PART THREE

OTHER PERSPECTIVES
Chapter XII
EXPERIENCES IN SELECTED COUNTRIES

The previous chapters have examined health manpower policy development in WHO, and how it has been shaped by interactions with countries — analyzed according to eight major policy objectives. In order to learn about the dynamics of health manpower development (HMD) as a whole in Member States, with respect to the interplay of all objectives, field studies were made in six selected countries.

Selection of countries

The countries studied were chosen because they are developing ones; they are located in Africa, Asia and Latin America: Barbados, Costa Rica, Ethiopia, Gabon, Indonesia, and Malaysia.

The choice of these countries resulted from a combination of factors involving: (1) identification of a number of countries that deviated significantly in their supplies of human health resources from statistical indices that would be "expected" on the basis of their GNP (gross national product) per capita; (2) the suggestions of WHO regional offices; and (3) the willingness of the country to participate in the study.

In so far as the HMD process is inevitably influenced by a country's level of socio-economic development, it should be helpful to consider the findings of these six country field studies in some logical relationship to this level. Accordingly, an estimation has been made of each country's level of development based upon three widely accepted indices: (a) GNP per capita, (b) rate of literacy, and (c) average life expectancy for males. In order to convert the GNP measurements into numbers expressible from 0 to 100, they have been converted into index numbers with the highest one (Gabon = $3776) represented by 100. Then an average has been calculated including this index along with the percentage literacy rate and the figure (in years) for male life expectancy. This composite average is designated the P/L/E Index.

Using the P/L/E index as an approximate measurement of the country's overall level of development, the six countries studied have been ranked in Table 7. The use of this multifactor index may give a more reliable impression of a nation's general development than the use of per capita GNP or any other single measurement alone. Accounts of health manpower developments in each country will be presented in the ranking order shown in Table 7.

For each country, we shall present the highlights of the information gathered according to the following topics:

Background: major social and political circumstances which could be expected to influence the country's health sector, in general, and its health manpower development, in particular;

HMD process: noteworthy features of health manpower planning, production, and measurement;

WHO relations: major recognized impacts of WHO on the national HMD process, the country's recognized impacts on WHO, and proposals for the future.

In conclusion, we shall offer some observations on any general inferences that may be drawn from the six country field studies.
Table 7. Six selected countries by index of development, based on GNP per capita, literacy, and life expectancy (P/L/E index), from sources around 1978

<table>
<thead>
<tr>
<th>Country</th>
<th>GNP per capita</th>
<th>GNP index</th>
<th>Literacy %</th>
<th>Male life Expectancy (years)</th>
<th>P/L/E index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>US$ 110</td>
<td>2.9</td>
<td>10.0</td>
<td>36.5</td>
<td>16.5</td>
</tr>
<tr>
<td>Indonesia</td>
<td>US$ 300</td>
<td>7.9</td>
<td>62.0</td>
<td>47.5</td>
<td>39.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>US$ 930</td>
<td>24.6</td>
<td>60.0</td>
<td>65.4</td>
<td>50.0</td>
</tr>
<tr>
<td>Gabon</td>
<td>US$ 3776</td>
<td>100.0</td>
<td>12.4</td>
<td>41.9</td>
<td>51.4</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>US$ 1240</td>
<td>32.8</td>
<td>88.0</td>
<td>61.9</td>
<td>60.9</td>
</tr>
<tr>
<td>Barbados</td>
<td>US$ 1940</td>
<td>51.4</td>
<td>98.2</td>
<td>62.7</td>
<td>70.8</td>
</tr>
</tbody>
</table>

**Ethiopia**

As shown in Table 7, this country in the north-eastern part of Africa is minimally developed, according to all three indicators used. Its population in 1978 was 30 000 000, the vast majority of whom are rural and engaged in agriculture.

**Background.** Clearly relevant to the current health sector in Ethiopia, and to the HMD process within it, was the social revolution in 1974. After centuries of monarchical rule and essentially feudal conditions of life and land-ownership, a massive famine in 1973 led to mutiny by the army, dethronement of the Emperor, and the establishment of a socialist state. Extensive land reform was instituted, and centralized planning (with some input from local communities) was started in many sectors, including health. The people have been organized into Farmers' Associations (FA) in the rural areas, and the Urban Dwellers' Associations (UDA) in the urban areas, also known as Kebeles.

**HMD process.** The new revolutionary government has prepared relatively comprehensive plans for a regionalized network of health facilities, to be staffed by designated types of personnel. Precise plans for training of these personnel have not been finalized, but the general blueprint, towards achievement of which efforts will be directed, involves six levels as follows:

1. At the community level, for each FA and each Kebele there is at least one community health agent (CHA) and at least one "certified" traditional birth attendant (TBA).

2. At the next higher level, for each 10 000 people there is to be a health station, staffed by three health assistants. Currently 1336 such health stations exist and an additional 2000 are planned, for a total of 3336.

3. For each 50 000 population there is to be a health centre, staffed by one physician, two or three nurses, one sanitary, one laboratory technician, one pharmacy technician, three health assistants, plus clerical and maintenance personnel. There are now 127 such health centres, and a total of 327 are currently planned.
(4) The next level is intended to have a medium-sized hospital staffed by 2 or 3 physicians plus allied health personnel.

(5) In each of the 14 health regions in Ethiopia (plus the national capital, Addis Ababa) there is to be a regional hospital with one physician for each of the major specialties (internal medicine, surgery, paediatrics, and obstetrics-gynaecology), with the necessary allied personnel.

(6) In the national capital there is already one major central hospital with a full range of medical and surgical specialists and other staff.

It is hoped that the above blueprint can be implemented during the years 1981-1990.

Regarding health manpower production, the major past achievement in Ethiopia was the Public Health College at Gondar, discussed in previous chapters. During more than two decades during which this WHO-supported institution operated (1954-1975), a total of 1229 auxiliary health workers were trained — about 60 per year. These were distributed as follows:

<table>
<thead>
<tr>
<th>Health Officers (4-year course)</th>
<th>Community Nurses (3-year course)</th>
<th>Sanitarians (2-year course)</th>
</tr>
</thead>
<tbody>
<tr>
<td>432</td>
<td>421</td>
<td>376</td>
</tr>
</tbody>
</table>

Currently only the training of sanitarians is continuing at Gondar.

Since the 1974 revolution, the other training programmes have developed as follows:

Community health agents (CHA for the associations) — a 3-month course, predominantly on preventive measures. In each region there are to be 5-10 field training centres, each producing about 100 agents per year. Eventually at least one CHA is to serve each of the 23 000 farmers' associations and of the Kebeles. The same applies with TBAs.

Health assistants (for the second-echelon health stations) — an 18-month course for these personnel, formerly known as dressers. Schools for this training already exist and are based at hospitals; they have been expanded from 4 to 10 currently. There are now 4000 health assistants, and 11 000 are to be available by 1990.

Nurses — their training formerly required 3.5 years but is now being reduced to 2.5 years. There had been 7 nursing schools graduating about 40 nurses each per year (total of 280); in addition, there was the Gondar course for community nurses. Now the conventional registered nurse (RN) course will be unified with the Gondar-type community-oriented course in 4 larger schools training 100 nurses each (total of 400 per year).

Laboratory technicians — an 18-month course to train junior technicians, operated at the Central Laboratory in Addis Ababa. After 3 years of laboratory experience, and 9 months of additional training, the candidate becomes qualified as a senior technician.

Sanitarians — a 1-year course, which continues to be given at the Gondar Public Health College.

Pharmacists — a university curriculum that formerly required 4.5 years and is now reduced to 4 years.

Pharmacy technicians — formerly trained in a hospital-based 2-year course; now integrated with university training of pharmacists in a 2.5-year course.

Physicians — formerly a university programme of 7 years (2 years premedical and 5 years medical); from 1964 to 1976, only 113 physicians had been graduated. The curriculum has now been reduced to 5 years (1 year premedical and 4 years medical) with the output expected to become 120 graduates per year. The new medical curriculum will attempt to integrate basic and clinical sciences, and to emphasize community health throughout all 5 years — including 12-weeks' field experience. Undergraduate medical training has also been started at the Gondar College.
Postgraduate education of physicians in Ethiopia is just beginning. Continuing education is offered for upgrading dressers to become health assistants.

Regarding health manpower management, a major problem is the geographic maldistribution of physicians, and other health personnel. In the three largest cities, with 6% of the national population, there are located 69% of the physicians, 76% of the laboratory technicians, 80% of the pharmacists, and 60% of the nurses.

There is also inappropriate use of health personnel (e.g. administrative work being done by sanitarians). State-employed specialists in medicine sometimes see private patients during official hours. Because salaries are low and working conditions poor, many allied health personnel abandon health work after being trained. The health teams produced by the Gondar school, although a big step forward, functioned poorly. Supervision was weak and community participation lacking. Some health officers eventually entered medical school, and the others became rural clinicians, doing little public health work.

It is hoped that the new government programme will recapture the original Gondar public health spirit, under the pyramidal health service structure of six levels, as described above.

WHO relations. The persons interviewed spoke favourably of the value of WHO fellowships, of the WHO collaboration in establishing the Gondar Public Health College in 1954, and of the help in strengthening the medical school in 1964 and later. The Gondar school emphasized rural needs, a preventive orientation, and the health team concept - producing an initial (though small) cadre of trained health personnel.

The major influence of WHO's HMD programme, however, has been regarded as conceptual, stressing the importance of health manpower planning and training, the value of teacher-training, and especially of the integration of health services and health manpower development. The Alma-Ata Conference in 1978 had a distinct influence on Ethiopia's plan to train community health agents to provide primary health care at the village level.

Further WHO collaboration is needed to stimulate improvements in the career structure of health personnel, to extend continuing education, and to strengthen personnel management (utilization); it is needed also for the training of health planners and for generally stimulating the output of greater numbers of all types of health personnel. There is also a desire for further fellowships, consultants (particularly short-term), workshops (especially if they can be held in Africa), and the provision of medical equipment and vehicles. The principal criticism of WHO work concerned bureaucracy in the administration of fellowships and consultancies.

The main impression derived from the field study of Ethiopia is the strong emphasis being given to planning and to the development of an organized and expanded national health system. A crucial aspect of this planning is accelerated training of several types of health personnel to work in teams to cover the entire population. Improved geographic coverage is evidently expected to result from the output of greater numbers of physicians, health assistants, community health workers, and others.

Indonesia

This large nation of some 13 000 islands in South-East Asia – the most heavily populated being Java – has a population of more than 143 000 000, as of 1978. It is mainly agricultural, but has resources also in crude oil, minerals, rubber, and other products.

Background. Independence after two centuries of colonial rule was achieved by Indonesia in 1949, following Japanese occupation and four years of liberation struggle. The socioeconomic situation of this developing, non-aligned nation, favours private market enterprise.

HMD Process. Plans for a national health centres programme were started in Indonesia about 1969-1970. Norms were established for physicians and other health personnel to staff these facilities in relation to the populations to be served. In the Ministry of Health there is a Planning Bureau and a Centre for Education and Training of Health Personnel. A third body
concerned with medical and dental education is the Consortium of Health Sciences, which was established by the Government, under the Directorate-General of Higher Education, within the Ministry of Education and Culture; it is made up of the deans of medicine and dentistry aided by a full-time secretariat.

Peripheral health units in the provinces submit estimates of their needs to the Ministry of Health, where the Planning Bureau compiles figures on nationwide requirements. In recent years, however, the number of physicians trained have, in fact, been greater than the government health system could absorb, although the output of nurses has been reduced during the last three years due to the reorganization of the nursing and midwifery educational system. However, even with the decreased number of graduates, there are not enough posts at present to absorb all the graduates.

Inability of the government health services to absorb personnel is due partly to a policy requiring financial support of health services from the provinces as well as from the Ministry of Health. Provincial governments, in turn, receive grants from the Ministry of the Interior, but this money must support numerous local services. Furthermore, as stated by the field investigators, the unplanned but critically important private sector are largely responsible for the major problems of the Indonesian health system. This sector is composed in part of purely private medical practitioners, pharmacists, and others who engage in private practice, but principally of government health personnel doing remunerator work in their free time; the latter is allowed because official salaries are admittedly low - a vicious circle, in a sense, in that the low salary scale is accepted because it may be supplemented by private earnings. To cope with these problems, a special 'Manpower Planning and Development Group has recently been set up in the Ministry of Health; it is exploring ways to achieve closer relationships with the Ministry of Education.

With regard to health manpower production, the training of physicians, dentists, and pharmacists is done principally in universities, which are supervised by the Ministry of Education. Other allied health personnel are produced by the Centre for Education and Training in the Ministry of Health. This centre operates schools for training nurses and allied health workers.

There are 25 schools of medicine, of which 13 are governmental and 12 are private. The public medical schools graduate 1300 physicians per year, and the private ones only about 200. There are mixed sponsorships also in other university-level training institutions: in dentistry, 6 public schools and 2 private ones with an aggregate output of 240 dentists a year; in pharmacy, a combined total of 6 schools graduating 210 pharmacists a year.

Training in the public professional schools is largely government-financed, but there are annual entrance fees that must be paid privately. In all professional schools, moreover, students must purchase textbooks and also bear the living costs of any field studies required.

The curriculum in all the medical schools is designed on the classical European model, requiring 7 years of basic science and clinical studies. At the same time, faculties are attempting to respond to a national call for community-oriented medical graduates. The Consortium of Health Sciences is pressing for a balance between the clinical sciences and a community orientation, but this seems to be difficult to achieve.

Community medicine is taught mainly in connexion with the delivery of primary health care at the local level. The teaching is impaired, however, by the weak links between this level and the next higher levels of intermediate care (health centres and small hospitals) and specialized care (larger hospitals). Medical faculties are responsible to the Ministry of Education, while health facility personnel come under the Ministry of Health; this adds to the problems.

In government-owned schools, of which there are 103, the education of nurses and allied personnel is fully government-subsidized.

There are 98 privately-owned schools which receive partial aid from the government; of these, 65 are schools of nursing. In addition, there are 15 nursing schools operated and owned by the military. There are many applicants, particularly in nursing, but the output is not adequate to meet the numbers requested by the health services, both community and hospital. The present basic educational programmes in nursing are of two types, both of
which are three years in length. The "health nurse" programme takes in graduates of the junior high school (9 years) and the Academy of Nursing programme admits graduates of senior high school (12 years). The University of Indonesia plans to start a generic baccalaureate programme in nursing in 1982. Since 1975, the 24 different types of nursing and midwifery training programmes have been reduced to the two types mentioned.

The training of auxiliary nursing and midwifery manpower has been discontinued, except in Irian Jaya. The modifications in nursing education aim at preparing all nursing manpower to be able to carry out specific tasks in community health work as well as in hospitals. This goal includes the retraining of graduates of the old programmes to provide them with competencies equivalent to that of the graduates of the new programmes.

Regarding health manpower management, as noted above, the number of government posts is not sufficient to absorb the approximately 1500 medical graduates each year. The Ministry of Health budget has been providing for only about 800 new positions annually; since a period of public service is required (usually 3-5 years) before medical licensure, the balance of 500 medical graduates have to wait until an official post opens up. The national network of health centres, noted earlier, is supposed to provide the necessary posts eventually, but they do not as yet. Perhaps it is encouraging that 50% of physicians posted in the currently established health centres want to stay on - although an important reason is the opportunity they find for private practice (and even other forms of private business) in the same community. In any event, many more health centres are needed to achieve population coverage for health services. A number of the graduates are also employed by other ministries.

The community health promoters, replacing assistant nurses since 1978, have not yet been trained in significant numbers; this training is done in health centres. In rural districts there is a great need for continuing education which has not yet been met. The problems most frequently reported in health manpower management is the strong attraction of private practice to government physicians, both in cities and rural areas; this means that after official working hours, medical service is rarely available at the health centres.

WHO relations. The major impacts of WHO on the HMD process in Indonesia, according to national observers, has been in policy formulation. The decision in 1978 to train community health promoters was essentially an outcome of the Alma Ata Conference. WHO has also collaborated with Indonesia in the strengthening of its medical schools, in convening an appreciation of teacher-training, in various workshops on selected subjects, and in provision of teaching equipment and materials. Respondents in the country field study were not aware of any special impact of Indonesia on WHO policy formulation.

WHO fellowships are especially popular, even though they entail several problems. English language requirements are often a barrier (particularly for nurses). The candidate hesitates to learn the language without knowing whether he or she will be chosen for a fellowship; yet a knowledge of the English language is required for the initial application. There are also complaints about lengthy bureaucratic procedures, inadequate stipends, and the unsuitability of some of the training to Indonesian needs. It is interesting to note that most fellowships are wanted for study within Indonesia.

Workshops have been appreciated when they have been short and on appropriate subjects (which is not always the case). Training programmes on health service management are particularly desired. WHO, it was stated, should also help Indonesia in obtaining assistance from UNICEF, the World Bank, and other international agencies.

Over the years, Indonesia has, indeed, been able to train greatly increased supplies of health personnel. Physician resources have been increased so that the ratio of physicians to population improved from 1:66 000 in 1952 to 1:14 900 in 1976. Likewise the nurse supply improved over the same period, from a ratio of 1:12 800 to one of 1:5400. Yet, as noted, there are serious disparities between the production of physicians and nurses and their utilization in the public services. The major difficulty seems to be inadequate financing of the public sector of health care, side-by-side with a large and flourishing private sector. Private earnings by physicians aggravate inequities in several ways. Not only do private services go only to the minority of people who can afford to pay for them, but the opportunity for private earnings reduces pressure on the government, in a sense, to
pay higher salaries for work in government health services. Even teaching in medical schools is impaired by the fact that the interest and attention of most of the teachers are diverted by their private practice. These problems are evidently well recognized by personnel in the Indonesian Ministry of Health.

Malaysia

This mainly peninsular nation in South-east Asia has a population of about 13,000,000. While largely agricultural, it has substantial resources in tin and rubber.

Background. In 1957, Malaya became independent from colonial rule, and later was combined with North Borneo (Sabah) and Sarawak to become Malaysia in 1963. In 1965, the island-state of Singapore broke away as a separate nation.

RMD process. Even before national independence and the formation of Malaysia, general socioeconomic planning, including health planning had begun in this country. As part of the Rural Health Services Scheme, started in 1953, a programme for training auxiliary nurses, sanitarians, and midwives was planned and implemented to staff the rural health facilities. In the Ministry of Health, as in all the ministries, there has been a Planning Committee, designing five-year plans. Formal five-year planning had started in Malaya in the 1950s (while still a British colony), and the first Malaysian five-year plan began in 1966. The country is now into its fourth five-year plan (1981-1985), so that the concept of health manpower planning has become fully accepted.

The initial goals of the rural health programme called for one physician, stationed at a main health centre, to serve a population of 50,000. The surrounding sub-health centres, each serving 10,000 people, would be staffed by various auxiliary personnel, and the most peripheral units - midwife clinics - were to be staffed by assistant midwives. As more personnel were trained (see below), the standards of service and staffing were raised. Both types of health centre are now to be staffed by physicians and others, and the peripheral units (formerly midwife clinics) have been broadened in scope by training the assistant midwives and other auxiliaries to provide general primary care. This conversion of the Rural Health Services Scheme from a three-tier to a two-tier system took place in 1973. Each health centre staffed by a physician is now expected to serve a smaller population of 15,000 to 20,000.

In the fourth five-year plan (1981-1985), no further acceleration of health manpower output is planned, since the network of health facilities - except in Eastern Malaysia (Sabah and Sarawak) - is not expanding rapidly enough to absorb all the personnel being trained. Many personnel, especially physicians, are therefore being lost to the private sector. The major health manpower emphasis of the fourth five-year plan is on continuing education and management training. It is also planned to accelerate the geographic coverage of Eastern Malaysia, by the use of mobile health teams with community health aids. More attention will be paid also to the potential use of traditional healers in all three major Malaysian ethnic groups - the Malay bomohs, the Indian Ayurvedic physicians, and the Chinese traditional medical practitioners. About 50% of the population of Eastern Malaysia remains still to be covered, although in Western Malaysia only 3-5% of the people do not have access to primary care.

To coordinate manpower training with the development of personnel in all sectors of Malaysia, the Prime Minister's Office has recently set up a Manpower Development Board. Inter alia, this Board is expected to coordinate the production of physicians and other professional health personnel by the universities, under the Ministry of Education, with the health service requirements of the Ministry of Health. When the output of the medical schools reaches 450 physicians per year, it is expected that the personnel losses to private practice will have peaked and the needs of the public sector will be met.

Regarding health manpower production, the training of rural auxiliary health workers since 1953 has already been mentioned. Since the restructuring of the rural health programme in 1973, Malaysia has had the special task of broadening the capabilities of the trained assistant midwives to include general primary health care, and also of training new auxiliaries for this wider role. Each of these primary health care workers is supposed to serve about 2000 people.
Since 1966 other allied health personnel have been trained at the Public Health Institute in Kuala Lumpur, the national capital. This school, under the Ministry of Health, trains public health inspectors (sanitarians), public health nurses, and health education officers—turning out about 120 of these personnel per year. These are all postbasic courses. Basic nursing, for example, is taught in a 3-year curriculum at 8 hospital-based schools, all under the Ministry of Health. Also under the wing of the Ministry is the renowned Malaysian Institute of Medical Research, functioning since 1905; the IMR trains laboratory technologists and has recently expanded its activities to produce 120 medical technicians and 120 laboratory assistants per year. The training of all allied health personnel by institutions under the Ministry of Health is quite appropriately suited to the needs of the Ministry's health services; it is planned and monitored by the Training and Manpower Division of the Ministry.

With respect to the preparation of physicians, which comes under the Ministry of Education, adaptation of the output to the requirements of the health services has not yet been achieved. There are now two university medical schools. Together, both schools now graduate 190 physicians per year, and additional Malaysian students go to medical school abroad (Singapore, Australia, and elsewhere)—returning to Malaysia along with other foreign medical graduates. A third medical school will be opened at the university in Penang in 1981, and soon after this it is expected that about 500 physicians per year will enter the health sector in Malaysia. This number is larger than the requirements of the public side of the Malaysian health system but, as noted above, it is needed to compensate for the steady losses of physicians into private medical practice. The law requires that all physicians licensed in Malaysia since about 1970 must work for 3 years in the Government services, and those whose education was Government-sponsored (about 75%) for an additional 4 years. After these periods are over, however, most of these physicians go into private practice, which is much more lucrative.

The medical school curriculum in Malaysia is relatively conventional, with 1 year of premedical basic sciences, 2 years of preclinical science (anatomy, physiology, etc.), and 3 years of clinical work. There is a limited degree of teaching that integrates the preclinical and clinical disciplines. At the University of Malaya, community medicine is taught in each of the last 4 years; it consists of epidemiology, biostatistics, behavioural science, nutrition, maternal and child health, demography, and medical sociology. A period of several weeks is spent on a field placement in a rural health centre, where a research project is also carried out. It is expected that a similar programme of community medicine will soon be introduced at the National University Medical School.

Postgraduate medical education is offered at the University of Malaya, but it is not well developed for general practitioners, who constitute the great majority of private physicians. Specialists are almost all in government posts, since (as in the British Commonwealth generally) they are mainly hospital-based and almost all hospitals are public. In 1975, the University of Malaya started a postgraduate public health programme leading to the MPH degree. The plan is to train enough district medical officers capable of administering all services in their districts, including the hospitals; at present, their administrative duties are limited to the preventive services.

Regarding health manpower management, the staffing of rural health centres and peripheral clinics has made substantial progress in the last decade. At almost all health centres—both the main centres and the former sub-health centres—there are now a physician, a dentist, a hospital assistant (the Malaysian term for a multipurpose health auxiliary who treats common ailments), a drug dispenser, and a laboratory assistant. These personnel provide medical care. For preventive work there are a health sister (graduate nurse), a midwife, assistant nurses, a public health inspector (sanitarian), overseers (assistant sanitarians), and labourers. The midwife clinics, as noted, are being broadened to become general primary health care units; the training of community health aides is also being considered to foster greater community participation in the management and use of these clinics.

The major problem in health manpower utilization, as already suggested, is the loss of so many physicians to private practice after their official obligations have been met. This internal brain drain is more serious than the external brain drain to the United Kingdom, made possible by the British recognition of Malaysian medical degrees. As the cities become saturated with private medical practitioners, some of these leave to settle in small rural
towns and villages. While this has its value, of course, the fact remains that only a minority of rural people can afford to pay for private medical care. Yet about 50% of all Malaysian physicians are now entering private general practice. Accepting this reality, the University of Malaya Medical School is establishing an academic Department of General Practice. At the same time, the expectations of the people for improved specialty services in the smaller district hospitals are rising.

WHO relations. Malaysian health leaders speak very positively of the collaboration with WHO. In the Rural Health Services Scheme - the nation's major health activity for extending coverage to the entire population - WHO consultation was involved from the beginning in 1953. Every few years, further cooperation was solicited and offered, and in 1968 a major 15-year review of the programme was carried out by WHO. This review found substantial progress in rural health services and advised continued WHO cooperation, with certain administrative changes - such as a broadened scope of functions at the midwife clinics and a mandatory period of service for Malaysian medical graduates in order to get posted to the sub-health centres. During 1969-1971, further studies were made by the Malaysian Ministry of Health, in cooperation with WHO, leading to the implementation of these and other changes. By 1980, in the modified two-tier framework of the rural health system, facilities had expanded to 324 health centres and 1393 community clinics. Not all of these were fully staffed with the requisite personnel, but progress towards this goal was being made rapidly.

WHO fellowships were also assessed very affirmatively, and were considered particularly valuable for advanced training of medical school teachers. During the course of interviews, it was stated that with the task of building up 3 medical schools, long-term WHO consultants would be valuable. Additional workshops for continuing education were also recommended. Collaboration on health services research was also advocated, particularly to help solve problems in the management of the health system. None of the persons interviewed could comment on any impacts of Malaysia on WHO.

All in all, Malaysia appears to be a country making rapid progress in the development of health manpower responsive to the requirements of its health services. Health manpower planning has long been accepted and is actively pursued. Manpower production is proceeding systematically for both professional and auxiliary health personnel. The most vexed problems relate to manpower utilization, particularly because of the substantial and continued departure of physicians from the public to the private sector. The bulk of this internal brain drain is into general practice in the cities; urban family incomes seem to be sufficiently high to provide a fairly large market for these practitioners, so that the inequities caused by this urban private sector are probably not great. In the rural areas, traditional medicine is still a major resource of health care (especially for low-income families), but the medical and auxiliary staffing of the network of facilities in the Rural Health Services Scheme is steadily becoming strengthened. Full population coverage with primary health care is expected to be attained in Western Malaysia by about 1985. Improvements are also being achieved in the staffing of district hospitals providing secondary care. In the less developed areas of Eastern Malaysia, progress is slower and full population coverage will doubtless take longer.

Gabon

As shown in Table 7, Gabon, with a population of only 534,000 inhabitants, according to the 1977 estimate, has by far the highest GNP per capita of any of the six countries studied but is rather low according to the two other criteria of development. This paradoxical situation is explained by the recent discovery of large reserves of crude oil in the country.

Background. Up to 1959 Gabon was part of French Equatorial Africa. Independence was achieved in 1960, and its political regime has since been one of the most stable in Africa. Large foreign investments were made after the discovery of oil around 1970. The Government is oriented towards private enterprise in most fields.

HMD process. Health planning began in 1965 with the publication of the "Plan quinquennal" (1966-1980) for health services development. Then, the Ministry of Economic Development and Planning established three-year plans, in collaboration with the Ministry of Health.
For health manpower production, the principal resource in Gabon is the Ecole nationale de Santé et d'Action sociale (ENSA). This major centre for training health personnel was established in 1962, soon after national independence. With only 31 teachers, however, ENSA is still staffed below the level necessary to meet the demand for its graduates. It is under the supervision of the Ministry of Health.

In 1974, the Centre universitaire des Sciences de Santé (CUSS) was founded under the Ministry of Education; it offers a 7-year curriculum for training physicians, and its initial class was due to graduate in 1981. The school was supposed to have been modelled after the multiprofessional University Centre for Health Sciences at Yaoundé, (United Republic of Cameroon), with the objective of training personnel to meet local health realities. It is not clear, however, if its training programme will permit it to reach its objective; the medical curriculum was based largely on the advice of foreign consultants, with a rather conventional programme: 4 years of theoretical studies followed by 3 years of practical work. The teachers are mainly expatriates. It is expected that courses will soon be developed for nurse-anæsthetists, midwives, and laboratory technicians - to permit team teaching.

Regarding health manpower management, there are currently 206 physicians in Gabon, almost all located in the capital, Libreville. Of these, 135 are employed in the public sector (although engaged also in some private practice) and 71 are entirely in the private sector. Similarly, there are 35 pharmacists, of whom 13 are entirely private. Of the 19 dentists, 10 are in public employment and 8 are wholly in private practice. The nurses and other allied personnel who have been trained at ENSA are bound to work for 10 years in the Government service.

Large industries in Gabon are required by the Government to provide general health care (i.e., more than occupational health services) for their employees and their families. Companies do this either by engaging their own medical staff or by sending their people to private medical offices. Recently there has also been developed a social security scheme, which is expected to provide general medical care to government employees and other groups through its own medical staff.

Major problems in the governmental health services of Gabon relate to a weak organizational structure for supervision. There is also no continuing education. On the other hand, with the comparative wealth of this country, physicians and other professionals are attracted from elsewhere, and there is little if any out-migration. There are internal losses from the public sector of health care to the private sector, however; even though governmental salaries are relatively high, earnings in the private sector are even higher.

WHO relations. Over the last 30 years, these relations can be described in three phases. In the decade 1950-1960, Gabon was still a colony. No health personnel were trained locally. "Médecins Africains" (the equivalent of medical assistants) were prepared in Dakar (Senegal). Nurses were trained in Brazzaville and Ayos - cities also outside the territory. In this period WHO played no direct role.

The years 1960-1970 were the first decade of national independence. With support from WHO fellowships, a few of Gabon's young people studied medicine in Quebec or France; some remained abroad. The Plan quinquennal for the development of health services was established in collaboration with WHO and permitted initial programming of the needs and of training programmes for health personnel. Then WHO consultants advised on the development of training programmes for nurses and midwives at ENSA.

The decade 1970-1980 brought the discovery of oil and other minerals, launching the so-called "economic miracle" of Gabon. The CUSS was started, the ENSA was expanded, and programmes were developed in maternal and child health care, communicable disease control and other health fields. Problems of coordination between CUSS and ENSA, and between both of these training programmes and the country's health service needs have still to be worked out. The WHO emphasis on promoting primary health care, however, is accepted in principle, and Gabon looks to WHO for collaboration in solving the many problems in its health system.

Gabon, in summary, presents a picture of a country which still has to face up to its sudden wealth. With major foreign investment, its great natural resources have been rapidly exploited, but the country has yet to develop an infrastructure of educational and health
services to bring corresponding benefits to its people. As an independent nation, Gabon is still young, but with proper planning, a strong political commitment to its espoused goals, and hard work, its future in health and many other sectors could be among the brightest in Africa.

Costa Rica

This small Central American republic of 2 100 000 population (1978), became independent in 1821. It is predominantly agricultural - coffee and bananas being its major exports - but, unlike its neighbours, is composed mainly of small family-size farms rather than large plantations.

Background. Since a civil war in (in 1948-1949), Costa Rica has had democratically elected governments and political stability. It is one of the few nations in the world that has only a domestic police force and no standing military establishment. In the health sector, like most Latin American countries, it launched a social security programme providing medical care to employed workers and their families; this was in 1943. In 1975, all hospitals were brought under the social security programme, while all preventive services and other functions were kept under the Ministry of Health. Some 95% of the population is entitled to publicly financed medical care. Nevertheless, the overall health system remains fragmented, with services provided by: (1) the Ministry of Health, (2) the social security programme (CCSS), (3) a national water and sewage-disposal organization, (4) a private medical care sector, and (5) several semi-autonomous institutes dealing with alcoholism, malnutrition, industrial injury insurance, and other problems. Currently the largest number of health personnel are in the social security programme (20 000), with another 3000 in the Ministry of Health, and 5200 in other organized entities - for a total of 28 200.

HMD process. Largely because of the fragmentation of health responsibilities just noted, health planning in Costa Rica has not been comprehensive. In the Ministry of Health there is a health planning unit which relates to an overall National Office of Planning; this unit has done planning, however, only for the programmes of the Ministry itself. Within this limitation, sophisticated planning methods were developed in theory, but it was not possible to apply them (see Chapter IX on the planning objective and the difficulties with the DANO-CENDES methodology).

With the major reorganization of health activities effected in 1975 (all treatment facilities and services assigned to the CCSS and all prevention services to the Ministry of Health) pressures developed for a stronger and broadened scope of health planning. Many of the older hospitals that had transferred from the Ministry to the CCSS required upgrading, and costs rose sharply. There were also signs of an over-production of physicians (see below). To cope with these problems, in 1979 the President established a National Health Council, representing all the major health entities as well as the University, for the purpose of coordinating the divers health programmes.

In the late 1960s, the Ministry of Health planning unit had put forward a rather traditional plan for gradual extension of the Ministry's services during the decade 1970-1980. In the early 1970s, however, certain events occurred which led to a sweeping revision of this plan in 1974. The new plan called for total population coverage with health services by 1980. The events leading to this much more ambitious health plan may be briefly summarized.

First there was the "San Ramon Experience". In 1950, a young physician had been posted for his rural social service to the town of San Ramon. He left in 1952 but returned in 1954 as director of the local hospital. From this position, he had the authority to stimulate the organization of several local health stations in nearby villages; these stations were staffed with health auxiliaries who had received very brief training at the hospital. Between 1955 and 1970 10 of these stations had been established. The auxiliaries also made home visits to give vaccinations and advise on sanitation. The innovative San Ramon physician then submitted a proposal to the Ministry of Health for an extension of his idea throughout Costa Rica; the response was an agreement in theory but no financial support. He approached the CCSS, with similar negative results. Then he managed to get his proposal submitted directly to the Congress, and money was finally provided to the Ministry of Health
for extension of the San Ramon idea. Help was obtained also from UNICEF. By 1978, the country was blanketed with 307 primary health care posts. Opposition to the whole concept, which had come initially from the medical profession and pharmaceutical companies, changed rapidly, and particularly physicians and nurses supported the programme from its inception in 1974.

Beyond these events leading to extension of primary health care throughout Costa Rica, a substantial contribution to health planning was made by the integration of the CCSS and Ministry of Health programmes in 1975. The combined network of hospitals included 17 facilities, along with the ambulatory treatment clinics. These resources were estimated to be making physician's care accessible to 95% of the population (87% being employed persons and their families, plus 8% indigents). The remaining 5% of people are self-employed families using the private health sector.

With all these developments, one can appreciate why around 1974 the health planning goal for the decade was changed to the attainment of total coverage of the Costa Rican population by health services by 1980. This success story should not, however, obscure the fact that many problems remain. The administrative structure of the Ministry of Health, with its preventive services, divides Costa Rica into 5 regions, while the social security treatment programme has 7 regions. More important, there is still inadequate coordination between the Ministry's pre-1974 oriented health centres and the CCSS ambulatory treatment clinics. The new National Health Council is expected to tackle these problems. If it succeeds, such coordination should contribute also to more effective health manpower planning. The urgent need for this planning is manifest when considering Costa Rica's many activities for the training of health personnel.

Health manpower production in Costa Rica has been a robust process, but lacking in central or coordinated planning. A medical school was established at the University of Costa Rica in 1959 with 150-180 new students each year. In 1976, therefore, a second medical school was organized under purely private auspices; the faculty is composed entirely of private medical practitioners. The first class is expected to be graduated from this school in 1981, with 50-60 new physicians. In addition to the output of these two medical schools, another 30 - 50 Costa Rican students attend medical schools abroad and then return home. In 1981, between 230 and 290 additional physicians will enter the health scene in Costa Rica - a number much greater than the system can absorb.

Postgraduate medical work in Costa Rica is offered as residencies in the CCSS hospitals. Occasional continuing education sessions are sponsored by the Costa Rican Medical Association at the expense of drug companies.

A school of nursing has been functioning in Costa Rica since 1917 and, after several changes, the hospital-based 3-year nursing course was reinstated in 1971.

There is a shortage of professional nurses in Costa Rica - a total of only 762, half of the number of physicians. To compensate for this shortage, a much larger supply of nursing auxiliaries has been trained directly by the Ministry of Health since 1954. A 9-month course for these auxiliaries was offered by the Ministry each year, until it was terminated for lack of funds in 1979. In 1972, however, a similar course for nursing auxiliaries was started by the CCSS. Unlike practices in other countries, candidates for this training must be secondary school graduates. At first these auxiliaries were prepared essentially for hospital work, but in 1973 an additional month of training in rural health was added, and these women now serve also in rural posts. Altogether there are about 2760 nursing auxiliaries. Although their salaries and social status are relatively low, they are obviously an important personnel resource.

Several other types of health personnel are trained by the Ministry of Health. Sanitary inspectors are trained in a 9-month course. Laboratory technicians and nutritionists (perhaps dietitians would be more accurate) are also produced. The latter staff some 600 centres for education and nutrition of malnourished children in the 1-6-year age group.

Since 1974, health assistants on the San Ramon model have been trained by the Ministry of Health to provide primary care at rural posts. These are all secondary-school graduates, but the course requires only 4 months. To draw the attention of local people to the rural
posts, health aides or responsables are also trained in a 4-day period. In 1967, limited training was started for traditional birth attendants (TBAs); after 500 had been trained this effort was stopped. TBAs-attended childbirths are now down to 12% of the total.

Regarding health manpower management in Costa Rica, reference has already been made to the imminent (or already present) surplus of physicians. Because of the saturation of the cities, many of the young physicians sent for social service to a rural post decide to stay on. This, of course, helps achieve amore balanced geographic distribution of physicians, although there is naturally greater concentration in San José, the national capital. For example, there are now (in 1980) 25 paediatricians outside the capital; there were only 5 in 1975.

Because of the very broad population coverage by the CCSS and Ministry of Health programmes, there is only a rather small market left in Costa Rica for private medical practice. This is in striking contrast to some other countries visited in this study. Few physicians are exclusively in private practice, although about half of the CCSS physicians spend some time in such practice. Within the CCSS facilities, there is a relative surplus of specialists (some having done postgraduate study abroad), so that many of them are doing work more appropriate to general practitioners. Because so many CCSS physicians are hospital-oriented, when they are stationed in ambulatory care clinics their work seldom has a proper community orientation. Also, clinic nurses sometimes work as secretaries under exceptional circumstances.

When the CCSS and Ministry of Health programmes were integrated in 1975, steps were taken to make the salary scales equivalent. Uniformity has not yet been achieved, however, and personnel in the Ministry facilities are still at a disadvantage. Public health physicians are particularly poorly paid, so that they often abandon this work. Sanitarians are also poorly paid in the government service, and many of them leave for private jobs.

In the health centres of the Ministry of Health, there is talk about "teams", but personnel relationships are often said to be poor. Relationships between professional nurses and nursing auxiliaries are frequently strained. The latter would prefer to work under physicians, although this may basically reflect the lack of preparation of nurses in the skills of supervision and teamwork.

WHO relations. Reference has already been made to WHO collaboration with Costa Rica in the field of health planning, which was not very successful. In the field of nurse training, advice given by WHO led to upgrading the entrance requirements and to extending the length of the curriculum; in the light of the eventual shortage in professional nurses, this advice may not have been the best. On the other hand, the very useful programme for training nursing auxiliaries, started in 1954, was also launched with the advice of WHO consultants. In the early days of the University medical school, WHO was likewise helpful.

Probably the major impact of WHO on Costa Rican health manpower policy came through a 1972 meeting in Santiago, Chile, which catalysed the change in the Ministry of Health goal for 1980 towards an emphasis on primary health care through the use of briefly trained auxiliaries (known in this country as the "San Ramon model"). Advisers from WHO worked side by side with staff from the Ministry of Health in the planning and development of the rural health programme and later of the community health programme. Later, at the 1978 Conference of Alma Ata, Costa Rican leaders were inspired by the goal of "health for all" through primary care.

Good use has been made of WHO fellowships, although there are many criticisms of the lengthy administrative processes involved in arranging them. Some of the overseas training provided, it was said, has been inappropriate to Costa Rica's needs. A preference was expressed for bringing expert consultants to Costa Rica. In fact, of all WHO money spent for Costa Rica in recent years, 75% has been on consultants, only 21% on fellowships, and 4% on equipment.

No one interviewed in this country was aware of how Costa Rica may have influenced WHO. For the future, it was thought that WHO should hold more workshops in the field of health service management. WHO has been helpful sometimes in impressing upon the Government the basic importance of the health sector. More of this type of influence is wanted.
Costa Rica, in summary, is a small but relatively prosperous Latin American country with remarkable political stability since its civil war ended in 1949. Its democratic parliamentary structure, the absence of military forces, and its pattern of widely distributed land ownership impart to the country a strong orientation to social welfare.

Since about 1970, the gradual extension of a network of rural posts, where health auxiliaries provide primary health care, has been impressive. Combined with the coordination in 1975 of the Ministry of Health and social security programmes, this has led to coverage of virtually the entire population with health services.

Nevertheless, the pluralistic structure of the health system leaves several problems unresolved. In spite of the formal coordination between the Ministry of Health and the social security programme, there is still a wasteful dichotomy in the delivery of preventive and curative services. With respect to health manpower, planning has been inadequate, with little relationship between estimates of need and the numbers and types of manpower produced. There are evident surpluses of some types of personnel (e.g., physicians) in relation to the health system's requirements, and shortages of other types (e.g., nurses). The University has been staunchly autonomous and unresponsive to objective health manpower needs.

While important health indices (e.g., infant mortality and communicable disease rates) have shown great progress, the need is now felt for more attention to geriatrics and chronic disorders. Much more careful planning of health manpower is wanted, with adaptation of manpower production to the needs of the health services. On the training of health auxiliaries, nurses, and other personnel, there are calls for more perceptive evaluation.

**Barbados**

This small attractive island in the Caribbean has an estimated 1980 population of 260,000. Although its major economic base for many years was sugar production, in recent times its principal income has been derived from tourism.

**Background** After more than 300 years of colonial rule, independence was granted in 1966. As shown in Table 7, there is a remarkably high rate of literacy (nearly 100%), and a long life expectancy, which accounts largely for Barbados having the highest index of development among the six countries studied. In 1976, the Barbados Labour Party was elected to power, replacing a party which had ruled during the country's first ten years of independence. Among other things, the Labour Party pledged to introduce a national health service, for which the planning has played a central role in health affairs.

**HMU process.** After independence, health planning in the Ministry of Health was conducted through a Planning and Priorities Committee, chaired by the Minister; some of this Committee's ideas were utilized in Caribbean regional planning through the Caribbean Community Secretariat (CARICOM). In 1978, a major change occurred in the general health planning process, and in health manpower planning in particular. In the Ministry of Health a Project Design and Implementation Unit (PDU) was organized to undertake the planning of the national health service which the Barbados Labour Party had pledged in its manifesto to bring about. Prior to the establishment of the PDU, health planning in the Ministry had been essentially pragmatic and short-term, intended to respond to the needs of the Ministry, including the principal hospitals on the island, a number of health centres, and all preventive services. However, the private sector, which provided most of the primary care—including services from private general practitioners and pharmacies—maintained a somewhat distant relationship with the public health sector. A stronger linkage is now forged between the public and private sectors through the implementation of the national health service.

Health planning for the national health service (NHS) thus requires the consideration of all Barbadian resources, public and private. While secondary and tertiary care were quite well organized, primary care in Barbados was very fragmented; it was given not only by general practitioners for private fees, but also at the Casualty Department of the large Queen Elizabeth Hospital (without charge), at government health centres (prevention only), and in other ways. The NHS plan tentatively adopted calls for coverage of the island with an array of primary care teams made up of a physician, two nurses, and a clerk) to be
developed at the sites of general practices, health centres, and newly constructed polyclinics. Every resident would be entitled to obtain integrated primary health care from one of these teams. Staffing the teams, however, would require some increase in the supply of general practitioners and additional training for community nurses.

Regarding health manpower production, Barbados physicians have been trained mainly at the University of the West Indies (UWI), with its principal medical school campus in Kingston, Jamaica. This school has essentially emulated the British model, requiring 6 years since 1978 (before then 5.5 years). The first year offers preclinical sciences, the next 3 years are for clinical studies, and the last 2 years are for clinical internship in a hospital. The internship years may be taken in Barbados (at the Queen Elizabeth Hospital), and every year 20 or 30 of the 100 entering medical students do so; these include 8-10 Barbadians. Most of these students have scholarships, and the Government of Barbados may require service from them in the public system (if there are positions to be filled), on the basis of one year of service for each year of scholarship support.

The Department of Preventive and Social Medicine at UWI is quite strong, and offers instruction in each of the first 4 years (in Jamaica). The third and fourth include field visits to public health facilities and a period of work in a Jamaican village. Postgraduate residencies for specialty training are offered at the public hospitals in Jamaica, Barbados, or Trinidad. Limited continuing education for all physicians in Barbados is offered by the UWI in three half-day symposia each year.

Since 1977 nurses have been trained in Barbados at a hospital-based school, under the supervision of the Ministry of Health, which operates the hospital. Evidently more nurses were trained than could be employed by either the hospitals (including one private facility and several district hospitals for long-term patients) or the public health programme, because some are unemployed or underemployed. There is no tuition, and five applications are received for every place in the nursing school. This is no doubt related to the large number of secondary school graduates (virtually 100% of the young men and women).

In 1978, a decision was made to transfer the nursing school from the hospital setting to the new Barbados Community College, under the Ministry of Education, but this matter has not yet been finalized. This college also trains laboratory technicians and other allied health personnel. Since 1975, public health inspectors have been trained in the Ministry of Health through a 2-year course at the Barbados Community College.

Nursing assistants have been trained at the Queen Elizabeth Hospital (a 1-year course) since 1970; about 40 per year had been turned out, but this has now been reduced to 20. Postbasic nursing qualifications may be earned in midwifery and in psychiatric nursing.

Regarding health manpower management and utilization, the problems of fragmented delivery of primary care and the misuse of the hospital casualty department were noted above. As a small island, Barbados has no significant problem of physician maldistribution; almost all points can be reached by road within a half-hour. Primary care, as noted, is provided mainly by private general practitioners, but some of them also work part-time for the Ministry of Health, staffing district clinics for the indigent. Another problem of misuse pertains to the engagement in part-time private practice of most of the salaried hospital specialists; a substantial share of patients seen in these private offices (including a few multi-specialty group practices) have ailments that are more appropriate for a general practitioner. (This wasteful tendency would be corrected by the NHS plans, if they are implemented.)

The salaries of full-time public health physicians are relatively low, and several of these posts are filled by expatriates. Nursing salaries were formerly low, but have now been raised. The time of public health nurses, it is reported, has often not been fully utilized.

WHO relations. In general, Barbadian health personnel speak favourably of WHO. Fellowships have been considered very helpful, in spite of complaints about bureaucratic procedures. Workshops, consultants, and publications were, on the whole, assessed positively. For their conceptual content, World Health Assembly resolutions are always studied by the decision-makers in the Ministry of Health, although Barbados does not always send a delegate to the Health Assembly. Meetings of the Pan American Health Organization (WHO Regional
Office for the Americans) Directing Council, however, are attended regularly. The crucial political decision to launch a national health service in Barbados — stressing primary care by general practitioners and a more efficient system of drug distribution — was influenced by observations in United Kingdom, rather than by WHO.

The proposal to transfer nursing education from the hospital (under the Ministry of Health) to the Community College (under the Ministry of Education) was made on the advice of PAHO. This seems contrary to the policy advocated by WHO, and the change may lead to lesser integration between health manpower development and health service needs. (One must recall, however, that even with the nursing school under the Ministry of Health, the output was not perfectly adjusted to the service requirements.)

For the future, Barbados would like collaboration with WHO in training personnel for the management of the new NHS. In general, the NHS plans have sharpened the recognition of a need for more sophisticated and continuous manpower planning in Barbados. The private general practitioners need continuing education in preventive medicine if they are to be entrusted with immunizations and with maternal and child health work (now done separately in the Ministry's health centres). Training in geriatric nursing is also needed if the district hospitals for long-term care are to be improved. These illustrate subjects, it was stated, on which Barbados would have wanted workshop training.

In spite of its long colonial status and only recent independence, Barbados is a small, moderately developed and highly literate island country. The election of the Labour Party to power in 1976 led to ambitious plans for a national health service that would start with the reorganization of primary care to be available to everyone. Secondary and tertiary care are already well provided at one major hospital. The NHS goal has stimulated much more serious health manpower planning than in the past, and it is expected that manpower production — particularly at the postgraduate level — will be capable of meeting the requirements of the NHS system in the near future.

Comment

This completes a summary of the field observations in six developing countries, of diverse social, economic, and political character, with respect to their policies and practices in health manpower development — against the background of their total health systems and with respect to their relationships with WHO. Various inferences may be drawn about the nature of the whole HMD process, in relation to the sociopolitical characteristics of countries, but this will be done in the concluding chapter.
Chapter XIII

WORLD TRENDS IN HEALTH MANPOWER

Previous chapters have attempted to characterize health manpower development in countries over the last 30 years, and the interactions of WHO and its Member States which influence WHO health manpower policies. WHO, in turn, has promoted over these decades a changing blend of health manpower policy objectives. What has been the net outcome of all these activities?

World movement for health advancement

One must never lose sight of the dependence of health manpower policies and programmes on overall national health policy developments in countries. As discussed throughout this study, since the end of the Second World War there have been in most countries enormous changes in the structure and functioning of national health systems. The economic support for health services has become increasingly collectivized—whether through the mechanism of public taxation, social security, or voluntary insurance. Patterns of health care delivery have become increasingly organized—very strikingly for hospital care but also for ambulatory care. While the greater part of this organization has applied to the curative services, preventive services of a wide spectrum have also expanded in both their quantity and their degree of organization. Much of this development has required the construction of physical facilities for both bed patients and ambulatory patients; hospitals and health centers have been established in greater numbers and capacities, and in many countries they have become linked in regional networks of institutions.

Related to and supporting of all these processes have been large and varied programmes for the training and development of health manpower. With advances in the health sciences and greater understanding of the dynamics of health services, an increasing diversity of types of health manpower has been trained and used. The responsibilities that were once carried by a lone village healer are now distributed among scores of categories of health personnel. Considering the subspecialties in medicine, nursing, and other fields, the disciplines in which personnel are trained and used must now be counted in the hundreds. For the provision of primary health care, auxiliary health personnel—with diverse skills, titles, and roles—have been trained in a vast variety of models throughout the world.

In the text below, we offer data, to the extent available, on the observable trends in health manpower development in countries over the last 30 years. We shall try to present this information in accordance with the series of policy objectives that took shape over these years as a result of the dynamic interaction between countries (Member States) and WHO. First we shall examine the trends toward eight specified objectives, in so far as they can be defined. These accounts will correspond to the sequence of chapters in Part Two of this study. Then we shall explore the relationship of manpower trends to the health status of populations—the improvement of which is the ultimate purpose, after all, of all national health systems. Finally, we shall try to evaluate the impact of WHO, if any, on health manpower trends—conscious always that WHO is itself a creature of the world community of nations, and its influence can only be in many ways limited.

Trends in the quantity and types of health manpower

The expansion since the Second World War of both the types and numbers of health personnel in countries has already been observed. In more detail, what has happened?

In 1955 there were, according to a WHO investigation, 603 medical schools in the world; by 1975 this number had risen to 1,116. This increase of 85% in the world total of medical schools occurred while the global population increased during the same period by about 42%.

More significant is the distribution of these schools between developing and developed countries. If data were available for a century ago, 1880, there is little doubt that 90% of the world’s medical schools would be found in Europe, North America, and other industrialized regions, and only 10% in the rest of the world. In 1955, of the 631 medical schools through—
out the world, 40% were in the developing countries. By 1975, of the 1124 medical schools, 54% were in the developing countries. In some of the developing country schools, moreover, the number of students per class is excessively large.

This growth of medical schools between 1955 and 1975 has yielded an increased output of physicians in the world. In 1950, there were 1.1 million physicians globally (excluding the People’s Republic of China, the Democratic Republic of Korea, the Democratic Republic of Vietnam, Bhutan and Sikkim); by 1970 the number in the world (with the same exclusions) had doubled to 2.2 million. This increase was substantially greater than that in the growth of the population. Thus the ratio of physicians to population had increased from 57 per 100 000 in 1950 to 79 per 100 000 in 1970. By 1977 there were 81 physicians per 100 000 globally.

These growth rates in medical manpower were, of course, not the same everywhere. Data on physicians by major world regions are available from unpublished statistics of the World Health Organization. The ratios per 100 000 population in the years 1950 and 1975, along with the rate of growth of these ratios, are as follows:

<table>
<thead>
<tr>
<th>World region</th>
<th>1950</th>
<th>1975</th>
<th>Rate of growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>9</td>
<td>11</td>
<td>22.2</td>
</tr>
<tr>
<td>America</td>
<td>89</td>
<td>112</td>
<td>25.8</td>
</tr>
<tr>
<td>Asia</td>
<td>22</td>
<td>31</td>
<td>40.9</td>
</tr>
<tr>
<td>Europe</td>
<td>92</td>
<td>168</td>
<td>82.6</td>
</tr>
<tr>
<td>Oceania</td>
<td>88</td>
<td>114</td>
<td>29.5</td>
</tr>
<tr>
<td>USSR</td>
<td>131</td>
<td>288</td>
<td>119.8</td>
</tr>
</tbody>
</table>

From this tabulation, several meaningful contrasts may be observed. In Africa, for example, the density (ratio to population) of physicians was the poorest of any major world region in 1950, and it remained the poorest in 1975; yet over this quarter century the physician density increased by 22.2%. The next lowest density was in Asia (excluding China) for both years, although the rate of growth was still substantial, at 40.9%.

Compared with Europe and the USSR, however, the tempo of growth of physician density in both Africa and Asia was slow. Europe had many more physicians to start with in 1950 than either Africa or Asia, and by 1975 its density had increased by 82.6%. Thus the gap between these developed and developing continents had actually widened across the 25-year span. Nevertheless the actual densities of physicians in both of these developing continents increased to a certain extent. We know, of course, that the health needs of the developing continents are vastly greater than those of Europe and North America, while their physician density differentials are just the opposite; and it is these disparities that constitute one of the great challenges to international health work.

Separate data are available for Latin America (rather than the Americas as a whole) for the years 1950 to 1970. In several Latin American countries, the establishment of new medical schools was especially frequent in this 20-year period. The density of physicians accordingly rose from 471 per 100 000 in 1950 to 654 per 100 000 in 1970, an increase of 38.9% (greater than that for the Americas as a whole in 1950-1975).

Trend data for other classes of health personnel are not so readily available as for physicians, but certain observations are possible. For the 10-year span from 1965 to 1975, for example, the global supply of professional nurses and midwives increased from 124 to 153 per 100,000 population. The rate of growth in density of these personnel in developing countries, however, was much slower than in developed countries - not to mention the very much lesser density in both years. The following tabulation shows the trends:

<table>
<thead>
<tr>
<th>Types of country</th>
<th>Nurses and midwives per 100 000</th>
<th>Rate of growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing countries</td>
<td>1965: 26</td>
<td>1975: 29</td>
</tr>
</tbody>
</table>
Thus, in the developing countries the density of professional nurses and midwives grew by 11.5% over the 1965-1975 decade. Yet in both periods the developed countries had more than 10 times the density of the developing countries, and the rate of growth of this density was more than double the comparable rate in the developing countries.

Unfortunately, these disparities were not compensated by the supply of auxiliary nurses and midwives across the same span of years. For this category of personnel, the trends were as follows:

<table>
<thead>
<tr>
<th>Types of country</th>
<th>Auxiliary nurses and midwives per 100 000</th>
<th>Rate of growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing countries</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.0</td>
</tr>
<tr>
<td>Developed countries</td>
<td>116</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30.2</td>
</tr>
</tbody>
</table>

The rate of growth of the auxiliaries over the same decade is again appreciably lower in the developing countries than in the developed ones.

For dentists the disparities between developing and developed countries have been even greater. In developed countries there were 34 dentists per 100 000 population in 1965 and this ratio rose to 39 by 1975. In developing countries the density was only 5 per 100 000 in 1965 and it remained 5 per 100 000 in 1975. Dental operating auxiliaries (such as the New Zealand dental nurse) had a density of only 1 per 100 000 in the developing countries in 1965 and it remained at this level 10 years later; in developed countries these auxiliaries increased over this decade from 5 to 9 per 100 000.

Laboratory technicians rose in density from 1 to 2 per 100 000 in the developing countries between 1965 and 1975, but from 28 to 43 per 100 000 in the developed countries. Radiological technicians also rose from 1 to 2 per 100 000 in developing countries during the decade, and from 16 to 19 per 100 000 in the developed countries.

In a word, the densities of almost all conventional types of health personnel rose somewhat between 1965 and 1975 in developing countries, but their rate of increase in developed countries was usually much greater. Even though these data are obviously influenced by the accuracy of manpower reporting (which is often weak in developing countries), such deficiencies would not greatly affect trends; in fact, since reporting could be expected to improve with time, the true rise of trend in developing countries might even be less than the above data suggest.

Trends in personnel performance

Several of the health manpower policy objectives analysed in previous chapters relate to the manner of functioning or the performance of health personnel. These would include (a) the objective of improving quality in the sense of academic excellence, (b) the objective of efficiency or economical patterns of work, and (c) the objective of relevance of personnel or the appropriateness of their work to the needs of the people they serve. What is known about trends in these three attributes of health manpower in the world over the last few decades? This is not an easy question to answer, but certain observations may be made.

Regarding quality, one indicator of the conventional concept of scientific qualifications in medicine is the development of specialization. It is generally recognized that much of the incentive of medical graduates to enter specialties results from the highly "sophisticated" and technological approach of their undergraduate schooling.

In the more industrialized and developed countries, the worldwide trend to increased specialization of the medical profession has been very clear. In previous chapters we have noted some of the influences in medical science, health care financing, and population changes contributing to this. We have also taken note of the reaction that arose in many countries around 1970 to stem the tide of specialization, and to give greater attention to the strengthening of general practice or family medicine. Immediately after the Second World War, however, the movement to specialization in the developed countries was prominent. For the decade 1960-1970, a WHO study reports exact changes in 14 developed countries (13 of them European). The proportion of all physicians in specialties in these countries was already as
high as 50.6% in 1960; it rose further, however, to 58.1% by 1970. Moreover the rate of specialists per 100,000 population rose much faster over this decade than the equivalent rate for non-specialists; the density (per 100,000) of specialists rose by 46.8% compared to a rise of only 9.9% for non-specialists.6

In developing countries, data are not available on overall trends in medical specialization; it has undoubtedly been less than in the developed countries, but the trend has surely been upward. Another indirect reflection of advances in academic qualifications of medical schools in developing countries is found in the cross-national trends of physician migration. Before and for some time after the Second World War, the movement of physicians had been predominantly from the developed to the developing countries; physicians went from Europe to the colonies in Asia and Africa. Some years after war, the direction of this flow reversed. As former colonies became independent and increased their output of physicians, many of the graduates left for study and often permanent settlement in Europe and North America. This is shown strikingly for the USA, on which statistical data are available according to the region of origin of the migrating physicians:7

<table>
<thead>
<tr>
<th>Region of origin</th>
<th>Percentage of foreign physicians entering USA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1965</td>
</tr>
<tr>
<td>North &amp; Central America</td>
<td>21</td>
</tr>
<tr>
<td>Europe</td>
<td>26</td>
</tr>
<tr>
<td>South America</td>
<td>9</td>
</tr>
<tr>
<td>Asia</td>
<td>40</td>
</tr>
<tr>
<td>Africa</td>
<td>?</td>
</tr>
<tr>
<td>Other areas</td>
<td>4</td>
</tr>
<tr>
<td>All regions</td>
<td>100</td>
</tr>
</tbody>
</table>

Thus, from North America and Europe the trend of migration to the USA between 1965 and 1973 was downward, while from South America, Asia, and Africa the trend was essentially upward. Similar trends have been documented for the migration of physicians from certain Asian countries (India, Pakistan, and Sri Lanka) to the United Kingdom.

In Chapter VI we discussed the detrimental effects of this migration from less-developed to more-developed countries. Yet it must be realized that developed nations, such as the USA and the United Kingdom, allowed the entry of these foreign medical graduates only when their medical qualifications were deemed acceptable by the recipient country—as shown by passing certain examinations or in other ways. It is reasonable to infer, therefore, that the academic standards of some medical schools in the developing donor countries in these post-war years were approximately similar to those in the developed recipient countries. This says nothing, of course, about the suitability of professional education for the needs of developing countries, but only about the attainment of the goal of higher academic standards (that is, similar to standards in highly developed countries), espoused in the early years of WHO.

Regarding efficiency of work patterns, Chapter VIII discussed the training of health auxiliaries, the use of health teams, and training for effective management of health systems. What can be said about trends in these three types of activity?

Precise data on trends in the availability of multipurpose health auxiliaries in the world are not available. Earlier in this chapter, however, we noted the increased density of auxiliary nurses and midwives in both developing and developed countries (though to a greater extent in the latter), between 1965 and 1975. It may also be noted that over the same decade, the countries reporting to WHO on their supply of multipurpose health auxiliaries rose from 1 to 23 (22 of these, in fact, being developing countries).8 Professional nurses also, of course, contribute to more efficient delivery of health care. Their increased density in the world, therefore, also suggests greater efficiency in the overall use of health manpower.

The trend in the use of organized health teams throughout the world is even more difficult to document. The hospital, as a setting for teams of personnel serving bed-patients, should not be overlooked, and the ratios of hospital beds to population have been increasing.
in nearly all countries. Between 1950 and 1975, the beds per 10,000 population in Ghana, for example, increased from 4.6 to 16.7; in India the ratio rose from 3.3 to 7.8. While in some countries (e.g., Jordan) the hospital bed-population ratio has actually declined — mainly due to the rapid growth of population — the world trend in both developed and developing countries has clearly been towards a greater number of hospitals and more health personnel in them. In fact, in many countries — because of rising health expenditures and for other reasons — around 1970 there were strong reactions that led to deliberate constraints on hospital bed expansion and encouragement of more facilities for ambulatory care.

Health teams for the provision of ambulatory care have also undoubtedly been increasing, in comparison with isolated practitioners of either modern or traditional medicine. In many developed countries, such as Canada, Japan, the United Kingdom, or the United States of America, much of this teamwork takes the form of private group medical practice. In all the socialist countries, teams of personnel are the general rule for delivery of ambulatory care, both preventive and curative, at health centres or polyclinics. In most developing countries, particularly in rural areas, various types of health centre have increasingly become the setting for delivery of health services to low-income populations (who are, of course, in the great majority). This was evident in all six of the countries studied and discussed in Chapter XII. In so far as governmental (as against private sector) health services are being provided in virtually all developing countries, teams of personnel in health centres, or even at small health posts, at primary health care level, are increasingly the standard mechanism for furnishing health services.

Finally, in relation to efficiency, the training of personnel for effective management of health services has manifestly been receiving increased attention in countries of all types. Such training is given in many settings — in universities, in Ministry of Health training schools, and in various hospitals and health centres. The specialized school of public health, where academic degree programmes are offered, is a major setting for training in health care management. The first WHO World Directory of Schools of Public Health, describing the situation in 1965-66, identified 87 such schools in 42 countries. Only five years later, in 1970-71, a subsequent WHO directory identified 121 schools of public health in 44 countries. This did not include specialized schools of hospital administration, which also teach health services management and have clearly been multiplying, nor medical schools giving special instruction in public health. Judging from the comments by health personnel in the six countries reviewed in Chapter XII, the demands for much more suitable instruction in health management are much greater than are being met, but even the articulation of the need is a sign of progress on this aspect of seeking greater efficiency in the use of health personnel.

Trends reflecting the relevance of health manpower training to the needs of each country’s health services are also difficult to measure; there is much partial or episodic evidence, however, of advances towards this goal.

We have noted in Chapter X the frequent advocacy in WHO of greater emphasis on the teaching of preventive and social medicine in medical schools. For many reasons, preventive and social medicine (PSM) teaching in medical and other professional schools undoubtedly grew stronger over the years after the end of the Second World War. Epidemiology made great strides, pointing to new methods of disease prevention and control. Society’s demands for organized social action to promote human welfare increased everywhere. Universities were bound to echo these developments, and in medical schools this usually meant the strengthening of PSM teaching.

Precise documentation of this trend on a worldwide basis has not been done, but the trend is evident from observations of several sorts. Prior to the Second World War, it was common for medical schools to have academic departments of hygiene — often linked to departments of bacteriology — concerned with problems of sanitation and communicable disease control. After the war, and especially in the later 1950s and the 1960s, these departments were either replaced or supplemented by departments with a much broader approach — epitomized often by inclusion of the word "social" in their titles. It is noteworthy that the First World Conference on Medical Education, in 1953, discussed the teaching of virtually every basic science and clinical discipline, but the only topic with any PSM flavour was a discussion of tropical medicine. Six years later at the Second World Conference on Medical Education, in 1959, there were four presentations on "Socioeconomic aspects of ... health and disease and the "teaching of social medicine". The Third World Conference on Medical Education,
in 1966, had for its central theme: "Medical education - a factor in socioeconomic development". The Fourth World Conference on Medical Education, in 1972, included no discussion of basic or clinical sciences at all, but was devoted to such subjects as:

- community health needs
- socioeconomic factors of population and society
- patterns of medical care
- health manpower and the delivery of health care
- patterns of professional practice that promote and hinder change
- comprehensive educational planning as a means to initiate change
- teaching the teacher to teach.

The conceptual trend from the technical to the social approach to medical education was quite clear.

A study of trends in the teaching of public health in the medical schools of 19 European countries published by WHO in 1957 provides much evidence of the broadening content and generally increased place of public health in the curricula. It describes three periods in the evolution of this teaching (up to 1952): first, the period dominated by bacteriology and sanitation; second, the period when hygiene on a practical level became separated from bacteriology; and third, the 1930s, when "public health" was replaced by "social medicine, as well as the clinical approach to preventive medicine". In the United States of America, advocates of PSM teaching did not have as great an impact on medical school curricula as they would have liked, although academic attention to the field clearly expanded after the Second World War. In the late 1960s, usually under the umbrella title of "community medicine", the social factors in disease and the social organization of health services won increasing attention in most medical schools.

These trends in the teaching of PSM were not limited, of course, to Europe and the United States. In 1955 the All-India Conference on Medical Education had emphasized PSM teaching, as did the Pacific Regional Conference on Medical Education in 1958. A series of seminars on teaching preventive medicine in Latin America were held in 1956, and in 1961 a conference on teaching of preventive medicine was held in Iran. A meeting in India in 1968 heralded the development of social and preventive medicine in Indian medical schools over the previous 10 years. In the 1970 Heath Clark lectures at the University of London, a glowing report was given of the training in community health that had evolved over the previous 20 years at the medical school in Cali, Colombia. Somewhat similar developments are described also at medical schools in Nigeria, Thailand, Uganda, the United Republic of Cameroon, and other developing countries.

An extensive survey of medical education throughout Latin America was sponsored by the Pan American Health Organisation in 1967. In 100 schools the average amount of curriculum time devoted to PSM teaching was 205 hours, and this was a definite increase over the past. The teaching content included not only such classical subjects as epidemiology and statistics, but also health economics, the organization of health services, and behavioural or social science. In 45% of the Latin American schools there was extramural teaching about family and community problems. The investigator concluded that "the changes occurring in the teaching of the preventive and social aspects of medicine during recent years have constituted one of the most important occurrences in the field of medical education". The new medical schools established in Africa in the 1960s have stressed the assignment of students to rural health centres as the main approach to the teaching of preventive and social medicine. Likewise, in the Philippines third and fourth year students from all medical schools have been assigned for periods to "comprehensive community medicine demonstration areas in rural communities".

This account of the growth of an emphasis on PSM teaching in medical schools throughout the world is far from comprehensive. It does not clarify, furthermore, the extent to which social or PSM concepts have entered into the teaching of basic science or traditional clinical subjects - an approach widely advocated (in contrast to separately identified PSM instruction), though seldom observed. Yet, a stronger place for chairs of preventive medicine, or however the field may be defined in medical schools, may have a long-term impact on the educational approaches of other faculty members. Admittedly, the evidence on this issue is unclear.
Another reflection of the overall objective of relevance in professional training has been the heightened attention given to general practice or family medicine in medical education—advocated for some years by WHO and its expert committees. This is a recent trend and has been more prominent in developed countries—doubtless as a reaction to the excessive development of specialization in those countries during the first 50 or 60 years of this century. The establishment of departments of general practice in medical schools, the development of postgraduate residency training programmes in family medicine, the organization of continuing education programmes specifically for the general practitioner have all been educational responses to the demands in communities—sometimes even in legislative bodies—for a greater availability of physicians (and other health personnel) to provide primary care.

In the 1960s, the swelling proportion of specialists in many industrialized countries and the declining proportion of generalists led to demands within the medical profession itself to increase the social position and financial rewards of the general practitioner. The strategy in several countries was to define general practice as a specialty, requiring prescribed years of extra training, equivalent to those in the conventional specialties. In the United Kingdom a Royal College of General Practice was organized in 1965, and in the United States a specialty of family practice was formally established in 1969. A study of five other industrialized countries in the 1970s—Australia, Belgium, Canada, Norway, and Poland—showed a variety of strategies for strengthening and upgrading general medical practice in all of them. Specialty-type residency programmes were organized, all sorts of continuing education were offered, general practice departments were formed in medical schools, health insurance fees for GP services were raised, pension programmes were started, and so on. In Norway and Canada public authorities built health centres in which the GP could work in a team with nurses and other allied health personnel.

A survey of medical schools of Canada and the United States in 1975 found that the vast majority of them—93% in Canada and 80% in the United States—were offering some sort of family care training programme; these consisted of undergraduate teaching, postgraduate, or both. In the United Kingdom, some special postgraduate training for general practitioners had been offered in Scotland as early as 1952, but rapid extension of these programmes occurred only after 1966; most of these are, strangely enough, hospital-based and require 3 years. It is relevant that in 1966 the remuneration of general practitioners within the British National Health Service was increased and, along with this, Regional Advisers in General Practice were appointed to promote the postgraduate training programmes.

This entire movement for enhancing both the quality and quantity of general medical practice in the highly developed countries, where specialization had become so extreme, has undoubtedly contributed to greater relevance in the work of the medical profession. In the developing countries, where formally recognized specialists still constitute a minority of physicians, this issue has not been so prominent. Continuing education of physicians, as discussed in previous chapters, has often been directed mainly to general practitioners, who constitute the large majority of all physicians. But the major approach to strengthening general primary health care in developing countries, as we have seen, has been through expanded training of multipurpose health auxiliaries. Earlier in this chapter, we noted that up to 1975 even this strategy had not developed to very large proportions. The Alma-Ata Conference on Primary Health Care in 1978 undoubtedly stimulated greatly accelerated training of non-medical primary health workers with broad functions. This was evident in all six of the countries analysed in Chapter XII. Numerous specific programmes of this sort, in which WHO has played a part, have also been discussed in Chapter VII.

Another reflection of world trends toward the relevance objective has been the development of teacher-training programmes. An evaluation of accomplishments in this work for the decade 1969-1979 was recently made. The eight regional teacher-training centres, plus the Inter-Regional Teacher Training Centre in Chicago, USA, were found to be doing much innovative work, although only a few national centres had been established. Their most significant achievement was believed to be the stimulation of teachers, mainly in medical schools, to explore new methods of teaching—such as more careful educational planning with explicit formulation of learning objectives. The greatest weakness of the centres was deemed to be their failure to have a real impact on the education of health personnel other than physicians; much greater attention is needed in the future, it was concluded, on the training of effective teachers for non-physician primary health workers.
Some indication of the degree of adoption of teacher-training concepts in health professional schools of the world is given in a study organized by WHO, on which only a preliminary report is so far available. A key feature of teacher-training is to persuade teachers to define explicit objectives at the outset of any instruction. This global survey, therefore, posed to schools of nursing and medicine the question of whether or not the school used institutional objectives in its educational programme, defining these as:

"A statement describing the expected results of learning experiences as they manifest themselves in the performance or behaviour of the learner, at any level of expertise and for any type of work; these results may be qualified by appropriate modifiers that are defined in the objective itself." 34

For this survey, questionnaires were sent to 337 nursing schools and 614 medical schools, first inquiring if they had formulated institutional objectives. Of the nursing schools, 142 responded affirmatively, and of these 84 (or 24.9% of the total) submitted statements deemed to meet the above definition. Of the 614 medical schools, 164 responded affirmatively and of these 58 (or 9.4% of all) submitted statements meeting the above definition. 35

One may, in general, conclude that interpreting the use of explicit learning objectives as reflecting the type of educational planning emphasized in teacher-training programmes such methods might be applied by about one-fourth of the nursing schools and one-tenth of the medical schools throughout the world. We do not have data for an earlier period from which to draw a trend line, but one may infer that even these small percentages are probably an increase over the past.

Perhaps a more significant reflection of the use of teaching methods that have been effective in preparing students for the relevant health problems in their nations and communities can be gathered from a consideration of the community-oriented health science schools discussed in Chapter X. At the 1979 WHO meeting which established a network of such institutions, there were participants from 18 schools. In the two volumes in the WHO Public Health Papers Series presenting case studies of innovative educational programmes for health personnel (No. 70 in 1978 and No. 71 in 1980), accounts are presented on 27, schools of which 20 were medical schools. If we were to assume that roughly three times as many medical schools in the world are, indeed, community-oriented (along the lines discussed in Chapter X), but have not yet been identified as such by WHO, this would amount to 60. In relation to the 1975 count of 1,116 medical schools in the world, 60 would mean about 5% of the total. Such a crude and arbitrary calculation would accordingly suggest that perhaps roughly one-twentieth of the world's medical schools are now educating physicians in a manner designed to be truly relevant to the health problems of populations to be served.

This whole discussion of trends in health personnel performance - as reflected in considerations of the academic quality of their education, in the efficiency of their use, and in the relevance of their training curricula - is far from satisfactory. We may hope that more complete data will permit more accurate assessments of trends in the future. On the basis of the limited data available, however, one may conclude that over the last few decades the academic quality of health professional education has probably improved - with some positive and some negative consequences (from the viewpoint of meeting social needs). The efficiency of health personnel has undoubtedly increased in most countries, although to an extent far below the true requirements. As for the relevance of health science curricula, one must conclude that in some respects (training in preventive and social medicine and emphasis on primary health care) progress has been appreciable, but in other respects (use of sound approaches to educational planning and processes and community-orientation) only a small beginning has been made. By all three of these indicators of personnel performance, nevertheless, the trends have been in a favourable direction. Yet resistance persists, and the greatest tasks lie ahead.

National health manpower policy issues

Beyond these questions on the quantity and performance of health manpower, one may consider the objectives that involve, in a sense, larger issues of national health manpower policy. These would include the objectives of health manpower planning, full population coverage, and the integration of health services and health manpower development. What have been the trends towards the achievement of these three objectives?
Within the sphere of WHO, we have observed in Chapter IX that in the decade 1962-1972 (Period III of this study) substantial interest arose in national health planning, and in health manpower planning as part of this. Then in 1973 and later, interest somewhat declined, as disillusionment arose on the value of the highly quantitative and theoretical approaches that dominated planning methodology; instead, emphasis was put on achieving political consensus and commitment for health actions based on general assessments of need.

Health manpower planning, nevertheless, usually permits and requires greater specificity in countries than national health planning as a whole. In the developed countries, health care market dynamics, rising costs, and other factors have led to perceptions of needs for training greater numbers of certain types of health personnel and fewer of others. To cite some examples, in Belgium the viewpoint has grown that the country’s physician resources were becoming excessive; in the United States and Canada, it is widely believed that national needs for physicians will soon be met and that a surplus is imminent. In the developed socialist countries, on the other hand, the stock of physicians continues to increase. Australia and the Federal Republic of Germany are other developed countries where the medical market is considered to be saturated with physicians. Under such circumstances, steps are being taken to slow down the output of physicians and to limit the immigration of foreign medical graduates. Greater stress is being put on the training of nurses and other categories of health personnel. These judgements lead essentially to planning decisions that are implemented in various ways—often by modified funding for educational institutions.

In developing countries, health manpower planning has taken various other forms. As we saw in Chapter XII, great stress has been put on the training of auxiliary health personnel in the six countries studied, as in many others. The needs are usually so much greater than the resources to meet them that almost any number of personnel that can be trained are trained. The real limiting factor is simply the availability of resources. On the other hand, some developing countries—illustrated by Costa Rica (in Chapter XII) and also by Brazil and Mexico—have proceeded to multiply their medical schools with hardly any central plan for using the physicians produced. Considerations of the demand on behalf of young men and women who wish to enter a prestigious profession seem in such countries to be more important than an assessment of the population’s needs and the ability to support economically the output of these medical schools. Similar considerations have characterized some countries where numerous private medical schools have produced physicians and nurses largely for export.

In socialist countries, the planning of health manpower has probably been more deliberate and systematic than elsewhere. Basing estimates of need on studies of health service utilization, standards for the staffing of health services are set. Then, within the constraints of educational resources (school facilities, teachers, etc.), quotas are set for the output of various schools for health personnel. The decision of Poland, for example, to stop training medical students around 1960, when the supply of physicians had become adequate, was an interesting reflection of manpower planning.

It is very difficult to epitomize world trends in health manpower planning as a whole. The political ideology of countries appears to be crucial. Probably the most fundamental and generalized fact is that practically all nations of the world have come to find it useful and important to have information—the numbers and the ratios to population—about the various types of health personnel in the country. Even such simple data were seldom sought or collected by countries 50 years ago. Beyond this, deliberate planning to meet population needs seems to be influenced mainly by market observations in free-enterprise countries—both developed and developing. Such market considerations include both the numbers and the expected annual incomes of each type of health personnel. In socialist countries, or countries tending to move in this direction (for the health sector, if not generally) health manpower planning seems to be based mainly on an assessment of population needs; resource constraints, of course, may delay for some years the attainment of the desired norm or standard.

Regarding the objective of population coverage, it was obvious from the Alma-Ata Conference that the ideal had been reached in only very few countries. The type of health manpower wanted in order to cover all areas of a country, of course, differs with its level of economic development. The United Kingdom wants physicians, while Uganda at this stage of its development wants medical assistants and primary health workers. The types of personnel deemed appropriate for coverage naturally also change over time, as strikingly illustrated in Chapter XII by policies in Malaysia.
A crucial feature of the coverage objective, of course, is the geographic distribution of health personnel. Some highly developed countries - the United States of America, for example - may have ample national supplies of physicians, and yet there are certain areas, mainly rural, with a shortage of them. Other less affluent countries - for example, Costa Rica or Cuba - may have smaller national ratios of health personnel and yet have achieved rather balanced geographic distribution and coverage. The difference lies in the extent to which the country implements a structured system or framework for the delivery of health services, as compared with reliance on market dynamics.

Even under the most free or unregulated market conditions, an overall increase in the national density of health personnel can lead to some degree of improved coverage in rural areas. We have noted in Chapter XII how, in Malaysia, private general practitioners - who are under no obligation to settle in rural areas - often move to small towns in rural areas simply because the medical care market in larger cities has become saturated. A countervailing force in many developing countries, on the other hand, is the greater rate of growth (due to high birth rates) of rural populations. The net consequence of these opposing tendencies would have to be calculated before one could draw reliable conclusions about overall world trends in health manpower coverage.

The gap or disparity between urban and rural areas of a country may increase, even though the density of personnel in rural areas remains constant. Thus, in the Republic of Korea, the national supply of physicians increased from 29 per 100,000 in 1960 to 43 per 100,000 in 1970. Yet, between 1964 and 1974 the physician density in rural areas declined from 30% of that in cities to 27%. It is highly likely (though not certain) that this increased disparity was due to the settlement of most new medical graduates in the cities - even though the rural physician density may have remained unchanged or even improved.

In certain countries health manpower coverage of national populations in recent years has improved remarkably. Achievements in making essential health services available throughout the great territory of the USSR are widely recognized. Coverage of the vast population of the People's Republic of China with barefoot doctors has been discussed in Chapter VII. The greatly improved health manpower coverage of the population of Cuba, since its revolution of 1959, has also been documented. In Canada, following the enactment of its national insurance programme for physician's care, the medical coverage of rural areas in the provinces of Ontario and Quebec showed measurable improvement. Through various programmes for the training and development of auxiliary health workers, greater rural area coverage has been achieved in Sudan, the United Republic of Tanzania, Venezuela, Viet Nam, and elsewhere.

The unmet health needs in the rural areas of most developing countries, nevertheless, remain severe. The shortages of rural physicians - dramatized by the disparities in urban compared with rural physician densities - are the most dramatic. In the Sixth report on the world health situation, one finds that in 11 developing countries on which data were available for recent years, the urban-rural distribution of physicians showed improvement in 4, no change in 1, and deterioration in 6. It is disheartening facts of this sort that have led so many developing countries to change their health manpower strategies from training simply more physicians to training also greater numbers of health auxiliaries of various types. This policy change gives some grounds for greater optimism on the achievement of population coverage with appropriate health manpower in the years ahead.

With respect to the integration of health services and health manpower development - the HSMD concept discussed in Chapter XI - the evidence on trends is spotty, but it appears to point in the direction of gradual progress. That is, in various ways closer administrative relationships are being developed between ministries of health or other organized health programmes, on the one hand, and ministries of education, universities, and training schools on the other. In Chapter XI, we discussed the evidence for these trends, at the levels of planning, production, and management of health personnel. The process of integration or coordination was observable in many countries and in various forms.

Numerous countries, both developed and developing, have established national health councils through which leaders in health and in education can communicate their respective needs, problems, and plans. Even without such councils, health ministries sometimes transmit their estimates of manpower needs to ministries of education. In almost all countries, there are certain types of personnel that are trained directly in programmes of the health
authorities. Almost all public general hospitals are also engaged to some extent in training, as are many ambulatory care centres. On the other hand, university-controlled teaching hospitals obviously provide a great deal of health service. In most of the socialist countries, responsibilities for the education of physicians and other personnel have long been assigned to ministries of health; this has been done also in some other countries, such as India and Iraq. Such complete unification of responsibilities for health manpower development and health services does not necessarily mean complete integration of policies, but it clearly lays a firm basis for such integration.

In the six country case studies (Chapter XII), one could observe the several forms of interchange occurring between health and education agencies. Through studies and planning, countries are increasingly formulating goals on the types and numbers of health personnel required to provide the health services that the country wants and is prepared to support economically. In the past, and still today, the absence of such overall goals has led to the production of surpluses of personnel in some health disciplines, along with shortages in others. Recognition of these and other problems such as the misutilization of existing health personnel in most countries is leading in varying degrees to different approaches in the realization of the HSMD concept.

Trends in the health status of populations

In spite of all the persistent problems of disease, malnutrition and trauma throughout the world, in recent decades the health status of the global population has improved. Using the very broad index of life expectancy at birth, in the period 1950-1955, the worldwide average for all countries was 47.2 years; by the period 1970-1975 this had lengthened to 56.0 years, an extension of life expectancy by 18.6%.44

This extension of average life expectancy has been due, of course, to countless changes in the physical and social environment, of which the provision of health services is only one. Many have pointed out that health status improvements have probably been due more to general social advances in living conditions than to medical intervention.45 There can be no doubt, however, that health services have played a definite part, as we will see below.

The extension of life expectancy has been striking in both developing and developed countries. Contrary to what one might expect, in fact, the relative improvement from 1950-1955 to 1970-1975 has been greater in developing regions of the world than in the developed regions. The trends are summarized in the following data published (on the basis of United Nations reports) by the World Bank in 1980.46

<table>
<thead>
<tr>
<th>World Regions</th>
<th>1950-55</th>
<th>1970-75</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>37.5</td>
<td>46.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Latin America</td>
<td>52.0</td>
<td>61.2</td>
<td>9.2</td>
</tr>
<tr>
<td>East Asia</td>
<td>47.5</td>
<td>63.3</td>
<td>15.8</td>
</tr>
<tr>
<td>South Asia</td>
<td>39.2</td>
<td>49.3</td>
<td>10.1</td>
</tr>
<tr>
<td>All developing regions</td>
<td>42.5</td>
<td>53.2</td>
<td>10.7</td>
</tr>
<tr>
<td>Developed regions</td>
<td>64.3</td>
<td>70.3</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Thus, the extension of life expectancy for the aggregate of developing regions over this 20-year period was by 10.7 years, constituting an increase of 25.2%. In the developed regions it was by 6.0 years, constituting 9.3% improvement.

One might object that in the developed regions, with life expectancy coming closer to a biological limit, one could not expect so much improvement as in the developing regions, which in 1950 were at a very low level. Yet, if one calculates the gap between developed and developing regions in the two time-periods, one finds that this also has been diminishing rather than increasing. In 1950-55, the life expectancy in developed regions was 21.8 years longer than in developing regions, an advantage of 51.3%. In 1970-75 the difference had declined to 17.1 years - an advantage of 32.1%.
How much of these improvements in either the developed or developing countries can be attributed to health services is a very difficult question. Since general social and environmental improvements tend to go hand in hand with the expansion of health services, it is not easy to disaggregate one influence from the other. Changes that may be attributable to health manpower — the numbers, types, distribution, functions, etc. — as distinguished from other influences, are even more difficult to isolate, if at all possible.

An attempt has been made, nevertheless, to explore the relative importance of a country's health services — including health manpower resources specifically — and of socioeconomic conditions, in order to determine or explain the level of its population's health. As part of the current study, WHO (in collaboration with the Johns Hopkins School of Hygiene and Public Health) carried out statistical analyses on health and social data from 131 countries. Correlations were explored among variables on (a) socioeconomic conditions, (b) health resources, and (c) health status circumstances. In contrast to previous studies of the relationship to health status of both socioeconomic and health service indicators, this study analysed relationships among a rather large number of variables (12) in a large number of countries (131) throughout the world. Data for each country on each of the 12 variables were analysed for two separate years, 1950 and 1975. The study also explored the relationships between socioeconomic variables and measurements of health manpower in countries.

Not surprisingly, the major variables explaining life expectancy were found to be socioeconomic. Several such socioeconomic variables together (per capita GNP, plus four indicators of educational strength) explain more than 80% of the variations among countries in life expectancy. Highly important from the perspective of the current study, however, was the finding that when health resource variables (physicians per 10,000 population and hospital beds per physician) are added to the equation, the correlation with life expectancy increases further. Specifically the coefficient of determination (R²) rises from 0.84 to 0.90 or an increase of 7.1%. This would seem to be a powerful rebuttal of critics like Ivan Illich who claim that physicians do more harm than good. The data indicate that, over and above the overwhelming influence of national wealth (as reflected by per capita GNP), a greater supply of physicians correlates with a further extension of life expectancy.

The greatest influence of physician resources on life expectancy is found when the measurement of resources is for 1950 and the life expectancy is for 1975. In other words, there is apparently a lag between the health benefits (life expectancy) and the input of health manpower (physicians per 10,000). Expressed in another way, one may conclude from this study that — if per capita GNP were theoretically constant — a 35% increase in the physician/population ratio would in time lead to an extension of life expectancy by one year. Moreover, since physician resources are intrinsically closely dependent on (and therefore also reflect) per capita GNP, one finds that this health manpower variable alone is more strongly predictive of a country's life expectancy growth than per capita GNP alone.

Life expectancy, of course, is only one measure of the health status of a population. The quality of life — in terms of a person's ability to work productively and to live happily — is obviously as important as or perhaps more important than a simple measurement of years of life. Unfortunately, statistical indicators of the quality of life are not now available for many countries. Even when such indicators as days of disability per person per year are available in certain countries, one can seldom determine the influence of health services as distinguished from general socioeconomic circumstances. It is only possible to conclude that health manpower improvements, reported earlier in this chapter, may be associated positively with the few indicators of health status in populations that are now generally available.

Impact of the World Health Organization

The previous sections of this chapter have reviewed demonstrable trends in health manpower policies and programmes throughout the world, analysed in terms of eight specific objectives that over the years have shaped the World Health Organization's RMD programme. We have also reviewed briefly the trends in the health status of the world population and reported on a study exploring correlations between the health status of national populations and the development of health manpower resources. Previous chapters have discussed the numerous WHO programmes in health manpower that have been promoted in accordance with the eight principal objectives.
None of these analyses can tell us, however, to what extent the work of WHO has influenced, if at all, actual HMD developments in countries. This question is far easier to ask than to answer; WHO activities are obviously only one - and certainly not the most important - among countless influences on health developments generally in countries and HMD trends in particular. In this section we shall try to examine the available evidence on WHO's contribution to HMD trends in countries, recognizing always that much of this must be based simply on the judgement of informed observers, rather than on the type of hard data customarily available in a scientific experiment.

This is not the first occasion on which efforts have been made to evaluate WHO activities in education and training. In 1967, an extensive study was carried out to evaluate the WHO programme for education and training (1948-1966).49 This evaluation was conducted by a special advisory group of seven experts on the basis of five working papers prepared by WHO staff and consultants. The working papers gave comprehensive summaries of several education and training activities carried out from 1948 to 1966 by WHO (both at headquarters and in the regions), and classified them according to the type of programme and the countries in which WHO worked.50

Under the topic entitled "influence of WHO assistance", there are some rather general comments about WHO's HMD projects in countries. Illustrative observations were the following:

"The most frequent gap or weakness in the (medical school) curriculum, in which WHO assistance has been given in the projects studied, was preventive and social medicine... The second most frequent gap in the curriculum, in which WHO assistance was given by WHO professors and tutors, was in the basic medical sciences... The most frequent WHO assistance to the total programme of medical education in a country or area was provided by WHO advisory teams or consultative groups, to make surveys and recommendations... In a few projects WHO provided a principal or dean... In many projects the WHO professors noted that an opportunity to influence the curriculum and teaching, beyond their specific fields, was offered when they were invited to participate as members of boards of studies or faculty committees... In a number of projects of assistance to schools or institutes of public health the WHO project staff, in addition to postgraduate instruction, have also taught their particular subject in the undergraduate medical school... When WHO visiting professors taught both undergraduate and postgraduate courses, their influence and inter-relationship were very tangible."51

Based on rather descriptive statements like those above, the Advisory Group was understandably cautious in its judgements. Thus it stated:

"The (HMD) programme, as can be inferred from the list of assistance given to national projects, has been broad and world-wide in scope... In some aspects the programme has made significant contributions to progress in the world health situation... The programme has continuously expounded the doctrine of adaptation of education to specific local situations, even while it sought to raise educational standards simultaneously in distinctly different environments throughout the world.... In the teaching of medical students, the programme has encouraged the incorporation of research, particularly in local problems; it has promoted the concept of extra-mural training in community medicine; it has fostered a streamlining of the curriculum and an integrated approach to teaching between the basic medical sciences, the clinical sciences and social medicine... Another noteworthy accomplishment was the promotion of the training of various kinds of auxiliary personnel for whom there is a need everywhere, both in the more developed and in the developing countries... The group noted that much attention had been given in the programme to the teaching of public health and preventive medicine."52

Also, on more than one occasion in the past, evaluative studies have been made of WHO fellowships. During the years 1947-1957, there were 7796 fellowships awarded, and a sample of 1053 of these was studied.33 It was found that the vast majority of fellows had benefited from their studies. They "are making contributions in informing and training others, in improving or expanding existing services or establishing new ones, in carrying out research and in providing leadership".54 Only 8% of the fellows were found to be "not properly utilized" on return to their countries. Later, in 1970, an article in the WHO Chronicle stated that:
"A recent large-scale review of regional evaluations of the fellowship programme confirms that in the great majority of cases fellowships have been appreciated by governments and that they have conferred great and lasting benefits on the countries concerned."

The WHO Executive Board, evaluating the fellowships programme in 1975, concluded that:

"From this [1970] review it appeared that about 60% of fellowships could be classed as successes, 4% as failures and 35% either as partial successes or impossible to classify."  

It concluded from this that:

"the programme continues to maintain its flexibility so that it can meet the immediate needs of countries and at the same time support the general long-term policies of the Organization".

In 1974, the contribution of WHO to the evolution of medical education in Africa during 1962-1972 was studied. To do this, documents of the WHO African Region produced during this period of time were examined. The principal conclusions were as follows:

"WHO made a valid attempt to define and recognize the problems related to the development of medical education in the African Region... WHO made a valid attempt to find solutions to the previously elicited problems. Those solutions have been regarded as sound by the Member States, taking into consideration the constraints due to very different and sometimes antagonistic political situations in each state... WHO had a favourable impact on the development of medical education in the African region through the implementation of its policies either directly or through the action of Member States."  

As part of the current study, it was decided to explore the general influence of WHO on HMD policies and programmes in countries through a questionnaire survey of knowledgeable health professionals around the world in 1980. The names of persons surveyed were acquired from the WHO Expert Panel on Health Manpower and from suggestions by the regional offices. An initial mailing went to 428 such persons, but questionnaires were subsequently also sent to others (mainly in the African Region) by regional offices and WHO country representatives. The precise number in this second group is not known, but the total sample came to approximately 500. Usable responses were received from 170 persons, about about 34% of the total. The questionnaire solicited expert opinion on: (a) the relevance of WHO’s HMD programme to each country’s HMD needs, (b) the impact of WHO on the country’s HMD programme, and (c) suggested appropriate future HMD activities by WHO.

The 170 respondents came from 74 countries or nearly half of the WHO Member States. Applying a classification of countries used by the World Bank, the respondents were distributed as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing low-income countries</td>
<td>54</td>
</tr>
<tr>
<td>Developing middle-income countries</td>
<td>51</td>
</tr>
<tr>
<td>Oil-rich developing countries</td>
<td>13</td>
</tr>
<tr>
<td>All developing countries</td>
<td>118</td>
</tr>
<tr>
<td>Industrialized countries</td>
<td>41</td>
</tr>
<tr>
<td>Countries with centrally planned economies</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>170</strong></td>
</tr>
</tbody>
</table>

About 50% of the respondents were past (22%) or current (30%) staff members. With respect to health manpower experience, 43% were involved in education and training while 24% were concerned with other aspects of HMD, and 33% were not primarily from this field.

The nature of responses on various HMD questions naturally differed among persons from the several types of country. Certain overall findings, however, are of interest. The general contribution of WHO’s HMD programme to the country’s HMD efforts was regarded as having increased steadily since 1950, and it was expected to be of greater value in the future. The major reasons for this trend were said to be the influence of WHO ideas and concepts, along with the increasing interest of national authorities.
As we have observed in previous chapters, the major objectives of the Organization's HMD programme have changed over the years. Considering the predominant objectives in different periods, respondents were asked to rate the extent of the achievement of these objectives in their countries. The results are shown in Table 8, with respect to 10 general objectives. It is evident that for none of the 10 objectives during the three periods did a majority of the respondents consider that it was fully or mostly achieved; at this level, the percentage of achievement ranges from 14% to 34%, and it is principally around 25%. It may also be noted, however, that if a rating of "somewhat" is added to "fully or mostly", the level of achievement of objectives is reported as being greatest for the recent period 1976-1980; for this period, the assessment of non-achievement averages 21%, compared with averages of 36 and 39% for the two previous periods.

Table 8. Achievement of WHO's HMD objectives as estimated by 170 respondents from 74 countries, 1948-1980

<table>
<thead>
<tr>
<th>WHO/HMD Objective</th>
<th>Achievement (percentage of responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fully or Mostly</td>
</tr>
<tr>
<td>1948-1967</td>
<td></td>
</tr>
<tr>
<td>Reduction of health personnel shortage</td>
<td>24</td>
</tr>
<tr>
<td>Higher quality of medical education</td>
<td>23</td>
</tr>
<tr>
<td>1968-1975</td>
<td></td>
</tr>
<tr>
<td>Training national health personnel</td>
<td>27</td>
</tr>
<tr>
<td>Strengthening teacher-training</td>
<td>26</td>
</tr>
<tr>
<td>Improved continuing education</td>
<td>16</td>
</tr>
<tr>
<td>1976-1980</td>
<td></td>
</tr>
<tr>
<td>Manpower suited to service needs</td>
<td>34</td>
</tr>
<tr>
<td>Implementation of integrated HSMED</td>
<td>25</td>
</tr>
<tr>
<td>Strengthening of manpower planning</td>
<td>21</td>
</tr>
<tr>
<td>Developing primary care teams</td>
<td>22</td>
</tr>
<tr>
<td>Improved manpower management</td>
<td>13</td>
</tr>
</tbody>
</table>

Regarding the current HMD programme, the great majority of respondents from all types of country assessed its policy objectives to be appropriate to their country's needs. Of these positive respondents, however, about one-third thought that WHO activities to achieve these objectives were not carried out properly.

With respect to major WHO objectives recommended for the coming 10 years, certain differences among countries of different types are interesting. If future objectives are classified as related to planning, production, and utilization of health personnel, the distribution of priorities expressed by respondents from different types of country is as follows:

<table>
<thead>
<tr>
<th>Type of country</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planning</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
</tr>
<tr>
<td>Developing low-income</td>
<td>High</td>
</tr>
<tr>
<td>Developing middle-income</td>
<td>High</td>
</tr>
<tr>
<td>Oil-rich developing countries</td>
<td>-</td>
</tr>
<tr>
<td>Industrialized</td>
<td>Highest</td>
</tr>
<tr>
<td>Centrally planned</td>
<td>High</td>
</tr>
</tbody>
</table>
Thus the highest priority in all three types of developing country for the next 10 years is a greater (quantitative) output of health personnel. However, most frequently wanted are auxiliary or primary health care workers and not physicians or nurses. In the industrialized (free-market) countries, however, improved planning is clearly the highest priority. In the centrally planned (socialist) countries, there is a shared and moderately high priority for certain aspects of planning, and for the relevance but not the quantity aspect of production. Planning and utilization are of high priority, along with relevance, in low and middle-income developing countries, i.e., in the majority of Member States of WHO.

With respect to the interpretation by respondents of their country's HMD objectives in relation to those of WHO, the vast majority in all five types of country thought they were essentially congruent (i.e., concordant or similar). The largest dissent from this prevailing opinion came from 32% of industrialized-country respondents and from 30% of respondents in oil-rich developing countries.

Respondents were also asked their opinion about the extent of WHO's influence on their country's HMD programme over the years. The answers could be recorded as (1) most important, (2) essential, (3) helpful, or (4) negative (i.e., none, harmful, unproven, or nonexistent). Opinions differed among respondents from the various types of country. In the developing countries of both low-income and middle-income levels, the most frequent opinion was that WHO influence was essential, and this rating tended to increase over the years from 1950 to the present, and even further with projection into the future. For the low-income developing countries, the "essential" rating of WHO influence was highest at all times, but rose from 33% around 1950 to 50% in 1980 and 61% for the future. For the middle-income countries, the equivalent percentages were 36, 50, and 57. For the oil-rich developing countries they were zero around 1950, rising to 44 in 1980 and 71 for the future. In industrialized countries, on the other hand, WHO's work was seldom rated as essential; instead the commonest rating by far was "helpful"—this rising from 47% around 1950 to 67% in 1980, and then declining to 57% for the future. All in all, respondents from the three types of developing country considered WHO's HMD influence to have increased significantly over the years, and those from centrally planned countries shared this view. In the industrialized countries, however, the influence was predominantly regarded as fluctuating or basically unchanged over the years.

An assessment of WHO's impact on HMD policies and practices in countries may also be based on the field studies of the six countries reported in Chapter XII. All six were developing countries; two of them (Ethiopia and Indonesia) in the low-income category used above, three (Malaysia, Costa Rica and Barbados) in the middle-income category, and one (Gabon) in the oil-rich category.

The overall influence of the HMD programme on these countries, it will be recalled, was regarded favourably. In the two low-income developing countries, WHO had played a distinct role in the establishment of training programmes for auxiliary health workers to provide primary care in rural areas. The renowned Gondar Public Health College in Ethiopia had received WHO collaboration from its beginning, and in both of these low-income countries the Alma-Ata Conference of 1978 made a distinct impact. Much of WHO's influence in these countries was regarded as conceptual, including the emphasis on the importance of prevention and the value of health teams. Some years ago, WHO had been of assistance in the strengthening of medical education and in streamlining the training of nurses.

In the three middle-income developing countries, WHO had also played a significant role. The important Rural Health Services Scheme of Malaysia contained a major component for training health auxiliaries, and this had been developed with WHO collaboration. In Costa Rica, WHO's conceptual influence was a crucial factor in national acceptance of a programme for training auxiliary primary health workers that had been pioneered by an innovative local physician. On the other hand, some previous WHO advice on nurse education led to an upgrading of standards which may have been counterproductive. Similar advice in Barbados for the separation of nursing education from the health services and making it more academic may have been unsound; but WHO's conceptual emphasis on the importance of primary health care probably played a part in the planning of a national health service in that country.

In Gabon, the oil-rich developing country, WHO played specific roles in launching first a school for training nurses, midwives, and other health personnel, and then a university centre for training physicians and other members of the health team. Problems in planning and coordination are prominent here, in spite of the sudden wealth from oil.
All six countries in the field study look ahead to further collaboration from WHO through workshops, consultants, and fellowships. There is a general desire by these countries for closer participation in the selection of workshop topics, and there seems to be great and growing interest in health manpower planning, and management, as well as in training in health management. Fellowships have been universally regarded as helpful, despite general complaints about excessively bureaucratic procedures in arranging them and some infrequent but inappropriate types of training experience. Spokesmen from all the countries alluded to the generally valuable influence of WHO as a prestigious international body; because of this, even more collaboration from WHO was sought by health officials, in order to fortify their efforts to win greater support from their own governments.

Regarding the question posed to each person interviewed about his country's possible influence upon WHO policies or programmes, no one in any of the six countries was able to identify any such impact. It is hard to know whether these barren responses reflected modesty, whether they simply were due to non-participation by the persons interviewed in WHO governing bodies, or whether other factors were involved. It seems likely that the process of interaction between countries and WHO, which, as discussed earlier, leads to WHO policy formulation, is very gradual, long-term, and subtle. It is not the type of sharp, explicit impact that one could expect to elicit from short interviews.

The essential meaning of these findings resulting from various efforts to study the influence of WHO on HMD policies and programmes in countries is difficult to interpret. One can say that, in general, health manpower policies in developing countries have been more or less congruent with the main thrusts of WHO, at least as far as the declared policy objectives are concerned. (We know that, in practice, declared national health policies are not always fully implemented.) How much of this congruence is actually due to WHO's influence is not clear, but a perception of this influence seems to have heightened in recent years. In the more developed countries, HMD policies when they exist, may also be congruent with those of WHO, but little of this congruence seems to be attributable by respondents to WHO influence, as such.

Recalling our discussion in Chapter II about the development of WHO policies and programmes from a dynamic interaction between Member States and the Organization, these findings should not be surprising. The process of this interaction is continuous and subtle, and it takes place in the midst of many other social and political forces operating in countries. There is broad consensus, particularly in the developing countries, that WHO is a prestigious and competent international body. Its views or the views associated with it - as expressed through official resolutions, but also as transmitted by consultants or at workshops or in the reports of expert committees - are regarded as authoritative and sound. Policies and programmes in countries obviously depend upon the decisions of national leaders, but - in ways that are very difficult to measure - the formulation of those decisions results from influences of multiple sources. WHO is clearly one of those sources. With WHO's deliberate priority for work in the developing countries, it is not surprising that those countries should be most conscious of WHO influence. And as WHO grows in experience and maturity, the extent of its impacts seems gradually to increase.
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23 University of Lucknow. First ten years, 1958-1968, of Department of Social and Preventive Medicine, King George’s Medical College. Lucknow (India), 1969.


26 Ibid., p. 161.


45. See, for example: McKeown, T. The role of medicine: dream, mirage, or nemesis? London: Nuffield Provincial Hospitals Trust, 1976.

46. World Bank, op. cit., p. 11.


51. Ibid., pp. 116-126.


54. Ibid., p. 444.


PART FOUR

SUMMARY AND CONCLUSIONS
Chapter XIV

SUMMARY OF THE PAST AND LOOKING AHEAD

This study of international health manpower policy has tried to analyse this policy's development in countries and in the World Health Organization since WHO's founding in 1948. The analysis has been made against a background of political and social forces at play in the world during these last three decades. Events in countries have led to many modifications over the years in policies and programmes for health manpower development (HMD). Through the dynamic interaction between countries and WHO, HMD policies in WHO have naturally undergone change. As a forum for the interchange of national experiences, WHO serves as both a conduit and a catalyst for new and changing ideas.

In this final chapter we shall try to summarize the pathways of programmes directed to specific objectives, as they have been marked out by changing policies both in countries and in WHO. We shall examine the operations of the entire HMD process, as it has been observed in a small sample of countries. We shall note the highlights of quantitative trends in the world's total health manpower supply, and try to epitomize trends in manpower performance and relationships to overall health care systems - including relationships to the population's health status. We shall take note of what little we know about the influence of WHO in all these developments. Finally we shall attempt to look ahead. In what ways can HMD trends of the past guide us towards sound policy formulation in the future?

Past developments in HMD policy

Growing out of organized international health activities starting in 1851, the World Health Organization took shape after the Second World War, in 1948. Learning lessons from its predecessors (particularly the Health Organization of the League of Nations), WHO was formed as an autonomous body - yet as one of the specialized agencies brought into relation with the United Nations. More important than its differences in form were its far broader scope of objectives and functions than those of earlier international health organizations. No longer limited to such issues as the cross-national spread of communicable diseases, WHO's central objective became "the attainment by all peoples of the highest possible level of health".

The administrative structure of WHO, with its World Health Assembly, Executive Board, and Secretariat - the latter including headquarters and six regional offices - facilitated a dynamic process of policy formulation that grew out of the constant interaction between WHO and its Member States. Influences flowed in both directions on the many aspects of health with which WHO is concerned. From the outset, WHO collaborated with countries on strengthening the training of health personnel. The administration of this work was primarily the responsibility of a Division of Education and Training, which after some two decades evolved into a Division of Health Manpower Development.

The formulation of policies and their implementation through programmes depend on a process that should start with the identification of problems. The precise way that a problem is perceived and articulated has a great influence on the policy objective that will be proposed for solving it. In HMD, if a problem is perceived as a national shortage of physicians, that will lead to policies and programmes very different from those growing out of the same problem perceived as the non-availability of primary health care for rural populations. The changing identification of problems over the years, therefore, has led naturally to the formulation of changed policy objectives. As new policy objectives emerged, the old ones did not necessarily die out, but they often tended to recede to a lower priority, while the new ones attracted greater attention both in WHO and in its Member States.

An analytical review of HMD problems identified over the years 1948-1980, and of the policy objectives formulated in response, reveals a complex evolution. Since the nature of the problems is implicit in the policy objectives formulated to tackle them, accounts of the latter tell us a good deal about the former. Thus, in very rough chronological order, HMD policy objectives in WHO have evolved since 1948 approximately as follows:
1. Increased quantity of conventional health personnel
2. Improved quality of all types of health personnel.
3. Cross-national equality of health personnel training
4. Geographic coverage of countries with health personnel
5. Efficiency in production and use of health manpower
6. National planning of health manpower
7. Relevance of health personnel to national needs
8. Integration of health services and health manpower development.

It must be emphasized that the later objectives did not always entirely replace the earlier ones, but mainly supplemented them - also usually acquiring higher priority. For the achievement of some policy objectives, such as relevance, several specific HMD programmes might be implemented, as we shall see. Likewise one HMD programme, such as the training of health auxiliaries, could contribute to the attainment of several policy objectives.

In order to trace the evolution of policy objectives, and the corresponding programmes it is helpful to consider events between 1948 and 1980 in terms of four time-periods. Even though, as noted above, the first step in the process of policy formulation - problem identification - starts in countries, and likewise action programmes are naturally implemented within countries, a convenient periodization of the 33-year time-span can be based on the instrument of periodic planning known as the General Programme of Work covering a Specific Period. Accordingly, four periods can be conceptualized as follows:

<table>
<thead>
<tr>
<th>Period</th>
<th>Years</th>
<th>General Programmes of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1948-1951</td>
<td>None</td>
</tr>
<tr>
<td>II</td>
<td>1952-1961</td>
<td>First and Second</td>
</tr>
<tr>
<td>III</td>
<td>1962-1972</td>
<td>Third and Fourth</td>
</tr>
<tr>
<td>IV</td>
<td>1973-1980</td>
<td>Fifth and part of Sixth</td>
</tr>
</tbody>
</table>

These time periods are helpful not only for tracing developments in WHO's programmes and those of its Member States, but also for relating these developments to larger world events, social and political. These events have inevitably influenced strategies within countries, relationships between countries, and the whole dynamics of WHO. Accordingly, on the basis of the above periodization, what have been the developments with respect to each of the eight HMD policy objectives listed above?

Quantity objective. Reviewing the trend across thirty years, we find that the objective of increasing supplies of conventional health personnel (primarily physicians and then nurses) was clearly the number one priority in the early days of WHO - in Period I (1948-1951) and also in Period II (1952-1961). This objective was promoted by virtually all techniques in the WHO roster of working methods - by fellowships, expert committee and other meetings, short-term and long-term consultancies, provision of equipment and supplies, numerous publications, etc. In Period III (1962-1972) the priority of this objective was noticeably lowered by reason of higher importance becoming attached to the training of other types of personnel, as well as greater stress being put on the characteristics of the physicians and nurses produced, as distinguished from their mere number. In Period IV (1973-1980), the quantity objective, along conventional personnel lines, declined in importance in WHO policies although the effects of previous momentum towards this goal still continued - but at a lower level - in most countries, both developing and industrialized. The establishment of medical and related professional schools was proving very expensive for developing countries, and the graduates of these schools, in any event, were in most cases not meeting population needs for health care; training other types of personnel held greater promise.

Quality objective. Considering the quality objective in the WHO health manpower programme as a whole, its early formulation was inevitably influenced by the perception of problems growing out of the devastation of the Second World War, and then out of the rise of many newly independent nations that had recently been colonies. The pride of those nations, asserting that they would not accept second class standards, combined with traditions of academic excellence in the highly affluent countries, yielded a period in the 1950s, when
high quality standards (by which usually standards of the highly developed countries were understood) in all types of professional education of health personnel became a major objective. (There were indeed quality deficiencies health professional education in some developing countries - highlighted by criticism from local upper-class families and from leaders of the medical profession.) This approach continued into the early 1960s, but then - as other manpower considerations became more prominent in the later 1960s, such as population coverage and manpower planning - quality goals receded. By the mid and later 1970s, conventional quality objectives had become more manifestly irrelevant and merged into advocacy of relevance of education to health service needs and through them to the health needs and demands of the population.

**Equality objective.** An objective articulated in Period I was cross-national equality of the training, and even the licensure, of health personnel (particularly physicians). During Period II, the same issue formulated as minimum international standards of medical education was still being raised, but the only action taken by WHO governing bodies was to call for study of the question. Such a study was not reported until 1963, in Period III; in spite of the elasticity of the recommendations, however, little definite WHO action was taken on the issue, except for the proposal of a somewhat vague definition of a physician. In Period IV, the issue of equivalence of degrees became concentrated on collaboration with UNESCO for mutual recognition of degrees, qualifications, and diplomas in the health field; there was also a call for the study of basic models of medical curricula. In the meantime a new and essentially opposite problem - the brain drain of skilled health manpower from the less developed to the more developed countries was identified. WHO conducted an extensive study of the worldwide migration of physicians and nurses - demonstrating that market forces essentially determined the flow of these personnel from countries overproducing them, in relation to their economic capacity to absorb their services (regardless of objective health needs), towards countries underproducing personnel in relation to their greater economic capacity to absorb them. Clarification of these realities may have helped to cause a reduction of the brain drain problem in the late 1970s, and a greater appreciation of the importance of training the health manpower - in types and numbers - and of qualifications and competencies most appropriate to the needs of each country.

**Coverage objective.** The development of WHO policy towards an objective of total population coverage with appropriate health manpower evolved through stages that can be defined rather clearly. In Period I (1948-1951), the need for extending health services to rural populations was explicitly identified, but the training of auxiliary health workers was slight in extent and limited largely (with a few exceptions) to rather narrow functions in fields such as midwifery and sanitation. There was little, if any, recognition of the value of health auxiliaries to achieve population coverage. In Period II (1952-1961), as developing countries acquired a stronger voice in WHO, programmes for training auxiliary health workers with broader functions were more widely promoted, but the policy issue remained quite controversial. Only a few countries, such as Ethiopia and Malaysia, organized impressive programmes - at least in concept, if not in actual achievement - for training auxiliaries to provide rural health services. In Period III (1962-1972), as the deficiencies in rural population health care coverage very obviously persisted, the objections and uncertainties about the training and utilization of auxiliary health workers gradually but definitely declined. The long-established fieldshers of the USSR was accorded greater worldwide interest. In some developing countries, nevertheless, previous progress towards greater population coverage was, in a sense, hampered by a policy of upgrading medical assistants to the status of fully-fledged physicians (in spite of their customary urban concentration). Period IV (1973-1980), however, saw the clear emergence, as a top priority objective in most developing countries, of total population coverage with personnel appropriate for providing health care based on primary health care. The international consensus of public health leadership achieved at the Alma-Ata Conference of 1978, and even the belated recognition of the potential value of practitioners of traditional medicine in many developing countries, contributed to this policy trend. By 1980, total population coverage with health services was recognized as an essential objective that most developing countries could attain soon enough only by a rapid expansion of programmes for the training and use of non-conventional, multipurpose auxiliary health personnel.
Efficiency objective. Several strategies in WHO's programme for the development of health manpower field have had the objective of enhancing efficiency - implicitly if not explicitly - in the performance and training of personnel. These strategies have involved programmes to promote the development of health auxiliaries, health teams, health management, and health personnel teacher training. Each of these activities has, in turn, evolved over the years towards objectives different from those envisaged in the beginning. Thus, the use of health auxiliaries was initially motivated by an objective of efficient or non-wasteful provision of health services - which later evolved towards a predominant objective of total population coverage with health services based on primary health care. In some countries, this was originally regarded as a temporary expedient until enough physicians could be trained, but in most countries health auxiliaries came to be regarded as having a permanent place in health care systems. The strategy of personnel coordination through health teams was designed initially to provide the necessary supervision of auxiliary health workers, but it evolved in time towards a much larger objective of achieving efficiency in the functioning of all health personnel. The strategy of training in management was oriented, among other things, towards the management of health personnel as such (career structure, working conditions, etc.) so that they would perform efficiently; the main objective, however, was increasingly focused on training for effective management of total health systems. Finally, the strategy for training teachers of health personnel was conceived initially to meet the major goal of pedagogical efficiency, so that the teacher's efforts yielded maximum student learning; soon, however, its predominant goal became designing educational programmes which facilitate learning with maximal relevance to the health service needs of each country.

Planning objective. For numerous social and political reasons, the role and importance of general health planning, and health manpower planning in particular, were hardly recognized in the first two Periods (1948-1951 and 1952-1961) of WHO. Then, with the somewhat belated appreciation among non-socialist countries of the value of planning, in Period III (1962-1972) WHO began to promote general planning activities, including HMD programmes with a planning objective. In Period IV, it was gradually recognized that purely technical planning procedures - not realistically related to the total national political and economic scene - seemed to have little impact on health policy decision-makers. There evolved in this period a broader concept of the total health manpower development process, in which manpower planning became regarded as one component linked integrally to the production and management of health personnel, for the purpose of providing needed health services.

Relevance objective. Many activities linked to the objectives discussed above implied also a goal of relevance, but beyond them numerous other educational programmes were directed towards increasing the relevance of health personnel to society's needs. Strengthening of instruction in preventive and social medicine was one early strategy of this sort; by the 1970s, however, this particular approach was replaced by other broader ones. As special health issues became prominent - such as radiation hazards or mental and related disorders - emphasis on their incorporation into medical education was another form of advocating relevance. Efforts to achieve more effective methods in the teaching/learning process had started with an objective of efficiency, but they evolved after about 1973 into a strategy for achieving relevance in education. Finally, in reaction to excessive specialization in medicine, there arose in many countries and in WHO a call for greater attention to general medical practice and to training students outside the hospital setting. After about 1975, all these forces developed into a significant movement in certain countries, and vigorously in WHO, to achieve comprehensive reform and reorganization of health personnel education, to ensure relevance to the true health needs of communities. In spite of all this, the objective of relevance is far commoner in rhetoric than in reality, and vast challenges must be faced to convert the concept into everyday HMD practice.

Integration objective. The formulation in WHO of an objective to adapt health manpower development policy and practices to the needs of the health services - to integrate health services and manpower development (HSM) - gradually emerged as the culmination of several previous objectives. Obviously though this principle of integration may seem, on grounds of logic, the development of the two sectors - education of health personnel and health services - along two separate historical paths created problems almost everywhere in the world. Yet, in the early years of WHO (Period I) the HSM objective was implied in various official deliberations; in Period II, the need for integration had already become explicit. By
Period III, the integration concept was theoretically supported, but it still did not lead to any programme action. Both in WHO governing bodies and in the Member States, there were many forces defending independence and autonomy for educational institutions. In the meantime, various types of integrated activity were being carried out in special projects and in certain countries with respect to health manpower planning, production, or management. In some countries definite administrative mechanisms were established to integrate the two sectors at the national level; in others there were local demonstrations of integration. Finally in Period IV, the HSMD concept matured to the point at which it received specific formulation and was then generally accepted as the major long-term objective of WHO manpower policy. It embodied the idea of integration not only within health manpower development (planning, production, and management) but also between the entire HMD process and health services development as a whole. Through World Health Assembly resolutions, WHO General Programmes of Work, expert committee reports, and similar channels, it was decided that the ultimate determinant of health manpower planning, production, and use should be the requirements of each country's well planned health services development.

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This completes our analytical review of the development of HMD policies in WHO and Member States over the years 1948-1980. Along the pathways towards these eight policy objectives, evolutions can be traced from conventional towards innovative ideas, from mechanistic adoption of foreign models towards concepts of greater relevance or adaptation of HMD strategies to the true health needs of each country. We know that in the world diverse actions pursuant to all or most of the eight objectives have been going on at the same time. How did these multiple activities interact?

In order to attempt to answer this question, field studies of the entire HMD process were made in the six selected countries reviewed in Chapter XII. Through numerous on-the-spot interviews, observations, and data collection, the process of health manpower planning, production, and management, could be described in a horizontal sense - that is, with accounts of programmes directed towards various goals operating side-by-side.

**HMD experience in selected countries**

As has been noted in Chapter XII, to gather insight on the overall operation of the HMD process in countries, six nations with different settings were selected. All were developing countries, but illustrating a wide range of socioeconomic development. On the basis of measurements of their national wealth (gross national product or GNP per capita), their literacy rates, and male life expectancies at birth, a composite P/L/E index of development was calculated for each country. In their ranking order according to this index, the six countries studied were:

<table>
<thead>
<tr>
<th>Country</th>
<th>P/L/E index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>16.5</td>
</tr>
<tr>
<td>Indonesia</td>
<td>39.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>50.0</td>
</tr>
<tr>
<td>Gabon</td>
<td>51.4</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>60.9</td>
</tr>
<tr>
<td>Barbados</td>
<td>70.8</td>
</tr>
</tbody>
</table>

While there are obviously many differences among these countries beyond GNP, literacy, and life expectancy, the index composed from these three indicators shows them to vary in their levels of development by a range of more than 4:1.

In all six countries, there has clearly been recognition of the need for the entire HMD process to be relevant to the implementation of overall national health plans, even when there have been manifest deficiencies in that process. Deficiencies may characterize the planning, the production, or the utilization component of the process, or of two or even three of these. There are generally also difficulties in coordination among the three components of the HMD process. A crucial determinant of the overall functioning of the HMD process, as well as its integration with the development of the nation's total health services, seems to be the degree of the nation's commitment to public responsibility for
health care. Where this commitment is strong, there seems to be a greater determination to overcome problems and to plan, produce, and use the health personnel that are ultimately required to meet health needs.

In two of the countries (Ethiopia and Barbados), the political commitment to a comprehensive governmental health care system appears to be very strong, while in two others (Malaysia and Costa Rica), this political commitment may be described as moderately strong. In the last two countries (Indonesia and Gabon), one may say that the political commitment to public responsibility for health care is less strong than in the other four countries.

In all six countries there have been many achievements and there are, of course, many persistent problems. In all but one (Barbados, a small island) there are still serious rural handicaps. Preventive and curative services are not well integrated in any of the countries, although this is being worked towards in all except Indonesia and Gabon. Excessive specialization characterizes two of the countries (Costa Rica and Barbados - the two most highly developed), in the face of unmet needs for primary care and even wasteful use of specialist time for such care. Certain educational institutions in all six countries put an inappropriate emphasis on sophisticated specialty training at the expense of adequate attention to the output of primary health personnel. Inequalities of a greater or lesser extent - in the use of overall national resources - tend to be caused principally by the operation of a private market for the sale of health services.

WHO has collaborated with all six countries in their efforts to reduce many of these problems. The quality of WHO's collaboration is generally assessed favourably in all the countries, although criticisms of some bureaucratic procedures are common (particularly with regard to the administration of fellowships). All countries seem to be eager to contribute more actively to the selection of subjects on which WHO workshops and symposia are held. Training in health services management has high priority. With respect to the future, all six countries seek continued collaboration with WHO in HMD - particularly in the planning and management components. Collaboration in health manpower production seems to be less frequently sought (perhaps because training programmes are fairly well developed), except in Ethiopia, which seeks collaboration in this component also. In none of the countries, however, was any respondent able to say in what way his or her country had influenced the policies or programmes of WHO.

The effectiveness of WHO's collaborative work in contributing to the improvement of national health systems or the development of their manpower, was beyond the ability of the investigators or anyone interviewed to judge. In all six countries, nevertheless, there have manifestly been objective health improvements over the last 30 years. Even though problems persist in all areas of health, WHO efforts have tended to support the work of competent national authorities and personnel to reduce those problems. There can be no doubt that progress in countries depends far more on the dedication, political commitment, and competence of national health workers than on the input of any international agency, no matter how well done. One can still surely conclude, however, that - both in its direct performance and in its conceptual and promotive influence - WHO has usually worked on the side of progressive endeavours to achieve greater equity in the health sector of all six countries.

Although the six countries studied in the field were sufficiently diverse to yield the general observation offered above, they did not, of course, constitute a representative sample of the 156 Member States of WHO. To learn about health manpower trends in the world as a whole, it was necessary to undertake studies along other lines.

World trends in health manpower

On the basis of statistical data available to WHO, compiled from reports submitted by countries, it was possible to describe some recent trends in the supplies and ratios to population of certain types of health personnel. Through inferences that may be drawn from a variety of information sources, it was also possible to describe certain trends in health personnel performance (quality, efficiency, and relevance, as defined earlier), as well as trends in larger social policy issues - such as health manpower planning, population coverage, and the integration of health services and health manpower development. Trends in the health status of populations of the developed and developing nations could also be delineated
from available data, and statistical correlations could be explored on relationships to socioeconomic indicators as well as indices of health manpower. From interviews and a questionnaire survey of expert opinions, some estimates could be offered about the perceived influence of WHO in the development of HMD policies and programmes in countries.

From these several sources of information, one may conclude that there are many indications of a worldwide movement towards greater and more forthright efforts to plan, educate, and make more reasonable use of health personnel. On the whole, the numbers of physicians, nurses and, in general, of health workers — and their ratios to population — have increased throughout the world, but these increases have been extremely uneven between the developed and the developing countries. There is still a severe shortage of all categories of health workers, but especially of physicians, in many of the developing countries as well as outflow of trained health workers from developing to developed countries and concentration of those workers in cities. Experience has also shown that by simply training more of the same, more physicians and nurses, etc., unmet health needs of very large population groups in those countries will not be met in the foreseeable future. With respect to efficiency, there has been an increase in the use of health teams and of trained auxiliary personnel within them — even though the pace has been far less than the obvious needs. More personnel have also been trained in the management of health manpower and services. The real health needs of developing countries, nevertheless, remain vastly beyond the capabilities of current health manpower resources to cope with them.

With respect to the relevance of health personnel training to actual needs, there is evidence of some improvement as reflected, for instance, in the expanded teaching of preventive and social medicine in both developed and developing countries. This is not, of course, to suggest that PSM teaching is the panacea for the problem of irrelevance. In developed countries, an earlier rapid trend towards excessive medical specialization became slowed down around 1970, as a movement arose for strengthening general or family practice. A slow but definite appreciation of the value of teacher training in schools of medicine and nursing seems to be developing in all Member States. A small but growing fraction of medical, nursing, and other schools of health personnel have been reorganizing their entire educational programmes towards achieving much greater orientation to community health needs.

Although techniques of health manpower planning have often been unsuccessful, many countries have acquired greater consciousness of the value of quantifying their supplies and distribution of health personnel; studies have been showing shortages or surpluses in various fields, sometimes stimulating corrective actions. In recent years much greater coverage of populations with some suitable type of personnel has become formulated as a national objective; most often, a strategy of training many more auxiliary workers for primary health care has been launched in order to attain this goal. This strategy has led to remarkable achievements in certain countries, but the worldwide picture is yet far from being bright. In any event, much remains to be done to reach the main social target of "Health for all by the year 2000", formulated first in 1977 by the World Health Assembly (resolution WHA30.43) and reiterated and reinforced, along with the concept of primary health care as a key to its achievement, at Alma-Ata in 1978. In order to bring about closer integration between health manpower and health services development, coordinated administrative actions have been taken in numerous countries at several levels. Here again, however, only a beginning has been made in achieving the necessary integration between these two major components of national health systems.

In spite of all the persistent diseases and social difficulties in the world, the life expectancies of populations have increased significantly over the last 30 years; this has been true in both developed and developing regions of the world. Life expectancies, however, are still much shorter in the developing regions, although the degree of improvement in those countries has actually been greater than in the developed regions. Regarding other indicators of health status, nutrition, and general wellbeing, the evidence on trends in countries is far from clear, but the disparities here too are intolerably great. Analysis indicates that much the largest determinant of health status (as reflected in life expectancy) is the general socioeconomic level of a country; nevertheless, greater health manpower resources may make an additional contribution to the improvement of health status.

How much of the changes can be attributed to the influence of WHO is very difficult to assess. In the opinion of informed observers throughout the world, health manpower policy progress in the developing countries has been partially but significantly attributable to the influence of WHO. This influence seems to have increased in recent years. The impact of
WHO in industrialized countries is less certain. In any event, there is a great deal of
congruence between WHO’s HMD policies and the corresponding policies advocated (if not fully
implemented) in both developing and developed countries of the world.

The future - a view based on this analysis

At the head of this study we quoted the following sentence by the Director-General of WHO:

"To look forward with vision, it is wise to glance backward with perception - not to be
bound by history, nor to blame ourselves or our predecessors, but to learn lessons as a
springboard to the future"

Then, in the introduction to this analysis it was said that "as the study is definitely
future-oriented, its final aim is to draw conclusions as a guide for future development".
It is therefore legitimate to ask here: what are the lessons to be learnt from this
analysis; what are the suggestions that could be made?

Looking into the future, it may first be stated that the positive elements of development
seem to auger well for a more rapid progress. It has been established that there is now a
very clear, systematic awareness of both quantitative and qualitative problems; that there
is a clearly stated policy based on the coherent concept of HSMD discussed and endorsed by
representatives of all Member States (resolution WHA29.72) and firmly related to health for
all by the year 2000 through primary health care; that there is a well elaborated strategy
with some new methods, closely linked to the strategy for health for all by the year 2000;
that there is a growing unity of all organs of WHO on the basis of a common understanding of
the common goals; that there are more and more Member States that display different degrees
of political will to act decisively for health for all by the year 2000 through primary
health care which, in the field in question, means an integrated development of health
services and health manpower (HSMD); and that resistance to the new policies and strategies,
though still very powerful, shows some signs of diminishing. Taken together, these facts
indicate that conditions are now favourable for a more rapid development in the right direc-
tion. A clearly growing political pressure is now being exerted by the world community of
nations on Member States to do what they can on their own, and to cooperate with others, to
achieve health for all by the year 2000 through primary health care.

The first conclusion for the future therefore seems to be: in the past few years, in the
second half of the 1970s, a new HMD policy and programme both for Member States and - in
order to cooperate with them - for the Organization has been elaborated and its implementa-
tion has even started. It is therefore evident that the analysis suggests the continuation of (a)
further adaptation to the ever-developing needs and demands, and (b) the consistent
implementation of policy and programme both at national and at international level, as
foreseen in resolution WHA29.72 and in the long-term HMD policy document endorsed by it
(document A29/15)\(^1\) and amended on the basis of the Alma-Ata report\(^2\) and the strategy
document.\(^3\)

It also seems to be evident that a systematic approach should be maintained in the
development of the HMD programme, both nationally and at the Organization. At national level
the ways and means to ensure health for all by the year 2000 through primary health care are
charted in the national strategies for health for all by the year 2000, elaborated in 1980,
based on the adaptation of principles enunciated in the Alma-Ata Declaration and report.
This means that the health manpower should be planned, produced and managed to man teams in
well planned health services adapted to local conditions, needs, demands, and resources.

Internationally, on the basis of this analysis, the following clusters of activities
might be recommended:

1. Technical cooperation on a partnership basis and aimed at clearly defined national
targets promoting national self-reliance in socially highly relevant areas which have
significant and direct impact on health services development and, through it, on
health. Cooperation may have to be concentrated far more than now on:
- promotion of national political decisions to elaborate and/or reorient, as needed,
  explicit health manpower policies in the spirit of the HSMD concept, to implement them
  consistently, to monitor implementation and rectify policies and/or implementation as
  shown to be necessary by the results of monitoring;
- promotion of establishment and/or strengthening of mechanisms, at all levels, necessary to carry out all these activities and to make national policies and programmes as well as decisions taken at World Health Assemblies and their national consequences and adaptation widely known to all those concerned;
- promotion of technical cooperation among developing (and developed) countries (TCDC) also in the HMD field;
- promotion of the planning and especially the management (utilization) aspects of the HMD process (there is a rather general feeling that after decades of concentration on the production aspect, the time has come to focus cooperation also, and emphatically, on these aspects);
- promotion of innovations, to increase relevance, in all elements of the HMD process;
- promotion of key activities, whose success may facilitate and/or speed up the achievement of principal national objectives, such as promotion of:
  - elaboration and application of simple methods of health manpower planning,
  - development of community-based, multiprofessional education programmes which are oriented towards the job and towards problem-solving,
  - teacher-training,
  - production, evaluation, and dissemination of teaching/learning materials,
  - management training,
  - improving the efficiency, i.e., the proper management of health workers,
  - monitoring of utilization of health workers, and
  - continuing education,
- all these activities being undertaken with special regard to the development of primary health care; and finally
- promotion of action-oriented, progress-relevant HMD research.

2. In its coordinating capacity the Organization will have to play a more active role than it has done so far as the coordinator of international health work also in the HMD field. There are a very great number of agencies, both governmental and nongovernmental, which are active in this domain and coordination is badly needed if harmful effects are to be avoided and/or eliminated. The multisectoral approach, already practised in the past with organizations such as UNESCO and ILO, must be broadened.

3. A permanent monitoring and evaluation of all elements of the programme to note progress, efficiency, effectiveness and impact. It will be necessary to keep a constant check on the problem-list, with great problem-sensitivity, to notice the appearance of new problems, the change of character in old problems or, hopefully, the waning/disappearance of some. Policies should also be monitored, evaluated and changed in the light of changing problems. New strategies should be applied to the solution of new problems and/or old strategies modified appropriately. As new problems that may emerge in the future cannot be foreseen now, it is impossible to suggest what new strategies will be needed to deal with them. However, it is clear that there will be a need (a) to stimulate and promote innovation in all aspects of HMD, protecting it against unjust attacks but ensuring fair evaluation, and on the basis of this evaluation to initiate the necessary action as well as the propagation and adaptation of successful and useful experiences; (b) to use the network of innovative institutions, working for the same goals, on a wider scale; (c) to fight, and help others to fight, resistance to innovation and progress by educating, persuading, and informing governments and decision-makers, and by winning over professional groups, maintaining dialogue, discussing, convincing, disseminating information, and exposing the failure of outdated and outmoded concepts and approaches, as well as demonstrating the advantages and disadvantages of new concepts and strategies. In all this the WHO Secretariat would be working and thinking together with — and being a sounding board for — Member States and governmental and nongovernmental organizations.

Obviously, the role of the WHO Secretariat will change. It will have to play fully its stimulating, thought-provoking and coordinating role in constant interaction with nationals at all levels as promoter and catalyst, as an agent for change, clearly and unequivocally placing emphasis, at least in the foreseeable future, not only on technical matters but also on political stimulus and promotion, shifting the emphasis from the "now" to the "what for", while at the same time strengthening its technical role.

The analysis makes it possible to reply to the logical next question as well: what should the political stimulation and promotion aim at? While the technical content and
emphasis will be different in each Member State, the aim in all of them will be that HMD policies, programmes and actions are invariably directed to the relevance of the HMD process to present and hypothesized future community health needs.

The second conclusion, therefore, is that political decisions are needed so that

(a) the permanent national HSMED mechanism that is established and/or strengthened defines clear and unequivocal health manpower policies based on the recognition that development of health manpower is only one component in the development of health services, into which it must be properly integrated, i.e., that health manpower has no meaning in isolation: it is uniquely an instrument for effecting health care;

(b) the permanent HSMED mechanism fosters the functional integration of the three main components of the health manpower development process (planning, "production", management) into a composite whole, which is then integrated with the development of health services, and these in their turn aim at covering the entire population of the country with, at least, essential health care;

(c) health services, relevant to the health needs and demands of the entire population, are staffed in sufficient numbers by health personnel whose skills have been developed in answer to health problems to be solved;

(d) health manpower plans are prepared in conformity with the health manpower policies (see above) and as an integral part of the managerial process for national health development, which strictly identify and define the categories and types of health personnel to be trained, as well as their numbers and ratios, with a reasonable and clearly stated distribution of functions, indicating the knowledge, skills and attitudes, area and level of competence needed to carry out the tasks to be performed by each of them, thus also defining the composition of the health teams, striking the balance among health team members that is best adapted to local conditions;

(e) the "production" of health manpower conforms with the health manpower plans, i.e., new training institutions and programmes are established in order to, and the existing ones are geared to, "produce" the right types and categories of health personnel in sufficient numbers able and ready to meet the health needs and demands of the entire population. This means the development of educational programmes which are (i) integrated on a problem-solving basis, (ii) community oriented and community based, (iii) multiprofessional (team-based) in character, (iv) job-oriented (v) based on the clear understanding that "you are excellent only if you are relevant", and therefore (vi) adapted to the development of sciences and to local needs and resources;

(f) the management of health personnel ensures that trained personnel are used to the best advantage by the health services, i.e., they are employed and administered properly for maximum effectiveness of health services using the smallest volume of skill or group of skills with the necessary related knowledge to perform a specified job;

(g) a constant monitoring (surveillance) procedure is established which monitors the utilization of health personnel and ensures that the results are fed back into the planning and production process, which is then readjusted accordingly.

From this list, given by way of example, it is clear that a new emphasis should be developed so that, for instance, in addition to continuing, and even strengthening and accelerating the elaboration of new, simple methods of health manpower planning and collaboration with Member States in their efforts to establish health manpower planning as a permanent process, emphasis would also be put on stimulating the right political decision to introduce and/or strengthen health manpower planning as described above in item (d), as an integral part of the national HSMED system and of the overall national health planning process. In the same way, it will no longer be enough, for example, to promote the development and utilization of the "best" methods of the teaching/learning process. Emphasis will have to be put here not only on "how" but also and in first place on "what for", i.e., what the training programme is carried out for, what it is aiming at. Is it aiming at training, for example very highly qualified academicians equivalent with those of country X or technically and socially well prepared, reliable professionals able and ready to serve their people and meet their health needs and demands? It is clear that while the "how" is a purely technical question, the "what for" is acutely political.
After all, if there is one great lesson to be learnt from this analysis, it is that the key to further progress in the HMD field, in terms of the goal of health for all by the year 2000 through primary health care, is the promotion of national political will to seek out and apply the right solutions to well-diagnosed priority problems. There seems to be a health challenge here to which a right, and unequivocal, political response is needed. WHO is uniquely well placed to stimulate, as agent for change, this right type of political response without which even the best technical solutions may lead to a deadlock, as the lessons of this analysis abundantly teach us. It seems therefore that priority should now be given, at least for a while, to the stimulation of national political will and the appropriate technical approaches and solutions should all be subordinated to the clearly set main targets supported by that firm national will. However, it has to be added for clarification that WHO being par excellence a technical organization, the political stimulation should always aim at the utilization (a) of the best solutions, i.e., those most appropriate technically, and (b) application of those solutions to the right purposes relevant to local conditions. While in the past the Organization's attention was focused on (a), in the future both (a) and (b) should be properly and emphatically addressed.

In brief, the two main conclusions to be drawn from this analysis for the future are that (a) the long-term programme as foreseen by resolution WHA29.72 and document A29/15, and adjusted in the light of the Global Strategy for Health for All, is responding to the real problems identified by Member States and therefore will have to be constantly adapted to the ever-changing needs and demands; and (b) the emphasis will have to be two-pronged: in addition to the technical aspects (the "how"), attention will have to be focused on the political aspects ("what for"). The keyword in the future should be relevance. A systematic, integrated and holistic programme approach will have to be applied with relevance as the main aspect of all activities - relevance to the main social target of health for all by the year 2000, and in fact, to the health needs and demands of the people. In view of this, the three main output indicators of the HMD process for the future might be: (a) extension of health coverage with special regard to primary health care; (b) improvement of quality of health coverage; and (c) community participation and satisfaction.

The ET and HMD programme of WHO has tried to serve the interests of Member States in the best way it could since the inception of the Organization. After three decades of existence, demonstrating the tremendous potential and dynamism of the Organization, it is now in the process of renovation and rejuvenation, of a complete renaissance. It has set out to stimulate the national political will to plan, produce and manage appropriately trained health personnel to man teams for well-thought-out health services meant to cover entire populations and to meet their real health needs and demands, as well as to stimulate TCDH, to coordinate international health work in this field, and to provide technical cooperation as needed, in this whole process. That is how this programme can best contribute to the fight for the achievement of the main social target of health for all by the year 2000.
References and notes


4. These mechanisms will evidently take different forms in different countries but will in each case provide the framework for close collaboration of all sectors and institutions concerned with HSMD. In many cases, if not everywhere, this framework could be provided by the national health development councils and networks foreseen by the Strategy for Health for All by the Year 2000.

5. A "health team" is defined here as a group of persons who share a common health goal and common objectives, determined by community needs, towards the achievement of which each member of the team contributes, in a coordinated manner, in accordance with his or her competence and skills, and respecting the functions of others. The manner and degree of such cooperation will, of course, vary and has to be solved by each society according to its own needs and resources. There can be no universally acceptable composition of the health team.

6. Community-oriented education is defined here as one focused on both population groups and individual persons, which takes into account the health needs and demands of the community concerned. Community-based education, on the other hand, is defined here as one that involves the use of the community throughout the entire educational experience as an important environment in which learning takes place.

7. This means checking (i) whether the health worker is being properly utilized at the tasks he was trained for; (ii) whether he is ready and able to cope with these tasks; (iii) in what fields his competence needs updating; (iv) his job satisfaction; (v) his contribution to consumer satisfaction; and (vi) his life and working conditions.

8. The improvement of health status, and in general of the quality of life, is influenced by too many factors for it to be utilized as a direct indicator for HSMD activities, but of course it should always be taken into account as a final aim of all health activities.