itself within a predetermined period and begin to train second and third generation scientists.

It was also mentioned that health systems research has to be done with the participation of the people from the planning and implementation stages or it would not be used at all. A comment was made that high turn-over of research staff was a great constraint on building up local capacities. Finally, it was stressed that international cooperation should be profitable to both donor and recipient sides.