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THE FOURTH TEN YEARS

..... *OF THE*

WORLD HEALTH ORGANIZATION

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1978-1987



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Introduction

The history of WHO's first decade was published in 1958 (1) and that of the second in 1968 (2). The history of WHO's third decade (3) was published in early 2009, an outcome of WHO's global health history initiative. The decision to continue with a history of the fourth decade soon followed.

WHO's third decade was characterized by a sense of optimism, perhaps naive in retrospect. There was a feeling that progress was possible, not only in health, but in social and economic ways to improve individual and collective well-being. This optimism was reflected in the approval by the Thirtieth World Health Assembly in May 1977 of resolution WHA30.43, which stated that WHO's main social target for the coming decades should be for all citizens of the world to attain by the year 2000 a level of health to enable them to lead socially and economically productive lives.

At that time, plans were advanced to hold an international conference on primary health care at Alma-Ata. The conference, in September 1978, adopted the Declaration of Alma-Ata, which identified primary health care as the key for achieving the health-for-all target. The Declaration's demand for social justice in health matters and plea for urgent national and international action for health were at the heart of all of WHO's work during the period covered in this book.

The 1970s have been judged by some historians as the golden age of WHO (see preceding volume on WHO's third decade), whereas the 1980s were described by Maurice Williams, the secretary-general of the Society for International Development, as a "brutal and mindless" decade (4). Maintaining the momentum of the 1970s in such an atmosphere was a challenge that WHO, under the leadership of its Director-General, Dr Halfdan Mahler, took on by orienting its work to the health-for-all vision.

Like its predecessors, this account of WHO's work covers all the major programmes of the Organization. However, there are some important changes to the structure of this volume.

The first volume covered the first 10 years of WHO's work (1948–1957) and provided an extensive review of how international public health evolved. The section dealing with WHO's work began with a review of methods and needs, followed by sections on specific topics, starting with malaria. *Methods* included projects, technical meetings, expert advisory panels and committees, training, coordination and cooperation, and investigation and research; *needs* were addressed in a region-by-region review of outstanding health problems, including a brief account of regional activities and administrative arrangements.

The volume on the second decade opened with a review of worldwide and regional health problems, followed by chapters on individual programmes, beginning with the organization of health services, education and training, and communicable diseases. The work of the governing bodies (World Health Assembly, Executive Board and regional committees) covered in the last

chapter contains brief descriptions of some of their activities; the various studies carried out by the Board, for example, are merely listed by title.

Owing to the increasingly prominent role played by the governing bodies in the Organization's work, the history of the third decade paid more attention to their decisions and activities. As many of their studies had a direct impact on the development of WHO's work, there is a chapter devoted to general programme development. Instead of describing global and regional health needs, the third decade history began with a summary of the global political, socioeconomic and institutional context, including an extensive account of efforts made by the United Nations to improve interagency coordination at the country level. Later chapters dealt with the individual programmes, more or less in the same order as the second decade history.

The reader will note from this volume's table of contents some similarity with the third decade history, as well as some radical changes in how the work of the different programmes is presented. Following the logic of the Seventh General Programme of Work (see Chapter 2), the chapters covering individual programmes are grouped into four parts: health systems infrastructure; health science and technology – health promotion and care; health science and technology – disease prevention and control; and programme support. New subjects are introduced at the subprogramme level: district health systems based on primary health care; intersectoral action for health; and women, health and development, for example. Perhaps the most striking feature of this new structure is the grouping of all diseases, both communicable and noncommunicable, into one chapter (Chapter 15), the rationale being that each programme was expected to concern itself with the science and technology of disease prevention and control, leaving the actual application for the health system to carry out.

There is also an important change to the chapter dealing with the governing bodies and WHO's general programme development. With the growing involvement of the governing bodies in formulating policies, strategies and plans of action, these elements are covered in their entirety in the chapter that deals with these bodies. The chapter that addresses WHO's general programme development now deals mostly with internal managerial mechanisms used to bring the Organization's individual programmes in line with the policies, strategies and action plans agreed to by the governing bodies. It also examines coordination and collaboration with other organizations, UNICEF in particular. As with its predecessor, this account is largely a record of the records; that is, one drawn from reports of the activities of the Organization and its partners. It is based almost exclusively on publications of that period; no effort has been made to look forward to assess the success or failure of initiatives that started during the fourth decade.

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Declaration of Alma-Ata

The International Conference on Primary Health Care, meeting in Alma-Ata this twelfth day of September in the year Nineteen hundred and seventy-eight (Alma-Ata 1978), expressing the need for urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all the people of the world, hereby makes the following Declaration:

I

The Conference strongly reaffirms that health, which is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector.

II

The existing inequality in the health status of people, particularly between developed and developing countries as well as within countries, is politically, socially and economically unacceptable and is, therefore, of common concern to all countries.

III

Economic and social development, based on a New International Economic Order, is of basic importance to the fullest attainment of health for all and to the reduction of the gap between the health status of the developing and developed countries. The promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of life and to world peace.

IV

The people have the right and duty to participate individually and collectively in the planning and implementation of their health care.

V

Governments have a responsibility for the health of their people which can be fulfilled only by the provision of adequate health and social measures. A main social target of governments, international organizations and the whole world community in the coming decades should be the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Primary health care is the key to attaining this target as part of development in the spirit of social justice.

VI

Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where the people live and work, and constitutes the first element of a continuing health care process.

VII

Primary health care:

1. reflects and evolves from the economic conditions and socio-cultural and political characteristics of the country and its communities and is based on the applications of the relevant results of social, biomedical and health services research and public health experience;
2. addresses the main health problems in the community, providing promotive, preventive, curative and rehabilitative services accordingly;
3. includes at least: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning, immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs;
4. involves, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and other sectors, and demands the coordinated efforts of all those sectors;
5. requires and promotes maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care, making the fullest use of local, national, and other available resources; and to this end develops through appropriate education the ability of communities to participate;
6. should be sustained by integrated, functional and mutually-supportive referral systems, leading to the progressive improvement of comprehensive health care for all, and giving priority to those most in need;
7. relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community.

VIII

All governments should formulate national policies, strategies and plans of action to launch and sustain primary health care as part of a comprehensive national health system and in coordination with other sectors. To this end, it will be necessary to exercise political will, to mobilize the country's resources and to use available external resources rationally.

IX

All countries should cooperate in a spirit of partnership and service to ensure primary health care for all people since the attainment of health by people in any one country directly concerns and benefits every other country. In this context the joint WHO/UNICEF report on primary health care constitutes a solid basis for the further development and operation of primary health care throughout the world.

X

An acceptable level of health for all people of the world by the year 2000 can be attained through a fuller and better use of the world's resources, a considerable part of which is now spent on armaments and military conflicts. A genuine policy of independence, peace, détente and disarmament could and should release additional resources that could be devoted to peaceful aims and in particular to the acceleration of social and economic development of which primary health care, as an essential part, should be allotted its proper share.

The International Conference on Primary Health Care calls for urgent and effective national and international action to develop and implement primary health care throughout the world and particularly in developing countries in a spirit of technical cooperation and in keeping with a New International Economic Order. It urges governments, WHO and the United Nations Children's Fund (UNICEF), and other international organizations, as well as multilateral and bilateral agencies, nongovernmental organizations, funding agencies, all health workers and the whole world community to support national and international commitment to primary health care and to channel increased technical and financial support to it, particularly in developing countries. The Conference calls on all the aforementioned to collaborate in introducing, developing and maintaining PHC in accordance with the spirit and content of this Declaration.

Global political, socioeconomic and institutional context

The promise of the third decade was still in the air in the period immediately after Alma-Ata, as witnessed by the fourth meeting of ministers of health of the non-aligned and other developing countries, in Geneva in 1980, adopting a resolution supporting the goal of health for all by the year 2000, and asking all countries in the movement to develop a programme of action. This was consistent with the aspirations of the New International Economic Order (NIEO), a set of proposals for which the developing world had so vigorously fought at the United Nations Conference on Trade and Development.

With the election of conservative leaders in the United States of America and the United Kingdom, the NIEO was effectively terminated. The dialogue between developed and developing countries that had characterized the NIEO movement in the 1970s came to an end when the 1981 session of the Conference on International Economic Cooperation in Cancún, Mexico, failed to reach a consensus. The solidarity of the Non-Aligned Movement (the intergovernmental organization of states not aligned formally with or against any major power bloc) diminished as each country sought to best position itself in the face of the economic crisis that would adversely affect many for more than a decade.

The non-oil-producing developing countries were already suffering economically when the second oil price hike in a decade occurred in 1981. The steady, strong economic growth from 1977 to 1981 suddenly halted. By 1983, the growth rate in developing countries had dropped to 1%, a figure that concealed wide variations between regions: in Africa and the Middle East, there was no growth and a decline in per capita income; in Latin America by the end of 1984, average gross domestic product (GDP) had fallen to the level of 1976; growth in Asia was still 5% but much lower in the seven least developed countries of the region; in the western hemisphere, output dropped 1%, except in eastern Europe, where economies were generally sheltered from these trends (1).

The sharp rise in oil prices in 1981 led to acute balance-of-payment problems for most developing countries that imported oil. This, added to the increased value of the United States dollar (up 45% between 1979 and 1984) and the falling terms of trade between developing and developed countries, led to countries going further into debt. In 1983, debt service payments consumed 27% of Africa's export earnings, and total debts were estimated at 59% of GDP.

The position of sub-Saharan Africa began to deteriorate in the late 1970s. Conditions worsened when the most severe drought in 15 years hit large parts of the region in 1982 and continued for several years. Food production in the 24 most seriously affected countries declined by 15% between 1981 and 1983. One person in five in this area was being fed from imports.

In his progress report released in November 1985, the Director-General Dr Mahler said: "The world population increases by more than 80 million each year, 90% of the increase occurring in the South; 2000 million people live on very low wages, one in five of them are trapped in absolute poverty; 600 million have no jobs, and some studies estimate that in Africa and Latin America

most of the labour force incorporated during the 1980s will be without employment in 1990.” Most countries were unable to sustain sufficient exports to pay for essential imports and to service foreign debts (2).

To meet mounting payment obligations in the face of such difficulties, many countries negotiated structural adjustment programmes so they could resume economic growth and development. These programmes aimed to reduce inflation and deficits in budgets and the balance of payments, and to restore growth. By 1987, 44 developing countries had adjustment programmes with the International Monetary Fund (IMF). More significantly, the number of these countries with World Bank structural adjustment loans rose continuously: from three countries in 1980, when this lending began, to 29 in 1987. World Bank loans, made to countries with an IMF programme in place, were generally over a longer term, 10 years for example, and intended to address the “dislocations” associated with the adjustment process (3). As a consequence, debt-laden developing countries were spending much more on debt service than on social services.

By 1987, the economic crisis was persisting much longer than expected. Per capita real income and consumption levels had declined significantly in sub-Saharan Africa, Latin America and western Asia, with no strong recovery in sight. In Latin America, as well as in the poorest parts of the world elsewhere, debt was expected to remain constant or to grow.

The crisis impacted most directly on household incomes; individuals and households had a reduced capacity to pay for goods and services, from both the private sector, where prices had risen for many key items, and from the public sector, where availability had fallen and charges been introduced or increased. Different effects were observed within populations, with poverty rates increasing overall. In particular, the buying power of the urban unemployed eroded and employment opportunities declined. Marginal groups in rural areas were also adversely affected.

The combination of falling national income, increased population, contraction in the public sector and priority given to debt service, led many governments to cut spending on health, both capital spending and recurrent budgets, the latter considered more serious as it led to a decline in the quality of services offered. Public sector professionals – pharmacists, technicians and others – moved to the private sector. Many physicians sought better opportunities in other countries, while many community health workers left the sector owing to the lack of remuneration and promotion prospects.

Intransigent recession in the industrialized world, declining commodity prices, rising interest rates, trade barriers and crippling international debt took their toll; the number of countries designated by the United Nations General Assembly as “least developed” grew from 24 in 1972 to 47 in 1991. Overall growth in these countries shrunk to about 3% annually, and per capita growth to 1%, compared with averages of 5.5% in the 1960s and 3% in the 1970s. The impact of these developments on the health of populations was difficult to assess owing to insufficient data. Despite these alarming trends, available aggregated national data suggested the overall health of people throughout the world continued to improve during this period.

The economic crisis impacted on WHO’s work. The Director-General wrote in 1981 that although the climate was “chilly outside”, where there was “war, conflict, economic instability, confrontation, and deadlock in the North/South dialogue”, inside, the Organization was “warm”, as there was “high expectation, determination to attain the goal of health for all, hectic activity to define strategies for reaching that goal, and, in this endeavour, cooperation as never before among Member States at all stages of development”. Nevertheless, as the decade progressed, the Organization faced extreme budgetary constraints, which restricted its ability to help countries in need.

The United Nations Third Development Decade

Following a proposal by the United States President John F Kennedy, the United Nations General Assembly adopted in December 1961 resolution 1710 (XVI), designating that decade as the United Nations Development Decade and requested that the United Nations system “develop proposals for the intensification of action in the fields of economic and social development”. The Economic and Social Council made preparations for the Second Development Decade in 1966, and resolution 2626 (XXV), adopted in October 1970, proclaimed 1 January 1971 as its starting date. With WHO’s involvement, specific global health objectives were established. Each developing country was asked to formulate a programme to prevent and treat diseases, and raise general levels of health and sanitation.

The economic crisis in the early 1970s hampered efforts to achieve the goals of the Second Development Decade. Declining food reserves, high inflation followed by spiralling prices for staple foods, the energy crisis, a shortage of fertilizers, droughts and an ever-increasing population contributed to a deteriorating nutritional situation. Setbacks in the fight against malaria and other parasitic and sexually transmitted diseases were noted. The picture was not, however, entirely bleak, as evidenced by the remarkable achievement of eradicating smallpox.

Following the United Nations General Assembly adopting resolution of 34/58 on health as an integral part of development, the Economic and Social Council recommended that it adopt a resolution on the Global Strategy for Health for All by the Year 2000, which it did in December 1981 (resolution 36/43). In it, the General Assembly recognized that implementing the Global Strategy would help improve overall socioeconomic conditions and fulfil the International Development Strategy for the Third Development Decade. It endorsed the strategy and urged all Member States to ensure its implementation and cooperate with one another and WHO to that end. It requested all appropriate United Nations organizations and institutions also collaborate with WHO to carry out the strategy.

In the new International Development Strategy adopted by the General Assembly for the Third Development Decade (resolution 35/56), starting on 1 January 1981, the New International Economic Order still provided the framework within which governments, individually and collectively, pledged their determination for its establishment. With the goals and objectives of the Second Development Decade “largely unfulfilled” and “negative trends in the world economy” adversely affecting developing countries and impairing their growth prospects, the strategy for the third decade called for accelerated development in these countries, including the following six targets: a 7% average annual rate of GDP; a 7.5% annual rate of expansion of exports and an 8% annual rate of expansion of imports of goods and services; an increase in gross domestic savings to reach about 24% of GDP by 1990; a rapid and substantial increase in official development assistance by all developed countries, to reach or surpass the target of 0.7% of GNP of developed countries; a 4% average annual rate of expansion of agricultural production; and a 9% annual rate of expansion of manufacturing output. The strategy also aimed to achieve by the year 2000 full employment, universal primary school enrolment, and life expectancy of 60 years as a minimum, with infant mortality rates no higher than 50 per 1000 live births.

The strategy also set out policies in international trade, industrialization, food and agriculture, financial resources for development, international monetary and financial matters, science and technology for development, energy, transportation, the environment, human settlements, disaster relief, and social development, as well as in technical cooperation (including cooperation

among developing countries themselves), and special measures for the least-developed and geographically disadvantaged countries, such as islands and landlocked developing countries.

The strategy called for the international community to provide adequate financial and technical resources to help train personnel in developing countries. It endorsed primary health care as the key measure for achieving health for all and called for infant mortality rates to be reduced to less than 120 per 1000 births in the poorest countries, and life expectancy rates to rise to a minimum 60 years in all countries.

In pursuit of goals highlighted during the International Year of the Child in 1979, child welfare and the essential role of the family in the balanced development of the child would be stressed. Efforts would be made to improve the living conditions of children and to eliminate child labour in order to conform to international labour conventions. The large number of children under 15 living in poor rural and urban areas was to receive special attention.

The strategy called for entire populations to participate at all stages of the development process. In line with the programme of action adopted by the World Conference of the United Nations Decade for Women, women were to play an active role in that process. All countries would aim to secure for women equal participation both as agents and as beneficiaries in all sectors and at all levels of the development process. Women should have better access to nutrition, health services, education and training, employment, and financial resources. They should also be able to participate in the analysis, planning, decision-making, implementation and evaluation of this development.

Specific action to achieve health for all by 2000 included establishing a comprehensive system of primary health care as an integral part of a more general health system. Providing primary health care (PHC) would be part of a drive to improve nutrition and living standards, and basic infrastructure for supplying safe water and basic sanitation. Developing appropriate technologies, providing essential drugs, preventing dangerous and hazardous drugs being introduced, promoting health-related research, and training health personnel at all levels, including physicians, were seen as complementing the results expected from the multiplication of primary health care centres.

As described above, the Third Development Decade fared poorly. Not only had the economic situation in developing countries worsened, assistance from the developed world had diminished. By 1990, only five donor countries had met the United Nations target of donating 0.7% of their GNP to development: Norway, the Netherlands, Denmark, Sweden and France. Canada and Germany had achieved a level of 0.4% of their GNP. The United States, which had never agreed to the United Nations target, had given only 0.2%.

Important developments in UNICEF and the World Bank

The new International Development Strategy outlined policy measures required in the following fields: international trade; industrialization; food and agriculture; financial resources for development; international monetary and finance matters; technical cooperation; science and technology for development; energy; transport; economic and technical cooperation among developing countries; least developed countries, most seriously affected countries, developing island countries and land-locked developing countries; the environment; human settlements; disaster relief; and social development. While the prime responsibility for development rested with countries themselves, developing countries expected much of the international

community and the United Nations system, beginning with an end to colonialism, imperialism, neo-colonialism, interference in internal affairs, apartheid, racial discrimination, hegemony, expansionism and all forms of foreign aggression, and occupation.

Links between the development strategy and United Nations system strategies already in place were identified: the Lima Declaration and Plan of Action on Industrial Development and Cooperation (1975); the Declaration of Principles and the Programme of Action adopted by the World Conference on Agrarian Reform and Rural Development (1979); the United Nations Conference on Trade and Development (1979); the results of the United Nations Conference on New and Renewable Sources of Energy; the Vienna Programme of Action on Science and Technology for Development (1979); United Nations Conference on the Least Developed Countries (to be convened in 1981); the World Population Plan of Action; the World Conference of the United Nations Decade for Women (1980); and the Transport and Communications Decade in Africa, 1978–1988.

The specialized agencies and organs of the United Nations were asked to help review and appraise at both the global and regional levels.

There was a strong push early in the 1970s (see third decade history) to institutionalize collaboration within the United Nations system, especially at the country level. When this did not materialize, the individual organizations, WHO included, returned to earlier forms of collaboration, namely, building partnerships around specific issues and problems. Later chapters in this volume discuss programmes and projects developed in collaboration with other agencies. Because of the key role of United Nations Children's Fund (UNICEF) in many such endeavours, its history during this critical time is examined more closely, along with that of the World Bank, whose role in health increased dramatically during this decade; lending for the health sector rose to substantial levels by 1987.

UNICEF

In 1976, the UNICEF Executive Board committed itself to the basic services approach. By this time, however, UNICEF and WHO were well advanced towards agreeing on an alternative approach to health care, that of primary health care. At the 67th session of the Administrative Committee on Coordination, Henry Labouisse, UNICEF's Executive Director, indicated that the basic services approach "would concentrate on local participation and local resources". He said he hoped it would "eventually become part of a more comprehensive programme on an interagency basis" (4).

UNICEF was a cosponsor of the Alma-Ata Conference, for which it helped prepare all the documentation. It had strengthened the text to distinguish primary health care from earlier efforts to improve the health services in the developing world, emphasizing the need to place health within a wide developmental sphere and to energize health system development by involving individuals and communities.

During this period, WHO once again became concerned about UNICEF taking over its role of recruiting professional staff with public health expertise. The previous WHO Director-General, Dr Marcolino Candau, believed it would be "confusing" if UNICEF were to recruit doctors, but when Dr Mahler was approached in 1977 on this issue, he expressed no objection, provided the doctors would not give advice contrary to WHO policy, a condition UNICEF accepted. In the post-Alma-Ata context, however, the concern was not so much about UNICEF's right to hire professional staff – doctors, nurses, engineers and social scientists – as how this

might interfere with coordination between the organizations. As UNICEF country-based staff had far more freedom than their WHO counterparts to act without higher-level approval, UNICEF began to “operate separately from WHO [at the country level] ... at the same time [that] the number of WHO technical advisory teams... tended to diminish” (5).

With James Grant’s arrival as Executive Director in January 1980, UNICEF’s priorities and approaches changed, creating further tensions with WHO (see Chapter 3). As a first step towards exploring new directions, he reorganized UNICEF’s headquarters and established a group of “sectoral and multisectoral specialists” with operational as well as advisory duties. They were to be involved in “innovative projects testing ideas in the field, learning from practice and synthesizing the experience so that new values could be distilled, successful experience disseminated and replicated where possible” (6).

The new direction under Grant quickly emerged. In 1983, UNICEF’s Child Survival Revolution pushed to the forefront four health interventions, the so-called GOBI package: growth monitoring; oral rehydration therapy; breastfeeding; and immunization. Progress would be measured by infant mortality. Although a few UNICEF Executive Board members expressed concern about losing sight of the “whole child”, it approved the new strategy and directed UNICEF to “work with government and, as appropriate, with nongovernmental organizations”, which it recognized as “important channels for furthering primary health care” (7). By 1986, however, the subject of primary health care no longer appeared on the agenda of UNICEF’s Executive Board.

Following a conference in Bellagio, Italy, in 1984, a Task Force for Child Survival was formed with members from the Rockefeller Foundation, UNICEF, the United Nations Development Programme (UNDP), WHO and the World Bank. The United States Centers for Disease Control (CDC) in Atlanta served as its executive secretariat. In the WHO annual report, the title of this conference is given as ‘Protecting the world’s children: vaccines and immunization within primary health care’, while in the Rockefeller Foundation’s web site there is no mention of primary health care.

The task force’s mandate, however, was understood. The first task this group undertook was to accelerate immunization in several countries. UNICEF adopted “children first” as its umbrella theme to mark its 40th anniversary in 1985. The United Nations used this occasion (resolution 40/210) to recognize that many developing countries had recently embarked upon major child survival and development efforts, citing the “renewed potential for achieving the goal of universal child immunization by 1990, which is an important part of the primary health care strategy”. A meeting held in October 1985 in Cartagena, Colombia, reaffirmed the 1990 immunization goal. African ministers of health declared 1986 African Immunization Year; and in 1987, the Organization of African Unity (OAU) summit in Addis Ababa declared that 1988 would be the Year for the Protection, Survival and Development of the African Child.

Together with WHO, UNICEF helped launch in late 1987 the Bamako Initiative, a “novel approach ... to assuring the health of women and children through the financing and management of essential drugs in districts and communities” (8).

The World Bank

In the 1960s, the World Bank was not involved directly in health projects, but it did make loans available for population, drinking-water and sewerage projects. Concern about population growth led the Bank to add building health facilities to its population projects. Almost 60%

of the total costs of population projects were invested in facilities for mother and child care that included family planning services. Various educational projects targeted health services; one in Uganda in 1971 helped train paramedical personnel for rural preventive services, and another in the United Republic of Tanzania in 1973 helped train doctors who would supervise the health care given by paramedical personnel in rural areas.

Making health services available was built into land settlement schemes as part of the minimum package necessary to make the settlements viable. Health measures were included in rural development projects to guard against prevailing menaces; schistosomiasis in irrigation schemes, for example. A more ambitious effort was to control endemic diseases that interfered with the agricultural exploitation of fertile lands, such as the Onchocerciasis Control Programme in West Africa in 1974 involving WHO, UNDP and the Food and Agricultural Organization (see Chapter 15).

This programme was just a beginning, “but only a beginning”, according to one commentator. “Practically nothing has been done in the way of systematic economic analysis of the various specific obstacles to economic development posed by disease and of the economic and social costs and benefits of projects to remove them. Without this basic information it is impossible for a government or aid agency to allocate investment optimally between disease control as such and other more conventional investment projects. In the meantime, it is highly improbable that the existing distribution of resources is anywhere near optimal.” (9)

The lack of epidemiological and economic evidence did not prevent the authors of the first study published by the World Bank to specifically address health issues from concluding that “to improve the health of the poor in the developing countries, it is essential to devise programmes which will improve sanitation and water supplies, housing, personal health practices and nutrition, and promote family planning and simple preventive health measures”. Investing in such services alone might not be enough to prevent population growth from undermining economic gains obtained through reduced absenteeism, increased labour productivity and better exploitation of natural resources. The authors argued, therefore, that improvements in health had to be accompanied by other measures to promote socioeconomic development. Health programmes, therefore, “should not be isolated efforts, but should form part of a broad programme for socioeconomic improvement designed to reduce mortality and fertility” (10).

The World Bank had decided before the 1975 health sector review that it would continue to increase awareness of the health consequences of the projects it supported and of the opportunities for improving health that were available via loans. The review served to strengthen the Bank’s resolve to minimize adverse side-effects on health from its lending operations in other sectors, make key interventions to improve the health of low-income groups and to conduct field experiments “to test selected elements of a reformed health-promotion system within rural development, population, and sites and services projects” (9). At this time, investing in health was undertaken with other development projects in mind, including population and family planning ones.

Lending directly for health was initiated by the Bank at the end of the 1970s. Several factors seemed to contribute to this change of policy. First, the view that better health necessarily resulted in accelerated population growth had been challenged. The alternative hypothesis – rates of infant mortality motivate high birth rates – received empirical support and gained widespread political acceptance. Most countries attending the Bucharest Conference on Population in 1974 endorsed the notion that economic development and health improvements were prerequisites for fertility decline. The second key factor was a shift from economic growth (following the trickle-down theory of development) to the development of human resources;

better health, especially among adults, would help improve the economic status of the poor and expand total output.

International concern in the mid-1970s for meeting basic human needs, along with evidence of several low-income countries significantly reducing disease using simple, low-cost methods of health care, further justified the Bank's decision to enter the health field more seriously. The Alma-Ata Conference on Primary Health Care "gave political and professional legitimacy to this new consensus on health priorities" (11).

Despite the upbeat tone of the 1980 health sector paper, by 1986, the Bank's study of population growth in Africa indicated that "the unprecedented rate of population growth in Africa – which averaged 3% per year – was frustrating efforts at social and economic development" (12). That rapid population growth was contributing to poverty seemed evident, yet the "framing and testing of refutable hypotheses" regarding this relationship touched on "peculiarly personal subjects – the family, human reproduction, relations between the young and old, between men and women. Those who bring science to these personal realms tread a peculiar path, one where scientific objectivity is more elusive than ever. But the path is one which commands our attention; population and poverty are not subjects to be ignored" (13). This position was central to the Bank's 1980 World Development Report on Poverty and Human Development, in which growth was recognized as vital for reducing poverty, though not sufficient on its own (14).

Recognizing that the poor often lived at the geographic or social periphery and that reaching this "client group" was of the greatest importance for the Bank's population, health and nutrition (PHN) projects, a review sought to determine whether the Bank could do better. Unfortunately, there was "no established criteria for judging whether the Bank's PHN projects [were] sufficiently responsive to client needs". Furthermore, the Bank was judged to have not "done enough to target project-financed services to priority clients, particularly the most disadvantaged at the periphery". To improve their performance, "borrowers and the Bank should: learn more about clients' perceptions and behaviour; do more to target the clients most in need of services; involve clients more in designing, monitoring and implementing programmes; give public-sector providers stronger incentives to understand and reach out to clients; make more use of client-responsive service delivery systems outside the public sector; and, carry out more evaluation studies to determine the responsiveness of programs to clients" (15).

Bank economists, too, were calling for further studies of households; the impact of health on labour and school productivity, cost-benefit analyses of health investments, and the consequences of poor health for households and communities, for example. The prospects for breaking new ground in cost-benefit analysis were judged to be "huge in the long run, but poor in the short run" because "in the current environment, academic researchers doing applied research inevitably are drawn to areas of work where a research tradition has already developed (the paradigm is set), where methodological issues are relatively well-drawn (though breakthroughs may be needed, the need itself is implicitly recognized) and where data are already available or the mechanism for collecting data are well known ... none of these factors obtains today [in 1989]" (16).

By 1990, Africa's situation was described by World Bank president Robert McNamara as a "development crisis: agricultural stagnation, population explosion, and environmental degradation" (17). In the interim, the Bank had released a health-care policy paper on financing health services that proposed interventions to relieve "governments of spending public resources on health care for the rich ... so that more could be spent for the poor" (18). Four directions were outlined: enforce fee payment for health services; encourage the privatization of health services; promote (private) insurance programmes; and, decentralize the management of health care.

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Part 1

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Direction, coordination
and management

Governing bodies: policy basis

All of WHO's work is guided by decisions taken by its governing bodies: the World Health Assembly and the Executive Board. The Health Assembly comprises delegates representing Member States (Members), while the Board is made up of persons designated by Members selected by the Health Assembly. WHO's Secretariat comprises the Director-General and technical and administrative staff.

The Health Assembly meets once a year, usually in May. It determines the policies of the Organization, reviews the activities of the Board and the Secretariat, instructs the Board to undertake actions or studies, reviews and approves the budget, and considers recommendations bearing on health made by the United Nations.

The Board acts as the executive organ of the Health Assembly, implementing its decisions and policies. It meets twice a year, usually in January, at its main session, and immediately after the Health Assembly, when it meets for only a few days. One of its major responsibilities is to submit to the Health Assembly for its consideration and approval a general programme of work covering a specific period. The fourth decade was covered by two such programmes, that of the sixth, which covered 1978–1983, and the seventh, which covered 1984 to 1989. The Board can also submit advice or proposals to the Health Assembly on its own initiative.

Article 29 of the WHO Constitution states that the Board shall exercise on behalf of the Health Assembly the powers delegated to it by that body. Article 38 provides the Board with the authority to establish committees to serve any purpose within the competence of the Organization.

During the biennium 1978–1979, WHO's governing bodies began to play a more active role in shaping the Organization's policies and guiding its work, a development which steadily continued in the years that followed. The Board assumed greater responsibilities, presenting major issues and advice to the Health Assembly and carrying out the decisions and policies of the Health Assembly. The Board increasingly correlated its own work with that of the Health Assembly and the regional committees, monitoring the regional committees' adherence to the Health Assembly's policies. The regional committees also played a more active role, many of them setting up subcommittees to deal with such matters as the programme of work and technical cooperation among developing countries, and also to advise the regional directors.

The scope of the Executive Board Programme Committee was broadened. On behalf of the Board, it monitored the implementation of budget policy and strategy, examining each programme at its November session in preparation for the January session of the Board. It reviewed progress under the Sixth and Seventh General Programme of Work and selected programmes.

Strategies and plans of action for achieving health for all by the year 2000

Following the Declaration of Alma-Ata in September 1978 – calling for national, regional and global strategies for health for all, based on primary health care – the Executive Board prepared guiding principles to formulate such strategies. These principles were adopted in May 1979 by the Thirty-second World Health Assembly, which endorsed the report of the International Conference on Primary Health Care, stressed that strategies should be formulated by the countries themselves and requested the Director-General ensure priority was given to this work (resolution WHA32.30). In addition, the Director-General was asked to commission a study on ways to strengthen WHO's cooperation in this field with other organizations within the United Nations system (resolution WHA32.24).

At their 1979 sessions, the regional committees pledged to formulate strategies. (Regional action is described in Chapter 4.) The regional strategies were used to help prepare the Global Strategy, which was adopted by the Health Assembly in 1981 (resolution WHA34.36). By this time, more than half of WHO's Member States had prepared national strategies for health for all.

The Global Strategy for Health for All provided guidelines to governments on how to develop health systems based on primary health care to suit differing health, social, economic, cultural, and political situations (1). It showed how cooperation between countries could be improved and defined the role of WHO. The Global Strategy provided "guidance" and "not supranational prescriptions, because the action outlined has to be interpreted and adapted nationally and locally in order to give it flesh and blood" (2). Its main component was to develop, starting with primary health care, health system infrastructure to deliver country-wide programmes that reached entire populations and included measures for health promotion, disease prevention, diagnosis, therapy and rehabilitation. The strategy specified measures to be taken by individuals and families in their homes, by communities, by the health services at the primary and supporting levels, and by other sectors. It also called for technology that was appropriate for the country concerned, scientifically sound, adaptable to local circumstances, acceptable to those for whom it was used and to those who used it, and could be affordably maintained. Social control of health infrastructure and technology was to be obtained by a high degree of community involvement.

The governing bodies focused on mobilizing resources to implement the strategy. Member States were urged to allocate adequate resources for their national strategies and to increase substantially, where possible, their voluntary contributions for activities that formed part of the health-for-all strategy. Agencies, programmes and funds within the United Nations system were similarly encouraged. The WHO Director-General was asked to help developing countries prepare proposals for external funding for health and identify external resource requirements. To this end, the Director-General invited representatives of bilateral, multilateral, and non-governmental agencies, as well as those of developing countries, to meet in a Health Resources Group for Primary Health Care (see Chapter 3).

The Executive Board was asked to review regularly the international flow of resources in support of the health-for-all strategy to ensure they were used efficiently and to report on those matters to the Health Assembly, which carried out a similar review with the aim of encouraging Member States in a position to do so to contribute additional resources to this effort.

The Board devised a plan of action to implement the Global Strategy, one that stipulated what was expected of Member States, the governing bodies of WHO and of the Director-General and

regional directors. This plan was adopted by the World Health Assembly in 1982 (3). It called on Member States to review their health policies in the light of the Global Strategy, formulate national strategies and develop national plans of action. The Health Assembly impressed upon Member States the need for the people to take an active role. Regional committees were asked to refresh and adapt strategies where necessary, prepare national plans of action and submit proposals for the seventh and subsequent general programmes of work. The Board was asked to monitor efforts worldwide to implement the plan of action and to report to the Health Assembly on its progress and any problems encountered. The Board was also asked to formulate the Seventh General Programme of Work as WHO's support for that strategy (see below).

To make it easier for Member States to monitor and report on their strategies, the Director-General prepared a “common framework and format for monitoring progress in implementing the strategies for health for all by the year 2000”. Implementation was understood to “depend first and foremost on the action of Member States themselves, individually and jointly”. At the same time, “the burning question” was how to ensure Member States had adequate resources to implement the strategy (2). This question soon became critical as the world economic recession had already led to a decline in average per capita income for developing countries in 1981 and 1982.

During the Thirty-sixth World Health Assembly, the Director-General suggested that the spiritual dimension in health be considered and prepared some “reflections” for discussion by the Board (4). This spiritual dimension, which was incorporated at the following Health Assembly into resolution WHA37.13, implies “a phenomenon that is not material in nature but belongs to the realm of ideas, beliefs, values and ethics that have arisen in the minds and conscience of human beings, particularly ennobling ideas”. One such idea was the concept of health for all, one that was greatly influenced by such qualities “as a sense of decency, empathy with the world's health underprivileged, compassion, and the desire for social justice regarding health”. The health-for-all call for a “socially productive life” had a non-material connotation, as a prerequisite for social productivity is “awareness by people and communities of the factors affecting their health as well as their involvement in shaping their own health destiny”. This involvement could only proceed “in ways that are commensurate with their value systems, their beliefs, their attitudes and their customs”. Resolution WHA31.13 invited Member States to consider including in their health-for-all strategies a spiritual dimension as defined in this resolution in accordance with their own social and cultural patterns.

Subsequent developments in the health-for-all strategies are evaluated below.

Programme of work and programme budget

The Sixth General Programme of Work, which was approved by the Twenty-ninth session of the World Health Assembly in 1976 (resolution WHA29.20), covered the period 1978–1983, and was in force at the start of the fourth decade (5). It reflected the main trends in the way WHO had formulated its programme during the 1970s. It proposed that programmes rather than projects be emphasized. When programmes came to dominate the activities of WHO at country level, WHO would phase out project implementation, “giving momentum to WHO's coordinating role”. National governments would then assume responsibility for managing programmes.

This development was predicated on the existence of national health policies and programmes aimed at “solving the country's most important health problems ... [that] might include major development projects where they are required and nationally acceptable”. At

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the regional and central levels of WHO, a systematic analysis of problems identified at country level was expected to lead to “the formulation of programmes that have clearly defined, realistic purposes, whether for the support of individual national programmes or for the solution of priority regional or global health problems”.

The main objectives of the Sixth General Programme of Work were grouped into six areas:

- development of comprehensive health services
- disease prevention and control
- promotion of environmental health
- health manpower development
- promotion and development of biomedical and health services research
- programme development and support.

Formulating health development programmes and projects should be started at the country level. Selected priorities and requests for WHO assistance would help shape the Seventh General Programme of Work. To promote the integration of health planning into overall national socio-economic development planning, WHO would, “where necessary, promote effective intersectoral communication in collaboration with other multilateral and bilateral assistance agencies”. The Organization would assist when asked to create permanent mechanisms for health planning, programming and evaluation, and advise on managing programmes related to health.

During the final two years of the Sixth Programme of Work, programme budget proposals aimed to impact on countries in four interlinked ways:

- help Member States act individually and collectively to implement the Global Strategy for Health for All;
- provide and update information on health systems, infrastructures and technology by reviewing existing knowledge and promoting scientific endeavour, and advise on how to best apply this knowledge;
- improve the capacity of countries to absorb and use knowledge by strengthening their infrastructures to deliver programmes based on technology appropriate to their health and socioeconomic situation;
- mobilize national and international resources to help developing countries implement their health-for-all strategies.

The Executive Board, at its 63rd session in January 1979, decided that the Seventh General Programme of Work should put “particular emphasis on the formulation of national, regional and global strategies for attaining an acceptable level of health for all by the year 2000” (resolution EB63.R17). This programme of work was approved in 1982 (resolution WHA35.25). It aimed to systematically build the operational infrastructures of health systems on the basis that a health system consisted of “interrelated components in homes, educational institutions, workplaces, communities, the health sector and other related sectors”, including “a health infrastructure which delivers a variety of health programmes and provides health care to individuals, families and communities. Such health care consists of a combination of promotive, preventive, curative and rehabilitative measures. The system is usually organized at various levels, the first of which is the point of contact between individuals and the system, where primary health care is delivered; various intermediate and central levels provide more specialized services and support as they become more central” (6).

The criteria for selecting programme areas for WHO involvement included: high social relevance, responding to identified components of national, regional and global strategies for health for all; demonstrable potential for making progress towards solving the problem; strong rationale for WHO involvement; and non-involvement would have serious adverse health repercussions. The Organization's country-level activities aimed to help solve major public health problems, particularly those of underprivileged and high-risk populations, and resulted from a rational identification by countries of their priority needs. It was hoped these activities would lead to the sustained implementation of countrywide health programmes.

Intercountry and regional activities were encouraged if similar needs were identified by several countries in the same region or if cooperative effort was likely to contribute significantly to achieving the programme objective. WHO's involvement in multicountry activities could also be justified if countries asked the Organization for support, or if such involvement was seen as an essential regional component of an interregional or global activity.

Two general approaches were outlined: coordination and technical cooperation. Whereas WHO's technical cooperation is primarily a two-way process between WHO and its Member States, WHO's coordinating function in international health, as called for by its Constitution, is carried out primarily through the collective action of its Member States at the Health Assembly and by the Executive Board and the regional committees, with the support of the Secretariat. As described in the Seventh General Programme of Work:

Coordination implies, essentially, WHO leadership aimed at bringing to bear the right solution on the right problem with the right amount of quality of resources at the right time and place. It thus lies within the Organization's coordination function to identify health problems throughout the world that deserve high priority and for whose solution international action is required. The right solutions include the formulation of socially relevant international health policies in response to these problems, the definition of principles, capable of local adaptation, for interpreting policies and the development of international strategies, plans of action and programmes for giving effect to these policies. They also include the reaching of agreement on priorities for implementation. In support of the above, the Organization's coordinating function encompasses the promotion of health research and development, and the definition of the scientific and technical bases for health programmes, including norms and standards. It does so through identifying the world's most important health research goals and promoting the collaborative efforts of the world's most suitable health researchers to fulfil these goals. The right place for WHO's activities is principally within countries, activities at other levels supporting country endeavours. As for the right time, this implies a forward-looking approach.

Technical cooperation implies joint action by Member States and with WHO to achieve the highest possible level of health for all people. It is characterized by the following: equal partnership among all cooperating parties – developing and developed countries alike, WHO and other intergovernmental bilateral, multilateral and nongovernmental organizations (NGOs); respect for the sovereign right of every country to develop its national health system in a way that is appropriate to its needs; using all internal, bilateral and other resources to this end; and making use of scientific, technical, human, material, information and other support provided by WHO and other partners in health development.

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The classified list of programmes adopted for the Seventh General Programme of Work provided a generalized model of support to help national health systems develop and operate based on primary health care in line with the Alma-Ata report and the Global Strategy for Health for All by the Year 2000. It comprised four broad interlinked categories:

- direction, coordination and management
- health system infrastructure
- health science and technology
- programme support.

Direction, coordination and management involved formulating WHO policy and promoting it among Member States and in international political, social and economic forums, as well as developing, coordinating and managing the Organization's general programme.

Health system infrastructure aimed to establish comprehensive health systems based on primary health care and related political, administrative and social reforms, including a high level of community involvement. It dealt with:

- establishing, strengthening, organizing and managing health system infrastructures, including related manpower, by applying a well defined managerial process and related health systems research;
- delivering well-defined countrywide health programmes;
- absorbing and applying appropriate technologies that form part of these programmes;
- the social control of the health system and the technology used in it.

Health science and technology, as an association of methods, techniques, equipment and supplies, together with the research required to develop them, constitutes the content of a health system. Health science and technology programmes dealt with:

- identifying appropriate technologies for health system infrastructure
- the research required to adapt or develop technologies not yet appropriate
- the transfer of appropriate technologies
- the search for social and behavioural alternatives to technical measures
- social control of health science and technology.

Programme support dealt with informational, organizational, financial, administrative and material support.

The Director-General, speaking to the World Health Assembly in 1985, described the Seventh General Programme of Work as an example of "positive impatience", one that "struck new ground in health development fearlessly in spite of its conservative opposition. Its innovation was so startlingly obvious that it is difficult to believe that it was not firmly advocated decades ago. That innovation consists of building up a health system based on a solid infrastructure whose backbone is people, and engaging in a blend of health and socioeconomic research and development to ensure the generation of technology that is really appropriate for the country concerned and its proper use by the infrastructure ... Technology means not only technical measures, but also social, behavioural and economic ones" (7).

In 1985, the Health Assembly accepted two major innovations proposed by the Director-General, namely health-for-all leadership development, and financial auditing in policy and programme terms. Health-for-all leadership development aimed to establish throughout the

world a critical mass of people able to conceive and implement national strategies for health for all. Financial auditing in policy and programme terms meant identifying how spending decisions were made. It also aimed to clarify when decisions were taken, tracing the progress of programme implementation in relation to expenditures.

The Director-General took personal responsibility for establishing the health-for-all leadership development scheme and “nurturing it during its formative years, drawing on the human resources required wherever they exist, at whatever organizational level”. A global, multidisciplinary task force (with members from the regions) devised a strategy and an initial plan of action. In the regions, similar groups were established. Initial activities involved national policy-makers and senior managers from the health and health-related sectors, and staff from training institutions, NGOs and WHO, especially WHO country representatives. The key components of the scheme included talks or colloquia among leaders on health-for-all strategy and options for action; creating resource and support networks; support to individual Member States to develop a strategic plan of action; and identifying young professionals with leadership potential, and creating mechanisms to enable them to realize that potential.

About 250 senior national officials from more than 40 countries participated in six inter-country colloquia on leadership development for health for all and technical cooperation among developing countries (TCDC); one was held in Cuba, one in Mozambique, two in Thailand, and two in Serbia and Montenegro. Some of the participants initiated leadership development activities in their own countries. The initiative was enthusiastically supported by regional committees, professional associations and educational institutions. International health-training programmes, focusing on young professional people, were started in the Region of the Americas and the Western Pacific Region, and four leading members of the International Federation of Medical Student Associations were trained each year at WHO in Geneva, with a view to enhancing their leadership qualities.

The budget continued to be constrained by the economic difficulties faced by many Member States and by the decision of the United States, the major contributor, to pay only a small fraction of its WHO-assessed contribution; not, it declared, because of lack of support for WHO, but for broader political reasons related to its perception of the management of the United Nations. So uncertain was the Organization’s financial situation that the Director-General designated a “phantom programme budget” for 1988/1989. Phantom or not, the Board asked him to continue for the foreseeable future to: propose programme budgets that provided for zero budget growth in real terms; to make explicit the reasons for estimated cost increases resulting from inflation and the effects of currency fluctuations; to absorb these increases as much as possible; and to continue to seek extrabudgetary resources to finance essential health activities for which the regular budget did not provide sufficient resources. See Chapter 17 for further details on budget and finance.

Optimal use of WHO’s resources by Member States

While in principle, the governing bodies have always been aware of the need to efficiently manage WHO’s resources, only in the mid-1970s was serious attention paid to the relative weight of WHO’s resources at the global level vis-à-vis the regional and country levels. This began when the Twenty-eighth World Health Assembly in May 1975 (resolution WHA28.76) called for WHO to “give increased priority to the provision of direct, immediate and adequate

assistance and services to the developing countries”, with the regular programme budget providing a substantial increase in real terms of technical assistance and services for developing countries from 1977 to the end of the Second Development Decade.

The initial steps taken by the Director-General were well received, but the Group of 77 developing countries appear to have decided in the interim that the “substantial increase” referred to in resolution WHA28.76 should be defined more precisely. In May 1976, a draft resolution was introduced by one of the group’s members, asking the Director-General to reorient the work of the Organization to ensure allocations from the regular programme budget for technical cooperation and providing services reached at least 60% in real terms by 1980. Although several amendments were proposed, they were all defeated. The resulting resolution (WHA29.48) was approved by 82 votes to none, with 26 abstentions.

The next major move was to look at WHO’s role at the country level, particularly the role of the WHO representative. This emerged logically as part of the United Nations system-wide move towards country programming (see third decade volume). The Executive Board discussed the subject at its 58th session in May 1976 and decided to undertake an Organization study, for which a working group was established. This group visited 11 countries in five regions and spoke to national health authorities at the highest level and representatives of other economic and social sectors, WHO staff from the regional offices and representatives of WHO, other United Nations agencies and funds, and other multilateral and bilateral aid agencies.

The Organization study re-examined the role of WHO at the country level “with a view to making it more efficient” (8). Topics addressed in the study were: the constitutional basis of the role of WHO at the country level; the evolution from the concept of technical aid or assistance to the concept of cooperation; current trends in the technical cooperation programme at the country level; the need for new methods of technical cooperation; the role and functions of WHO representatives; and the repercussions of the new methods of cooperation on the structure of WHO.

The subject was discussed during sessions of the Executive Board and the Health Assembly in 1977 and 1978. While the Board’s report was well received, there was not unanimous support for the idea that nationals could serve as WHO representatives. Training in health management, especially in the application of country health programming, however, was considered a key way to raise the qualifications of representatives and coordinators to the desired level. WHO’s new role at the country level needed to be supported at the regional and global level. Integrated country programmes required policy guidance and programme review and evaluation by regional committees. The regional programme budget should no longer be built from a series of fragmented projects; a programme-oriented approach was needed, within which projects were identified, planned and implemented in line with overall programme objectives.

The Executive Board completed its organizational study into “*WHO’s role at the country level, particularly the role of the WHO representative*” in January 1978. The Thirty-first World Health Assembly adopted in May 1978 resolution WHA31.27, congratulating the Executive Board on its study and requesting the Director-General to apply its conclusions and recommendations.

- The donor-to-recipient “assistance” approach should be abandoned and replaced by real cooperation between the Member States and WHO as equal partners.
- The aim of any collaboration should be the country’s self-reliance; this implied a gradual change in the mode of collaboration to meet the country’s real needs.

- An essential function of the Organization was to collaborate with countries in planning, managing and evaluating their health programmes; this collaboration should enable countries to select activities to solve priority problems.
- Programming at the country level would help WHO better develop its programmes at the regional and global levels.
- The Organization should enhance its dialogue with nationals at the country level and at other echelons of the Organization.
- Dialogue between WHO and governments should lead to national authorities taking a more active role in the work of WHO.
- WHO should contribute to a more equitable distribution of health resources, both between and within countries.
- The new methods of collaboration implied a better use of WHO resources.
- Development of the WHO representative's role should continue by strengthening their technical functions and reducing their representative functions.
- Liaison between WHO and the governments, hitherto performed by WHO representatives, could benefit from new approaches that made greater use of national skills and resources.
- Using national personnel as WHO representatives and project managers should be further explored.
- Different approaches to cooperation and coordination at the country level needed to be evaluated continually, with particular reference to the role of WHO representatives, national coordinators and other mechanisms, such as national coordination committees.
- In light of the report's definition of their functions, the title of WHO representatives should be changed to WHO coordinator, and where national personnel filled this function, their title should be WHO national coordinator.
- Changes to WHO action at the country level and the reorientation of the WHO representatives' functions required a new type of public health training that the Organization should pioneer in conjunction with educational bodies.
- Training should emphasize health management and take place wherever possible in the regions. It should be geared to practical national problems in health management, be based on national institutions and organized jointly for national and international health personnel.
- The change in the relationship between Member States and WHO required a re-examination of the Organization's structures and functions.

Resolution WHA31.27 also urged Member States to increase their participation in WHO's work, to consolidate their close partnership with WHO in formulating and implementing the Organization's policies, and to ensure their requests for technical cooperation with the Organization conformed to the policies they had adopted at the Health Assembly.

Dr Mahler, during the Board's meeting in January 1978, said he considered the difference between technical cooperation and what had formerly been termed technical assistance lay in the level of commitment of individual countries to the concept of technical cooperation, which WHO could support through action arising from specific resolutions adopted by its governing bodies. When recipient countries felt "such deep and positive involvement, they were naturally eager to make maximum use of the possibilities offered by WHO".

As a consequence of the recommendation for an "equal partners" relationship between Member States and WHO, a managerial study of "unprecedented magnitude" of WHO's

structures in the light of its functions took place under the Executive Board's direction. The high point of the study was the Health Assembly adopting in May 1980 the resolution WHA33.17, which called for WHO to concentrate its activities on supporting health-for-all strategies and to strengthen its role in promoting action for health. The Health Assembly felt the functions of the regional offices and WHO headquarters should be redefined, and organizational structures and staffing adapted to ensure Member States received adequate and consistent support. The engagement of national staff and international WHO field staff should be reviewed to ensure their full involvement in collaborative national programmes.

Commenting on the Board's study, the Director-General said many crucial questions remained: "Whether it could be implemented and, if so, how; whether such policies could be carried out in a world plagued by political and economic crises; and whether the work could be done against the exigencies of time. It was essential that the Organization's processes, structures and working relationships were as well adapted as possible to support the efforts required with maximum force and minimum waste. The talking would have to cease and the action begin."

"The usefulness of WHO in helping to attain health for all", he continued, "would depend on the single-mindedness with which Member States, nationally as well as internationally, applied the policies and principles they had generated and adopted in WHO. If Member States were so ready, that augured well for the unity of the Organization, but if Member States talked one way in WHO's governing bodies and subsequently acted in another at home and in WHO's structures, they could not evade the spotlight of public opinion and would expose themselves and WHO to international accusations of insincerity or naivety, or both."

The Health Assembly felt the Executive Board should: strengthen its role in giving effect to the Health Assembly's decisions and policies, and in advising it; become more active in presenting major issues to the Health Assembly; and correlate its own work with that of the Health Assembly and the regional committees, monitoring how the regional committees reflected the Health Assembly's policies in their work. The regional committees, in the Health Assembly's view, should: intensify their efforts to develop regional health policies and programmes in support of health for all; support technical cooperation among all Member States; help establish or strengthen multisectoral national health councils; and increase their own monitoring, control and evaluation criteria.

The Health Assembly also urged Member States to take action. They should review the role of their ministries of health, establish multisectoral national health councils and mobilize resources for health development. In addition, they should improve coordination to support their health development strategy and technical cooperation within WHO, and in the United Nations and the specialized development agencies. The Director-General was asked to take measures to ensure Member States were given timely, adequate and consistent support.

The Director-General's plan of action in response to resolution WHA33.17 was seen by his office as "the social control of bureaucracy", both within Member States and the Secretariat. The more active role being played by the governing bodies, including the regional committees, in the Organization's work was a tangible outcome of that control. The Executive Board's discussions of the expert committee reports could be regarded as "social control of technology on behalf of the Organization as a whole". Within the Secretariat, the Director-General had established an independent review group, consisting of an emeritus regional director and a recently reappointed regional director, with particular emphasis on the health-for-all strategy. A "significant innovation" was the creation of "country desks and multidisciplinary teams in regional offices,

to provide countries with composite support from regional advisors; in other words, horizontal support in addition to the vertical support from particular programmes”.

The Executive Board, in its next organizational study, examined the role of WHO expert advisory panels and committees and collaborating centres in providing advice and carrying out technical activities. WHO collaborating institutions in the Region of the Americas and in the South-East Asia, European and Western Pacific Regions were visited, and Board members participated in the work of the global and regional advisory committees on medical research. The Board's report was presented to the Thirty-third World Health Assembly in May 1980. After considering the study, the Health Assembly adopted resolution WHA33.20, which concurred with its findings, conclusions and recommendations, especially the following: the broader definition of the WHO expert and role of the WHO collaborating centre; the wider selection of experts and institutions to cooperate with the Organization to ensure a more balanced system of expertise; and the major role devolving upon the WHO regions in building and operating the system through the collaboration of Member States. Revised regulations were prepared and agreed to.

In 1982, the Director-General decided to provide optimum support to countries in preparing and implementing their strategies. He instigated measures aimed at national self-reliance in managing health systems and the proper use of WHO resources in countries, with support from all levels of the Organization. The agreement with Thailand was an example of such an approach. A joint government/WHO coordinating committee was established to manage WHO's 1982–1983 programme budget in the country and to plan the use of WHO resources for 1984–1985. Other joint efforts soon followed.

Responding to Executive Board resolution EB69.R10, the Director-General outlined a managerial framework for using WHO resources to directly support Member States. WHO resources should be used, for example, to assist governments build health systems in accordance with the Global Strategy for Health for All, with emphasis on sound infrastructure to carry out programmes using appropriate technology. Another key activity would be to build countries' managerial, monitoring and evaluation capacity for joint policy programme reviews by governments and WHO to establish whether national programmes conformed to policies and whether WHO resources were being properly used. Further regional and country-level developments are presented in Chapter 4.

Fellowships were also targeted as part of the Organization's drive to use its resources more efficiently. When the health-for-all leadership programme was announced (see above), the Director-General proposed that the fellowship budget might be one source of funds, noting that more than US\$ 50 million was devoted to fellowships under the regular budget alone during each biennium, and that their relevance was no longer as certain as it had been during the early years of WHO's existence. In too many instances, scarce WHO funds were spent in countries on training that was not central to the country's priority needs. Resolution EB71.R6 adopted by the Executive Board in 1983 had urged Member States to be selective in requesting fellowships and to explore other training mechanisms available, particularly within the country. But the Director-General doubted whether this resolution “had much effect; I have the feeling that there is little awareness of its existence”. No further action was taken by the governing bodies on this matter until 1991, when the Board adopted resolution EB87.R23, which recognized that progress in its earlier resolution was “uneven”, making it difficult to assess properly the effectiveness of the fellowship programme.

At the Executive Board's request, the Director-General prepared guidelines in 1985 detailing the issues to be dealt with in a regional programme budget policy, the programme budgeting

process of WHO's resources in countries, and related mechanisms. These guidelines defined the roles of the regional offices and regional committees in preparing and monitoring the regional programme budget policies and in reviewing the 1988–1989 and subsequent programme budget proposals to ensure they reflected these policies. They also described the process for monitoring and evaluating the policy, and presented a timetable for its development, implementation, monitoring and evaluation by the governing bodies and the Secretariat.

WHO's collaboration with the World Bank and the Pew Memorial Trust with a view to cooperating with developing countries to formulate health policies for the effective use of resources – in which the Carnegie Corporation also joined – led to a joint international health policy programme for the period 1987–1989. The Pew Memorial Trust provided US\$ 3.5 million for the programme, which initially focused on Africa and Asia. Policy-makers and analysts received financial and technical support to carry out studies of benefit to national health-for-all strategies and to strengthen institutional capacity in this area. Ten proposals from 10 countries – Burundi, China, Kenya, Nigeria, Pakistan, The Philippines, Republic of Korea, Thailand, Uganda and United Republic of Tanzania – were approved for support.

The fellowship programme was not the only aspect of WHO's work that occupied the Director-General. In his introduction to the 1988–1989 programme budget, he admitted with “great disappointment” that technical cooperation (i.e. applying the policies, principles and programmes developed through WHO's coordination role) was “scarcely happening”. Too many countries still considered WHO only one among many donor agencies, “giving them homeopathic assistance, rather than [treating them as] their intimate partner, providing them with not only human but also moral, emotional and intellectual resources, valid information, relevant expertise and the fruits of experience”. There were shortcomings also in programme budgeting. Too few countries in too few regions were making use of the managerial framework that had been established. Even when government/WHO dialogue took place, too often it led to “shopping lists” of separate WHO programmes, or worse, “isolated projects, or even items of supplies and equipment”, according to the Director-General. The clause in resolution WHA33.17 directing the Director-General and regional directors to respond favourably to government requests only if they conformed to the Organization's policies was “rarely if ever applied”, a point he had already made in his introductory statement to the 1986–1987 programme budget.

In 1987, the Fortieth World Health Assembly examined the Director-General's reflections on managing WHO's resources, along with the Executive Board's comments on them, and asked the regional committees to do likewise and report on their deliberations to the Board at its January 1988 session (resolution WHA40.15). The committees were asked to examine whether: WHO's value system was being adhered to and the related policies and strategies being faithfully carried out; managerial arrangements and regional programme budget policies for making optimal use of WHO's resources were being followed; WHO's structures were being suitably used for the functions devolving on them; and if national and WHO staff were adequately equipped to use WHO resources efficiently for national health development.

Evaluation of strategies for health for all by the year 2000

In his addresses to the World Health Assembly and the regional committees, Dr Mahler provided his own, often negative assessment of progress. In 1982, when “the countdown for health for all” began, he expressed concern that rather than concentrating on those essential issues that

would make or break the movement towards health for all, “we were spreading our efforts too thin”. Instead of applying the knowledge gained through hard work, WHO was “still looking for other magic words to solve our problems, and listening to the ad-hoc advice of well-meaning supporters and not so well-meaning adversaries” (9).

The Director-General also expressed concern that WHO was using the health-for-all strategy to strengthen health ministries but that many ministries lacked the “political clout they require to carry out the responsibilities the Global Strategy assigns to them”. Arguing that no one else could be given this responsibility, Dr Mahler concluded that health ministries “must maintain control of the situation on behalf of the government as a whole”. Weak relationships with universities, medical schools and schools of health sciences were a constraint “that can and must be converted into an opportunity”, for it is these schools and universities “that are turning out the doctors and other professional health workers who are expected to lead the health system to victory”. Noting that the dialogue between health ministries and medical schools “will not be easy”, an “unusual intellectual effort accompanied by no less unusual an emotional appeal” was required. Convincing information outlining the aims of health for all, and the role of the health workers in achieving it, would be required, along with an appeal to the “conscience of those who are often the health sector’s unappointed leaders to fulfil their social responsibilities”.

In his address to the World Health Assembly in 1983 (10), Dr Mahler introduced another concern under the heading “red herrings”, one he described as “negative impatience” and demonstrated by initiatives from people “outside the developing countries of a few isolated elements of primary health care for implementation in these countries; or the parachuting of foreign agents into those countries to immunize them from above; or the concentration on only one aspect of diarrhoeal disease control without thought for the others. Initiatives such as these are the red herrings that can only divert us from the track that will lead us to our goal.” This approach came to be known as “selective primary health care” and is discussed further in Chapter 3.

By 1985, the economic crisis was threatening to undermine development assistance to those countries most affected by it. Referring to a “developmental crisis”, Dr Mahler said several countries “with a long history of official development assistance” were “increasingly diverting their efforts from supporting development to responding to the crisis”. He noted that “too many countries, too many bilateral and multilateral agencies, too many influential individuals, have become too disillusioned with the prospects for genuine human development to be ready to continue the struggle for it. No wonder they clutch at the straw of emergency aid. That ... is the greatest human crisis of all in the 1980s – the crisis of confidence in development.” (7)

The first progress report on implementing strategies for health for all was presented to the Thirty-seventh World Health Assembly in May 1984. Member States were urged to accelerate their drive towards health for all, especially their efforts to reorient health systems to primary health care and to strengthen the managerial capacity of these systems. The Health Assembly also stressed the need to focus Organization resources on accelerating the health-for-all strategy, and to intensify technical cooperation with Member States.

The first evaluation by the governing bodies of the Global Strategy for Health for All by the Year 2000 reached its climax at the Thirty-ninth World Health Assembly in 1986, following evaluation by Member States, individually and in the regional committees, during 1984 and 1985. A total of 146 Member States had submitted reports evaluating their national strategies and had reaffirmed their commitment to the health-for-all goal. Member States were urged to use their evaluation reports to guide their national health policies and health development

processes, and to involve decision-makers, community leaders, health workers, NGOs and people from all walks of life to attain national health goals.

The Health Assembly also urged Member States to emphasize district health systems based on primary health care, defining targets for the integrated delivery of essential elements of primary health care until all districts and all elements were covered (see Chapter 6). The Health Assembly gave special consideration to the economic aspects of implementing the Global Strategy (resolution WHA39.15). It recognized that the global economic crisis had resulted in a fall in living standards in many countries, high unemployment and austerity policies, including substantial cuts in health budgets that threatened progress towards health for all.

Assessing the state of the health-for-all campaign, Dr Mahler said “we find ourselves up to our neck in verbal mud, fighting all sorts of conceptual alligators eagerly poised to eat us up alive”. Health for all was seen by some as “an empty slogan, an unrealistic ideal based on romantic ethics, and that primary health care is too unwieldy a vehicle to reach that ideal; that health-for-all strategies are not as cheap as we thought, and that in any event, we have chosen the wrong time to launch our initiatives because of the widespread financial crisis; that there is no way of modifying the pattern of resource allocation within the health sector and between it and other sectors; that it will take a whole generation to modify the attitude of the medical profession, and that non-professional health workers do not inspire the confidence of people; that health activities are a mere consumption of resources and do not contribute to social and economic development; and that governments are only pretending to be faithful to the principles of the Alma-Ata Declaration, while in reality they are setting up primary health care projects as small additions to existing ministry of health structures in order not to rock the ministerial boat” (11).

Dr Mahler called for a return to first principles, “to the ethical challenge of health for all, to its contribution to socioeconomic development, and to primary health care as a vehicle for both health and development”. Primary health care “starts with people and their health problems, and since they have a major role to play in solving these problems, they have to be actively involved in doing just that rather than being passive recipients of care from above, no matter how well intended that care is ... active involvement of people raises their self-esteem, mobilizes their social energies and helps them to shape their own social and economic destiny ... to build up health systems that involve people requires that countries will have to divide the delivery of primary health care into manageable units –geographical areas small enough to be managed without sinking in the mud of central bureaucracy, yet large enough to make it feasible to include most of the ingredients required for self-reliant health care”. The time had come to “concentrate on building up district health infrastructures ... Progressive decentralization to districts can be targeted for – so many districts by 1988, so many by 1990, so many by 1992, and so on. Decentralization implies delegating responsibility and authority under the monitoring and control of the national health policy.” Each district could then set realistic targets for each of the elements of primary health care in order of priority. Piecemeal measures taken outside the framework of the national health policy would “weaken rather than strengthen the infrastructure” (11).

One of the Global Strategy’s key features, in keeping with the policy of decentralization, was for regional committees to review WHO action in individual Member States in the region, something most regions were not doing when Dr Mahler addressed them in 1987. He was convinced that only in this manner would the regions “realize how useful that mutual trust can be ... for it can help to minimize your weaknesses and strengthen your strengths”. Only in this

way would the technical cooperation component of the regional budget improve; if there was no such improvement, this component might be “criticized out of existence”, which in turn, might lead to “serious reservations about our constitutional regional arrangements, if not to an end to them” (12). This internal crisis had been sparked by the financial crisis that hit the organization during this period (see Chapter 17).

In his last address to the World Health Assembly as Director-General, Dr Mahler issued a challenge. He told delegates the World Health Assembly could “lead the world and all its people to ever better health and ever greater social justice” if you:

- maintain your faith in human development and in the important contribution of health to that development;
- act as the international social carriers of health;
- do everything in your power to mobilize the human and financial resources required to improve the health of people everywhere;
- apply in your countries the universal principles for health that have been defined in your WHO;
- insist on your governments following these principles as part of their development efforts;
- impart these principles to your people and inspire them to use them in their struggle to improve their own health and the health of the society in which they live;
- use these principles in your bilateral and multilateral relationships, in a spirit of equal rights of the people living in the south, north, east and west of spaceship earth;
- insist on **your** Organization, **your** WHO, continuing to lead the way to better health throughout the world through action guided by the vision that inspired these principles and that could inspire further beneficial innovations in the future (13).

Technical discussions at the Health Assembly

In the early years of the Organization, the Health Assembly concentrated largely on administrative, budgetary, financial and legal matters, but it was soon agreed that the presence of a large group of international public health administrators should be exploited by holding special technical discussions.

In 1950, the Executive Board decided that these technical discussions should address specified subjects, with a view to applying existing knowledge in those fields to public health administration. In 1957, the World Health Assembly set down the following precepts, which have been more or less applied over subsequent decades.

1. Discussions should provide the opportunity for an informal exchange of views and experience.
2. Subjects should be of international interest, of a general character suitable for group discussions by public-health administrators and clearly defined.
3. Each topic should be selected two years in advance by the Board.
4. Documentation should be prepared by the Secretariat and distributed about a year in advance to Member States.
5. Nongovernmental organizations and, through governments, national organizations should be asked to help prepare for the discussions.
6. The Board should appoint a general chairman, to be nominated by the president of the Health Assembly.

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7. Group discussions should be encouraged.
8. A report of the discussions should be submitted by the general chairman to a plenary meeting of the Health Assembly and published later.

The subjects chosen for the decade under review were:

- 1978: general policies and practices for medicinal products; and related international problems
- 1979: technical cooperation among developing countries
- 1980: the contribution of health to the New International Economic Order
- 1981: health system support for primary health care
- 1982: alcohol consumption and alcohol-related problems
- 1983: new policies for health education in primary health care
- 1984: the role of universities in the strategies for health for all
- 1985: collaboration with nongovernmental organizations in implementing the Global Strategy for Health for All
- 1986: intersectoral action for health
- 1987: economic support for national health-for-all strategies.

The Board's working group on the Health Assembly's method of work, while agreeing that the technical discussions should continue, proposed they be held only in even-numbered years when the Health Assembly would not be reviewing the biennial programme budget. When a few Board members questioned the usefulness of these discussions, the Director-General was asked to review the matter and offer some proposals for the governing bodies to consider. The Director-General proposed that the discussions be geared towards a supportive role in the implementation of the strategies for health for all. This was accepted (resolution WHA37.21) and they remained an annual event.

Health and politics

The political turbulence that disturbed the work of the Organization during its third decade continued into the fourth. In the 1970s and the 1980s, there was military conflict worldwide, the Cold War was continuing and violence in the Middle East led the Organization to spend much time and effort evaluating the health conditions of the Arab population in the occupied Arab territories, including Palestine, often in a heavily acrimonious atmosphere at the Health Assembly.

Amid an increasing awareness of the potential for improved health care to promote peace, the Thirty-second World Health Assembly in 1979 asked the Director-General to report on what additional steps the Organization could take towards international socioeconomic development and implementing United Nations resolutions on strengthening peace, détente and disarmament. In a resolution on "the role of physicians and other health workers in the preservation and promotion of peace as the most significant factor for the attainment of health for all", the Thirty-fourth World Health Assembly urged Member States to intensify their efforts to consolidate peace in the world. It proposed an international committee of experts in medical science and public health to study the contribution WHO could make to economic and social development and to help

implement United Nations resolutions on strengthening peace and, in particular, preventing thermonuclear conflict.

The committee, comprising physicists, physicians, geneticists and epidemiologists, and also experts in public health, nuclear medicine and biology, radiopathology, radiation protection, burns injuries and plastic surgery, met in 1982. The World Health Assembly endorsed the committee's conclusion "that it is impossible to prepare health services to deal in any systematic way with a catastrophe resulting from nuclear warfare, and that nuclear weapons constitute the greatest immediate threat to the health and welfare of mankind". The Director-General was asked to publish the committee's report (14).

A WHO management group of scientists (WHOPAX), established to continue the work of the international committee, met several times during 1986 (the International Year of Peace) and 1987 to discuss research on the effects of nuclear war on health and health services, and to revise the report that was published in 1984. New material was added in the form of annexes from studies on: the effect of fires on the number of casualties; the immunological consequences; the effect on climate, including a possible 'nuclear winter'; problems in food supply; the biological effects of prenatal irradiation; and the psychosocial effects of the nuclear threat (15).

The Thirty-second World Health Assembly adopted several resolutions calling for more health cooperation with newly independent and emerging states, and with national liberation movements organized by the OAU, later to become the African Union. This led the African Region to organize a conference in November 1981 on apartheid and health in collaboration with the African liberation movement, the front-line countries and the OAU Committee for the Liberation of Africa. In 1980 and 1981, the Health Assembly adopted several resolutions to increase cooperation with newly independent and emerging states in Africa as part of their struggle for liberation, in particular, by providing health assistance to front-line states and to Zimbabwe, Namibia and refugees in Africa.

As in previous decades, the Middle East was given special attention. The Health Assemblies called for more health assistance to refugees and displaced persons in Cyprus, assistance in Lebanon and continued efforts to improve the health conditions of the Arab population in the occupied Arab territories, including Palestine.

The president of the Thirty-eighth World Health Assembly in 1985 appealed to delegates to strive to avoid spending the Health Assembly's precious time on extraneous political issues that might better be discussed elsewhere in view of WHO's unique technical and social mandate. The matter was subsequently discussed by the Executive Board, for which the Director-General prepared a discussion paper saying it was possible for WHO to take political action at the international level to support Member States implement their health policies, but that it was not possible for the Organization to deal effectively with international political differences, since it was a specialized health agency.

In his background paper, the Director-General said that being a specialized health agency meant the Organization would have to "display a high degree of maturity in handling political matters" if it were to devote its efforts to achieving health for all. However, any political influence the WHO might have on health policy depended on "consensus among its Member States". Collective policy, decided unanimously, bound Member States together. On the other hand, policy decisions decided by majority vote would not deliver the consensus to enable WHO to operate as "the world's collective health conscience whose policy inspires national health policies" (16).

At the end of the Executive Board's discussion on this item in January 1985, the Director-General observed that "the serenity with which the debate had taken place was of great importance",

as in the contemporary world “there was no limit to the issues which could be politicized by some group or other at the Health Assembly”. Noting that one of the delegates at the Health Assembly had expressed concern that political decisions could have a negative impact on health, he warned of “the negative impact which politics at the Assembly could also have on the Organization, and therefore, ultimately on people’s health. At the present time, a political climate has become established in the world whereby developmental agencies are being closely watched ... and, therefore, the moral strength of the Organization might easily be undermined if it deviated from its mandate. ”

The sense of responsibility felt by Member States to maintain that moral strength was illustrated when the President of Cuba, Fidel Castro, withdrew an invitation to hold the Health Assembly in his country – a logical venue given the remarkable progress in the field of health – because he was aware of the problems it might create for WHO.

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WHO's general programme development and management

In 1948, the First World Health Assembly established a programme in which topics were grouped by their importance. Malaria, maternal and child health, tuberculosis, venereal diseases, nutrition and environmental sanitation were assigned top priority, second priority was given to public health administration, third to parasitic diseases, fourth to virus diseases, fifth to mental health, and sixth to other activities. To support work on these priorities, WHO established advisory services to be provided by regional organizations in joint field activities between governments and WHO. In parallel, WHO established central technical services, mainly to collect, classify, coordinate and disseminate information not directly related to field work, such as epidemiological services, health statistics and editorial and reference services. These two service departments operated until December 1958, when they ceased to exist as separate organizational entities, although the functional distinction remained.

The First General Programme of Work, which was approved in 1951, called for regional organizations to be responsible for assessing national needs and requests for assistance. However, the responsibilities of headquarters and those of regional organizations were not specified, as many headquarters services also served governments, and many regional services depended on the ability of headquarters to estimate whether a request for expertise could be met. Efficient decentralization was seen as a way to strengthen regional machinery, so that many of the services could be planned on the spot, based on local needs and conditions, and reach the people through an agency that was close to them. Serious efforts at decentralization started in the 1970s and continued well into the 1980s.

Managerial process for national health development

From mid-1973, WHO's system analysis staff started to design, test and apply procedures for country health programming. Such programming was designed to enable national health authorities to identify health priorities, including those that had intersectoral implications, and the optimal tools to meet them.

As country health programming took root, WHO turned its attention to evaluating health programming and information systems. Provisional guidelines to evaluate programmes were approved by the Programme Committee of the Executive Board at its session in November 1977. The Committee recommended they be tested in selected WHO programmes and in countries that might be interested in applying them (1). Testing national guidelines was foreseen in at least one country in each region by 1978. The Committee also "strongly confirmed" the need for the new WHO information system and expressed satisfaction with the Director-General's strategy and the progress to date (2).

Adopting the following procedures, as specified in resolution WHA30.23 that was passed in May 1977, was another logical outcome of the decade's efforts to link WHO's programmes at regional and global levels with the decision functions at country level.

- In the early stages of programme budgeting, WHO and national authorities were to collaborate to establish cooperative programmes to achieve general health goals defined in country programmes, expressed in terms of a general programme rather than as individual projects or detailed activities.
- Proposals for technical cooperation were to be included in regional programme budgets, supported by budgetary tables in which the planning figures would be broken down by programme. This would help the regional committee review programmes. Country programmes would no longer be republished as an annex to the Director-General's proposed programme budget if the material was available to Health Assembly delegates and Executive Board members at the time of the review and approval of the WHO programme budget.
- Operational plans and estimated budgets for individual projects and activities planned within defined health programmes were to be drawn up later, as part of programme implementation at country level.
- Information on the implementation and completion of programmes and projects, and on their progress, efficiency and effectiveness, was to be made available to Health Assembly delegates and Executive Board members for evaluation.

The Thirty-first World Health Assembly (resolution WHA31.43) urged all Member States to introduce or strengthen an integrated process to: define health policies; formulate priority programmes to translate those policies into action; deliver such programmes through the general health system; monitor, control and evaluate them; and provide adequate information support. Member States were urged to use the methods developed under the aegis of WHO. At the same time, the Health Assembly requested the Director-General to continue the integrated development by WHO of processes for medium-term programming, programme budgeting, health programme evaluation, and provision of information support.

The Thirty-first World Health Assembly reemphasized the importance of country health programming as a systematic and continuing multisectoral, national process, urging Member States to introduce or strengthen that process in cooperation with WHO and other countries. It asked the Director-General to promote training in the process, as well as the research required for its development and application, and to evaluate progress throughout the world.

During the 1978–1979 biennium, country health programming was further developed, tested and applied by countries in all regions. The process had six recurrent and interrelated phases: formulating general health policies, strategies and plans of action; broad programming; detailed formulation of programmes; planning for implementation; managing implementation; and managing programme operations. Although presented as a formal sequential process, implementing it was meant to be flexible and realistic, with multiple entry points.

WHO and Member States continued to develop national health programme budgeting, evaluation of national health programmes, and information support. Health-care financing, which was closely related to programme budgeting, was the subject of a WHO study group, whose conclusions were published in 1978 (3).

The study group's 120-page report provided several examples, including those that were written up in previous decades, of country financing experiences. Various approaches to improve financing were reviewed, with social security receiving the most extensive coverage

(five pages). Selected examinations of developing countries led the study group to conclude that it was possible to collect and analyse sufficiently reliable information at modest cost, even for the private sector. Such ad hoc estimates could be made regularly to revise earlier plans, and while funds should be allocated in accordance with health policies, policy should address the effects of past methods of financing. The report summarized how the study of financing could provide important contributions to health planning. Countries and WHO were encouraged to perform studies in this area and to make results readily accessible. Similar conclusions and recommendations were made at a Council for International Organizations of Medical Sciences (CIOMS) Conference on economics and health policy in Geneva in November 1979.

As expertise and experience were acquired by WHO staff, collaboration with Member States in developing their national systems was intensified and responsibility for this aspect of the programme was moved into the health situation and trend assessment programme (see Chapter 5).

Managerial process for WHO's programme development

Within the WHO Secretariat, new mechanisms were introduced in the 1970s to coordinate programme management. Regional programme committees were made responsible for translating guidance on priorities received from the governing bodies and the expressed wishes of Member States into practical programmes at country and regional level. The Headquarters' Programme Committee (HPC), which was created in 1971, became responsible for advising on overall activities, including: research; establishing criteria and guiding principles for formulating and implementing programmes in accordance with the policies of the Executive Board and the Health Assembly; strengthening programme information support; reviewing proposals for medium-term programmes and programme budgets, particularly new technical cooperation programmes; and periodic evaluation of programmes. Multidisciplinary teams were established for each of these areas. The Global Programme Committee (GPC) was established in March 1977, comprising the Director-General, the Deputy Director-General, the regional directors and the assistant directors-general, to review major issues in programme management for the Organization as a whole.

Resolution WHA31.43 (see above) had repercussions for the managerial process within WHO, as it requested the Director-General to formulate WHO's medium-term programmes wherever possible with an indication of priorities between programmes, based on information from national health development processes, the current General Programme of Work, programme budget policy and strategy, and resolutions of the governing bodies; and to continue the integrated development of WHO's medium-term programming, programme budgeting, health programme evaluation, and information support.

To ensure the managerial processes for national and WHO programme development, and the relationship between them, were devised and implemented in a coherent manner, the Global Programme Committee established the Programme Development Working Group (PDWG) in January 1979, comprising the regional directors, the chairman of the HPC, a representative of the Director-General and a secretary. This group met twice a year to review progress in managerial processes and related activities (e.g. informatics support to WHO, external resource mobilization, and WHO's publication policy).

The PDWG sessions helped identify problems within WHO that needed to be rectified. At its first meeting in July 1979, concern was raised about the way in which national health

information systems were being promoted. “Over-complex and over-sophisticated systems were being advocated that few, if any, countries could handle.” (4) The review in March 1981 of WHO’s support capacity led the Organization to recognize that many WHO Programme Coordinators (WPCs) “were not adequately equipped” to support countries in their managerial processes” (5). It was also noted that the budget for coordinators appeared as part of the country allocation of the WHO programme budget. This made some countries reluctant to maintain the WPC’s office, preferring “to use the funds for some other purpose more directly related to the implementation of their country programme”. As a consequence, regions turned to establishing intercountry projects (or teams) to help countries manage their programme development.

With information support, responsibility for internal reporting at headquarters was transferred to programme managers, leaving the information systems programme to concentrate on methodological and technological support for information systems throughout the Organization, and providing compatible data- and text-processing services, including support to Member States in developing and operating their information systems. WHO sought to make decision-makers aware of the benefits of informatics in support of health services, and the importance of choosing appropriately; a report on the applications of such technology in health, requested by the Executive Board in 1985, was distributed to members at its 79th session in January 1987, and subsequently to Member States. Informatics were promoted also at international seminars on microcomputer applications in health services management, and through individual training for scientists as part of fellowship studies. This part of WHO’s programme grew steadily during the decade to the point where demand for informatics support exceeded the resources available.

In 1980, the medium-term programmes for the Sixth General Programme of Work were completed, all based on information and requests from Member States. The programmes were revised in the light of new policy directives from the governing bodies of WHO on health for all. Guidelines for joint medium-term programming and programme budgeting were issued in 1981 to ensure the homogeneous development of the Seventh General Programme of Work, and the progressive translation of these medium-term programmes into the three programme budgets that covered 1984–1989. A summary describing the managerial processes was issued in 1981 (6).

For 1980–1981, WHO adopted a more flexible approach to programme budgeting and managing resources at country level in order to strengthen its support to governments and its own role as the international partner of every Member State in developing and implementing the health policies and strategies they had adopted to achieve health for all. Owing to various difficulties countries were experiencing in this quest, studies were initiated in 1981 in two regions to determine how WHO could give better support to Member States, including more effective programme budgeting and better use of resources at country level.

Medium-term programmes were developed in 1982–1983, in consultation with Member States, specifying targets and activities for each programme mentioned in the Seventh General Programme of Work. Reviews and evaluations were performed at all levels of the Organization to ensure these programmes were relevant to the Seventh General Programme of Work and the Global Strategy for Health for All. In preparing these programmes, priority was given to coordinating activities at all levels to support national strategies and help national health programmes achieve their objectives; and to enhance links between programmes for building health systems infrastructure and those dealing with health science and technology at the heart of the health system. The Thirty-fifth World Health Assembly asked Member States to refer to the Seventh General Programme of Work when deciding on their cooperative activities with WHO and

other countries, and urged the regional committees to ensure regional programmes and budgets were similarly prepared.

In 1982–1983, efforts were made to integrate evaluation with the other components of the managerial process. Evaluating WHO programmes and their impact on national programmes was promoted, as was the use of such findings to improve programmes. Nevertheless, by 1985, the Director-General observed that while much effort had gone into monitoring and evaluation, and countries repeatedly told that these “must be their efforts to assess their strategies and to draw conclusions for improving these”, a widespread belief persisted that these were “WHO exercises” and the framework for conducting them “no more than WHO questionnaires”. When this matter was again discussed at the 77th session of the Executive Board in 1986, the Director-General expressed doubts about the Programme Committee’s insistence on a more thorough evaluation process within the Organization. It seemed difficult to arrive at a “culture” of evaluation, he said. While some programmes were progressing well, WHO was in danger of “being penalized because it took, in a sense, a more transparent approach than many other national and international organizations”. Nevertheless, he remained convinced there was “no way back and that a culture of evaluation and of respect for relevant, sensitive and consistent information” necessarily had to be a priority for the Organization. Indeed, he was concerned that “not more resources were being used at the national level precisely in order to ensure such accuracy of information”.

To reinforce the country-based approach and ensure the continued relevance of WHO activities in helping Member States implement their health-for-all strategies, the Thirty-eighth World Health Assembly supported regional committees in preparing their programme budget policies. Guidelines specified what needed to be addressed in a regional programme budget policy (7), including: support for national strategies for health for all and ways to promote them; developing a health system through support for national health programmes; and strengthening national capacities to prepare and implement national health-for-all strategies and related programmes. The guidelines also addressed the transfer and use of validated information; research and development for health for all; and optimizing resources for health-for-all strategies and related programmes. They included criteria for deciding on WHO’s international services and direct financial cooperation; intercountry and regional activities; training; the use of supplies, equipment and consultants; and meetings. The guidelines described the programme budgeting process for WHO resources in countries and related mechanisms; defined the role of the regional office in regional programme budget policy, including related staffing policy and budgetary and financial implications; and outlined how the regional policy should be monitored and evaluated. Details of such regional activities are presented in Chapter 4.

Regional programme budget policies were used in 1985 and 1986 to prepare the proposed programme budget for 1988–1989. The proposed programme and budget for 1988–1989 was approved by Fortieth World Health Assembly in May 1987. Monitoring and evaluation – by the HPC in December 1987 – of activities during the biennium 1984–1985 marked the first step in preparing the programme budget for the 1990–1991 biennium.

Towards the end of the decade, the PDWG returned to the matter of improving the readiness of WHO staff (especially WHO representatives) to meet the needs of the Global Strategy for Health for All by the Year 2000. It concluded that less emphasis was needed on “narrow technical specialization and greater emphasis on broad public health and management capabilities” (8). However, there were difficulties in recruiting the best staff for most posts. One reason was the lack of clear career development within the Organization; another was that few institutions

were providing health personnel with the training required to carry out the new functions. Long term, the solution was to develop proper training programmes in schools of medicine, public health and health sciences, but in the short term, in-service training was called for, as well as mobility between posts and functions. After further PDWG discussions on the subject, it was agreed that a “competency profile” of public health generalists (PHGs) was required. Given that most training provided in the various schools of public health continued to be along conventional lines, each regional office should identify “one to three training institutions to whom it could propose that a PHG programme be introduced” (9).

Looking back on these developments in 1987, the Director-General expressed concern about the manner in which “regional arrangements” had evolved. While he did not regret pushing further responsibilities on the regions, he did regret that it might be “leading WHO to consist of six separate regional organizations and one separate headquarters organization”. He pointed to the increased tendency to appoint staff in countries and in regional offices from within the region. This, he said, contradicted “the very spirit of the Constitution”. Furthermore, decentralization, instead of having led Member States to take on responsibility for the work of WHO and become accountable to the Organization as a whole for the use of its collective resources, had too often led them to regard the Organization “as a blank cheque for pocket money” (10).

External coordination for health and social development

The work of the United Nations General Assembly and Economic and Social Council remained central to the deliberations of WHO’s governing bodies. Coordinating WHO policies and programmes with those of other organizations – both within and outside the United Nations system – centred on ensuring that primary health care and the worldwide social objective of health for all were properly introduced into other intergovernmental and interagency forums. Additionally, papers were submitted by WHO to the United Nations on such subjects as the role of women in development; combating apartheid; a programme for disabled persons; health care of the elderly; the International Year of the Child; and assistance to certain developing countries. WHO also took an active part in preparing for the United Nations Conference on Science and Technology for Development, which was held in Vienna in 1979, and in responding to recommendations made at: the United Nations Water Conference (Mar del Plata, Argentina, 1977); the World Conference on Agrarian Reform and Rural Development (Rome, July 1979); the United Nations Conference on the Least Developed Countries (Paris, September 1981); and other major conferences organized by the United Nations and its affiliated organizations during the decade (11,12).

The United Nations General Assembly decided in 1977 (resolution 32/197) that “overall responsibility for, and coordination of, operational activities carried out at the country level should be entrusted to a single official ... who should exercise team leadership and be responsible for evolving, at the country level, a multidisciplinary dimension in sectoral development assistance programmes ...” While it was envisaged that the single individual in charge would normally be the United Nations Development Programme (UNDP) resident representative, and that the UNDP country-programming process should be the “frame of reference for the operational activities carried out and financed by the United Nations system from their own activities”, the dynamic relationship between national development plans and programme support provided by the United Nations systems – as had been pursued by Dr Mahler and

others in the early 1970s – was no longer in evidence (see *The third ten years of the World Health Organization*). As a consequence, the push for interagency coordination that touched on all aspects of social and economic development and which was evident in those earlier years, abated. As a further consequence, coordination on specific programmes with well-defined partners gained in importance, beginning with the United Nations Children's Fund (UNICEF), WHO's partner at Alma-Ata, as evidenced by the work of the UNICEF/WHO Joint Committee on Health Policy. Other aspects of WHO-UNICEF collaboration, in the fields of immunization, nutrition and breast-feeding, for example, are discussed in the sections dealing with those items.

The UNICEF/WHO Joint Committee on Health Policy

The UNICEF/WHO Joint Committee on Health Policy, comprising members of the Executive Boards of both organizations, was established in 1948. At its first session, it decided on the relative roles of the two organizations in UNICEF health projects: UNICEF's role would be to furnish supplies and services, while WHO would study and approve plans for health programmes in which both organizations were involved. By 1967, these projects absorbed about two thirds of UNICEF's operational budget.

New terms of reference for the Joint Committee were established in 1960. Resolution EB25.R30 called for it to review periodically the overall health needs of mothers and children, and to recommend suitable health programmes to the UNICEF Board. It could also consider "any other matters of joint interest" referred to it. This enabled comprehensive studies on a variety of subjects. Furthermore, whereas WHO had previously tended to see the Joint Committee as a vehicle for transferring guidance to UNICEF, the studies in the 1970s were truly joint undertakings. They played a major role in establishing the primary health care approach, as one study led to the historically important publication *Alternative approaches to meeting basic health needs of populations in developing countries*, which was presented to the Joint Committee at its 20th session, in 1975, followed (1975–1977) by a joint study on *Community involvement in primary health care: a study of the process of community motivation and continued participation*, and *The water supply and sanitation components of primary health care programmes for 1977–79*.

The two-day sessions followed the WHO Executive Board January meeting (odd years). At the 1979 session of the Joint Committee, it was recognized that, while WHO and UNICEF stood ready to help countries, many of these countries lacked "health development expertise which would enable the health sector to formulate plans of action with the characteristics desired" (13). Various potential solutions to this problem were proposed: intense training for those who would be involved; establishing regional centres to provide training and technical support; and establishing panels of experts to cooperate with nationals in this process. Infrastructure development was also deemed critical to the long-term prospects for primary health care.

WHO and UNICEF senior staff met over a two-month period to decide on priorities and identify areas in which each organization could play a key role. In the process, it was recognized that the capacity of both organizations needed to be strengthened. Several actions were identified (14):

- assigning or recruiting qualified staff in the organizations for effective support, especially at country level;
- orienting and training existing and new staff to ensure their dynamic and informed support of the PHC approach;

- improving methods to successfully apply the PHC approach in developing countries, especially through country health programming, health services research, and monitoring and evaluating ongoing programmes;
- preparing lists of institutions, experts and consultants experienced in PHC in developing countries, and providing their services to countries as required;
- helping to exchange experience among developing countries.

Much depended on mobilizing external financial resources, which would “not be made available unless improved coordination mechanisms” were established, nationally and internationally.

As noted earlier, the arrival of James Grant as UNICEF executive director in January 1980 led to important changes in the relationship between WHO and UNICEF. While Grant indicated that UNICEF “should give highest priority to advancing progress” towards the goal of health for all, at the same time he focused on UNICEF’s “special capacities”, which included its “relatively superior expertise in certain fields ... developed out of its holistic concern for children and their families, and from its preoccupation with the poor and awareness of the need to generate a greater self-help capacity among the poor and their communities”. UNICEF’s “comparative advantage” in these areas would become “increasingly valuable as other organizations – the World Bank, WHO, the United Nations Educational, Scientific and Cultural Organization (more commonly known by its acronym, UNESCO), the Food and Agriculture Organization of the United Nations (FAO) and bilateral assistance entities – all become more deeply involved in programmes of primary health care, community water supply and basic education” (13).

In his formal opening of the 1981 session, Dr Mahler noted that the Joint Committee was “very well placed to effectively monitor the progress of WHO-UNICEF association in primary health care”. He spoke of the need to coordinate fund-raising, which WHO should pursue mainly to strengthen its own technical resources; UNICEF was best placed to raise funds for country programmes. He stressed the need for UNICEF/WHO cooperation at all levels.

Responding to Dr Mahler’s remarks, Grant recalled his long association with public health development and the outstanding record of synergistic collaboration between UNICEF and WHO. He felt such cooperation should be strengthened in the light of the important reorientation of policy at Alma-Ata and the new International Strategy for Development (see Chapter 1), which recognized social advances as an essential component of development. UNICEF was committed to PHC as the means to achieve health for all, and in particular, to relieve child mortality and suffering. Among its priorities, UNICEF saw the need to strengthen its contribution to important components of PHC, such as expanded immunization, providing essential drugs and controlling diarrhoeal diseases. Breastfeeding and infant feeding, water and sanitation, programmes for women, and PHC in urban areas were also seen as important.

The Joint Committee examined a study carried out by the two organizations on country decision-making to achieve the objectives of primary health care, which had been commissioned in January 1979 as a logical follow-up to the Alma-Ata Conference. Several recommendations were made to improve understanding of the PHC approach and the collaborative efforts of the two organizations in countries. A new study and report was agreed upon, provisionally titled, *Implementation of primary health care*, with emphasis on the most effective support that WHO and UNICEF could give jointly to governments.

Opening the 1983 session of the Joint Committee, Dr Mahler “welcomed the drive and energy which UNICEF was bringing to common policies”, and looked forward to “concrete progress based on mutual understanding and a determination to achieve common objectives

through the fulfilment of constitutional roles". UNICEF's report on the state of the world's children had shown there were "elements of the primary health care strategy that were particularly ripe for the extra push by UNICEF that could bring about the required action at the country level and give significant results".

Grant, in his reply, said that the worldwide economic recession had resulted in a reduction of social programmes, with serious repercussions for mothers and children. The report on the state of the world's children emphasized four cost-effective actions that were deemed potentially crucial components of primary health care given the prevailing economic climate. They were: oral rehydration for treating diarrhoea in children; immunization; breast-feeding; and the use of growth charts by mothers, particularly for nutritional surveillance of their children. Grant said that UNICEF was enjoying success convincing governments and decision-makers of the significant benefits to child health that could flow from these elements of primary health care, especially with family and community participation.

The Joint Committee, while agreeing that certain elements of PHC were "particularly ripe for the extra push", observed that "they should be undertaken as part of the strategies for strengthening the PHC infrastructure, and not as a separate vertical programme – otherwise they could not be sustained". Furthermore, "priorities needed to be identified by countries in relation to their own specific needs" (14). This recommendation led the organizations to develop a joint approach in several countries committed to accelerating PHC implementation. In accordance with the "prospective nature" of the exercise, as emphasized by the Joint Committee, a learning-by-doing process was undertaken in Burma, Democratic Yemen, Ethiopia, Jamaica, Nepal, Nicaragua, Papua New Guinea and Peru.

Concern that vertical programmes would undermine the building of infrastructures needed to support PHC was reflected in Dr Mahler's introductions to consecutive WHO reports. In the 1982–1983 report, he wrote: "It is well known that health priorities can be distorted and infrastructures unbalanced in a way that directly impedes the development of primary health care services when external support leads to the creation of specialised vertical programmes and the emergence of strong pressures for strengthening them at the expense of the harmonious overall development of health infrastructures" (15).

That of 1984–85 was more explicit: "One of the greatest impediments to the proper development of health infrastructures has been their poor capacity to absorb and use evolving health technology and to deliver programmes accordingly. This has given added ammunition to those propagating separate programmes without thought to the consequences for health infrastructure – a tendency that has been all too common in the past two years, in spite of avowed commitment to the Declaration of Alma-Ata. Glaring examples are family planning, immunisation of children, and oral rehydration therapy" (16).

The first review of what was now called UNICEF/WHO Joint Support to the Implementation of Primary Health Care in Selected Countries (JSPHC) was undertaken at the January 1985 session of the Joint Committee. The committee recognized the need to more effectively channel additional resources, both national and external, to four critical areas identified during their discussion: intersectoral/multisectoral action; enhanced community participation; attitudinal/behavioural change; and organizational/managerial processes. It also emphasized the potential for improving children's health through the better use of resources in other sectors. The committee reaffirmed its support for the original objectives of this effort, in particular, ensuring the complementarity of UNICEF/WHO collaboration with countries, while also recognizing

the difficulty in analysing country-specific processes at a global level. Both organizations were encouraged to continue in this effort.

At the last Joint Committee session of this fourth decade that reviewed country-specific reports, in January 1987, the committee had two extensive case-studies before it, one for Indonesia, the other for Democratic Yemen, in addition to conclusions and recommendations prepared by the two secretariats. On the basis of this material, it highlighted the following key requirements:

- firm government leadership in coordinating, establishing and promoting effective health planning processes;
- clear understanding among staff of the mandate and mode of operation of their own and the other agency, its particular strengths, technical and otherwise, and resources;
- mutual respect for each other's professional capacity, both at the representative and project staff levels;
- support from the regional level for coordination, and delegating to the WHO representatives more operational authority to strengthen their support to programmes;
- availability of UNICEF and WHO staff at country level with skills and competence in crucial programme areas;
- frequent meetings and contacts to allow regular exchanges between the two representatives and with national officials;
- good access to, and knowledge of, available technical material and documents.

The committee felt that a common understanding of these requirements “was of critical importance to foster complementarity, particularly in the field”.

Extrabudgetary sources of funds

Introducing the programme budget in 1983, Dr Mahler noted that WHO was “very privileged” to be the only specialized agency in which funds for technical cooperation were, by virtue of its Constitution, natural ingredients of the regular budget. Attracting and allocating extrabudgetary funds had to be part of “any soul-searching” effort when establishing WHO's programme budget, he said, especially as WHO had an “intangible but very real influence on the international flow of funds for health in developing countries through bilateral and multilateral efforts”. WHO would continue to try to increase the direct flow of funds to worthwhile national health strategies, while also seeking funds for its own programmes.

Health Resources Group

To increase resources for the Organization's priority programmes, the Secretariat of the Extrabudgetary Resources Committee organized a series of meetings in November 1978 at which representatives from the contributing community, developing countries and WHO exchanged ideas on the Organization's activities and future plans. As a result of these meetings, the Health/2000 Resources Group was created. Its mandate was to advise on mobilizing and rationalizing bilateral and multilateral resources to meet the Organization's goal of health for all.

The Resources Group met for the first time in December 1980, with representation from developed and developing countries, the United Nations Development Programme (UNDP),

the United Nations Population Fund, UNICEF, the World Bank, and selected NGOs. Major factors in mobilizing resources for health for all were outlined in a background paper that also provided an overview of estimated public- and private-sector health expenditures for selected groups of countries, total net resource receipts of developing countries from all sources, and distribution of donors' official development assistance (ODA) commitments to non-oil developing countries by income group for 1977 (17). The author of the background paper then went on to prepare an exhaustive 649-page account of donor policies and programmes (18).

The renamed Health Resources Group for Primary Health Care decided to review the use of resources in those countries where primary health care could absorb and effectively use external support. At its meeting in December 1981, the Group examined the results of the first country resource utilization (CRU) reviews – in Benin, Ecuador, Gambia, Sri Lanka and Sudan – that were presented by representatives from the ministries of planning and health in those countries. The Group established a Preparatory Committee to continue this review work. At the first meeting of this committee in June 1982, further CRU reviews were examined and recommendations made to strengthen CRU methodology and documentation. On this occasion, the Director-General stressed the importance of the Group considering whether “the North/South discrepancies were being looked at seriously in the social sector ... there was a clear mandate to ensure that the International Development Strategy (see Chapter 1) did not overlook the social aspects”. He said the strength of the CRU review mechanism was as a “policy analysis instrument which opened the eyes of the central planning authorities to what needed to be done in the health sector”. He hoped that with experience, the CRUs would become a “powerful national instrument for implementation and an international means to attract bilateral and multilateral resources for national health strategies”.

At its second meeting in February 1983, the Preparatory Committee discussed progress in the health resources development process and health sector action in UNDP Round-Tables and World Bank Consultative Group meetings resulting from the Substantial New Programme of Action for the Least Developed Countries. It also considered the innovative approaches discussed at a United Nations Conference on Trade and Development (UNCTAD) meeting in October 1982, namely the sector aid approach to funding, and the use of external aid to meet recurrent costs. The UNDP representative stressed that the Round-Table Meetings were a government responsibility and that the role of UNDP and specialized agencies was complementary to national action. The World Bank representative explained that a Consultative Group meeting examined the investment programme and did not focus on a particular sector. For this reason, health could not be expected to be a regular agenda item. UNCTAD believed its sector aid approach should be a means to look at health resources as a whole and transfer resources in a flexible manner with long-term commitments from external partners.

The somewhat surprisingly favourable response among external partners to the suggestion that they should finance at least part of the operating and local costs was also discussed at the October 1982 meeting, where it was decided that resource providers (including UNDP) might need to review their basic policy on local costs. There appeared to be a consensus among the external partners that operational costs to meet essential needs could, at least in part, be met from external resources. Service programmes, such as primary health care, had an extended lifespan and provision for recurrent costs had to be on a sliding scale, subject to periodic reassessment of the country's own capabilities.

The representative of the International Council of Nurses (ICN) told the meeting that since nongovernmental organization activity was not always coordinated at country level, workshops

were being held in selected countries to determine how such NGO health activity could fit in with national plans.

By the end of 1983, 14 developing countries had reviewed their health budgets in light of their national strategies and had estimated their overall needs, the potential resources to meet those needs, and the additional national and external resources that would be required. At this time, however, the number of CRU reviews per year was reduced to enable more follow-up work on those already undertaken. An additional five CRUs were undertaken in 1984.

CRU reviews also informed negotiations with individual donor agencies. As an example, following expanded contacts between WHO and the United States Agency for International Development, the country representatives of both agencies were instructed early in 1985 to encourage cooperation with host governments to help identify health resource requirements and exchange information.

In the second half of the decade, WHO moved to strengthen the capacity of country and regional WHO staff to perform CRU reviews and pursue follow-up action. A workshop towards that end at WHO headquarters in late 1984 also provided an opportunity to define overall programme strategy for the Seventh General Programme of Work for action by the Division of Coordination (COR), and to exchange practical information, experience and views to ensure a more active and effective role for COR programmes at all levels of the Organization. WHO continued to stress that CRU reviews were essentially a national responsibility, but the information gleaned from these reviews “continued to be patchy, irregular and difficult to capture”, making it difficult to demonstrate how successful they had been in mobilizing extrabudgetary resources.

What had started as health-for-all strategies was now proving problematic as administrators tried to marry this approach to both the national managerial process for health development and the measures used by individual donors to determine the nature of their support to countries. As pointed out by the World Bank its objectives were somewhat different from those sought through the CRU reviews. The Bank process started with a report analysing the sector as a whole, followed by proposals for support, their appraisal and supervised implementation. In the Bank’s eyes, the CRU review compressed the first two stages. Weak national managerial processes undermined the ability of countries to use the CRU reviews effectively.

The growing economic crisis and financial constraints imposed on developing countries increased attention on financial and economic issues associated with health for all. The Executive Board and Health Assembly placed this item on their respective agendas in 1986 in preparation for the 1987 technical discussions on economic support for national health-for-all strategies (see Chapter 6).

United Nations Development Programme

At the start of the decade, UNDP was providing support to several major WHO programmes: the Special Programme for Research and Training in Tropical Diseases; the diarrhoeal diseases control programme; the International Drinking Water Supply and Sanitation Decade, with WHO acting as lead agency; and bulk buying and quality control of pharmaceuticals for the South Pacific area. This continued throughout the decade, as did support to various country projects and to the WHO health programme in China. The latter followed the formalization of technical cooperation between WHO and China on 5 October 1978. Under the terms of the agreement, several centres were designated to carry out research as part of a WHO collaborative programme;

Chinese specialists were trained in new techniques by means of study tours, fellowships and research training grants; leading scientists visited China under WHO auspices; and equipment was provided to enable national institutions to improve their health and research activities.

Joint programming of WHO activities under the UNDP regional programme for Asia and the Pacific, involving three WHO regions, was initiated during the 1980–1981 biennium. Similar steps were taken for Africa and Europe. The economic crisis impacted heavily on UNDP funding during this biennium, with pledges for the 1982–1986 programming and planning cycle falling 24% below the target of US\$ 6.7 million. As a result, the UNDP Administrator announced the indicative planning figures would have to be revised downwards, to 55% of the amounts originally established. At the time, UNDP-financed projects amounted to about US\$ 53 million, or 11% of all the extrabudgetary funds at WHO's command.

In 1983, the Organization collaborated with UNDP and the Federal Republic of Germany in a study on human resources development for primary health care. Its main objective was to provide guidelines for international and bilateral agencies looking to advance the worldwide movement towards health for all through effective primary health care. As a result of the study, field officers were reminded of their role in primary health care and encouraged to attract new funds for relevant programmes.

UNDP, the World Bank and the Rockefeller Foundation were the first agencies to collaborate with WHO in its initiative for operational research on safe motherhood to reduce maternal mortality and morbidity, and promote the health of women through action in countries.

In launching its fourth programme cycle (1987–1991), UNDP provided large contributions to global programmes to: strengthen district health systems based on primary health care; develop new vaccines; control diarrhoeal diseases; and advance applied vaccinology. Also through its Bureau for Asia and Pacific, UNDP pledged support to a programme to strengthen primary health care by controlling diarrhoeal diseases and acute respiratory infections, immunizing populations and providing essential drugs.

The World Bank, regional banks and other regional organizations

The World Bank collaborated with WHO on several programmes at the start of the fourth decade, including: the onchocerciasis control programme in the Volta River Basin area (West Africa); providing basic sanitary measures as part of the International Drinking Water Supply and Sanitation Decade; the Special Programme for Research and Training in Tropical Diseases; the Expanded Programme on Immunization; and the diarrhoeal diseases control programme. WHO also collaborated on public health technical cooperation projects financed by the World Bank, helping to lay the groundwork, for example, on a large project in China to upgrade medical colleges and rural health services.

Discussions between WHO and the World Bank took place in October 1985 in Brazzaville on how to provide effective family planning support in Africa. In addition, WHO and other organizations in the United Nations system cooperated with the World Bank to implement its major programme for sustained development in sub-Saharan Africa.

During the 1980–1981 biennium, intensive efforts were made to enhance collaboration with the Arab banks and funds assisting socioeconomic development. Contact was made with: the OPEC Fund for International Development; the Arab Fund for Economic and Social Development; the African Development Bank; the Islamic Development Bank; the Club of Sahel; the Arab Gulf Development Foundation for the United Nations (AGFUND); the Aga

Khan Foundation; the Organization of the Islamic Conference; and the Health Department of the League of Arab States.

WHO entered into more direct relations with the operational arm of the World Bank during the 1986–1987 biennium. World Bank representatives contributed to the technical discussions on economic support for national health-for-all strategies during the Fortieth World Health Assembly in May 1987 (see Chapter 6). The World Bank became a cosponsor and contributing party to the Special Programme of Research, Development and Research Training in Human Reproduction (see Chapter 11).

Other United Nations and related agencies

World Food Programme

The World Food Programme (WFP) marked 20 years of development and emergency operations in 1982. A review of activities showed that more than 170 million people had directly benefited from the WFP. By the end of 1983, there were 298 coordinated development projects focused on the fundamental needs of about 30 million people.

WHO's role in evaluating WFP activities led it to formulate a *Guideline for the measurement of nutritional impact on projects assisted by the World Food Programme and other agencies*. This publication was updated several times during the decade. Guidelines were also prepared to evaluate water supply and sanitation projects. In 1982, for the first time, food aid was among the resources allotted to a vast, multipurpose environmental disease control operation.

As health adviser to WFP, WHO helped enhance the nutritional value of some of the commodities supplied – vitamin A-enriched dried skim milk, for example – as its recommendations were generally accepted by WFP and also by governments providing food aid bilaterally.

To improve the impact of rural development projects funded by WFP commodity grants, WHO worked to develop appropriate technology, such as control circuits for rural water tanks and solar-powered electric water pumps.

WHO advised on development projects being considered for funding by WFP, with a view to minimizing any adverse effects on health, or, in extreme cases, recommending a project be postponed or cancelled. This advice was seen as crucial for large-scale projects, such as dams and irrigation systems, with the potential to have profound ecological and health effects, but for which the economic or prestige value made them quite attractive.

Efforts to link food aid programmes to national primary health care strategies led to the reorientation of WFP-supported health projects – mainly for feeding vulnerable groups – in several countries. Nevertheless, it was acknowledged at the end of the decade that there were frequent failures – at national, bilateral and international levels – in non-health sector projects to incorporate health goals and identify the risks and conditions leading to ill health.

Technical cooperation among developing countries

The concept of technical cooperation among developing countries (TCDC) grew out of the debate on the New International Economic Order (NIEO, see Chapter 1). The Thirty-first World Health Assembly (resolution WHA31.41) underlined its importance for the technological liberation of developing countries, particularly in research, development and training, and in

exchanging experience and information on health care. The Health Assembly called on regional committees, Member States and the Director-General to promote TCDC in the field of health. The Regional Office of the Americas was designated as the focal point for TCDC work.

TCDC was the subject of the technical discussions at the Thirty-second World Health Assembly. The discussions focused on the need for political commitment at the highest level to TCDC in both economically developed and developing countries. It was emphasized that Member States should have in their national plans a clear policy for TCDC, backed by a national health programme; develop a national information system on TCDC; expand health manpower development, particularly in the field of teaching and research; provide information on training needs and potentials; and exploit possibilities for local manufacture and quality control of low-cost essential drugs.

WHO helped formulate and implement TCDC projects throughout the decade. It played an active role in the High Level Committee on Review of Technical Cooperation among Developing Countries. Following the fourth session of this Committee in New York in May 1985, WHO increased its efforts to promote and support TCDC in global, regional and country programmes. The non-aligned and other developing countries adopted a medium-term programme on TCDC for health for all (1984–1989) and an initial plan of action (1984–1985). This plan called for, among other things, a critical mass of health-for-all leaders to be assembled through international and national colloquia.

Nongovernmental organizations

At the end of 1979 there were 123 nongovernmental organizations in official relations with WHO. By the end of the fourth decade this number had risen to 154.

Seventy NGOs attended the Alma-Ata Conference in September 1978 as full participants, not simply observers. In 1979, the Joint Committee on Health Policy proposed that WHO and UNICEF “should encourage national governments to make full use of NGOs in advancing the primary health care approach, bearing in mind the potential of NGOs to initiate novel approaches to such elements of PHC as community involvement and supervision” (19).

The Organization sought a more integrated approach to collaborating with NGOs. Wherever possible, specific activities should be undertaken within an agreed framework. Efforts were made to ensure WHO participated in various international congresses and technical meetings organized by NGOs, and the Organization agreed to sponsor or cosponsor several of these that were of direct interest to its programmes. WHO explored strengthening collaboration at national level in order to: coordinate its activities with national health programmes; work more closely with ministries of health to reorient their activities towards primary health care; and help countries exchange experience via workshops.

Support was given to a few countries whose governments were keen to work alongside national and international NGOs in health by formulating joint programmes in priority areas. One such initiative was the WHO/UNICEF/NGO Collaborative Programme in Southern Africa (Botswana, Lesotho, Malawi, Swaziland, Zambia and Zimbabwe). The Geneva-based NGO Group on PHC, comprising some 30 NGOs most concerned with PHC, took responsibility for representing the NGO community. This group's efforts led to activities specific to each participating country: creating an NGO Assembly in Swaziland; involving NGOs in Zimbabwe's Voluntary Organizations in Community Enterprise (VOICE); and establishing programmes to

strengthen health management skills for district health management teams in Zambia. Similar programmes were launched by other WHO regions in Bolivia, India, Malaysia, the Philippines, Sri Lanka, Thailand and Trinidad and Tobago.

In preparing for the 1985 World Health Assembly Technical Discussions on Collaboration with NGOs in Implementing the Global Strategy for Health for All, one Christian Medical Commission (CMC) staff member noted during a meeting that “it was not the role of the NGOs to be ‘hand-maidens’ to the Government, nor to be there only at their disposal. They should stimulate and provide critical analysis. This can only be done if one has the right to use initiative, like a check and balance system in Government” (20).

The final report portrayed the relationship between NGOs and WHO and government as a true partnership. NGOs were portrayed as being “closer to the people” and able to be “better advocates of real needs than elected governments”. They were “pace-setters, the innovators, the leading edge of development forces at the grass-roots level, which is where it matters ... With their co-operation, primary health care could become a movement of the people instead of being merely an extension service of government.” Reference was made to the WHO/UNICEF/NGO Collaborative Programme in Southern Africa, which had “shown promising results and yielded useful experience”.

The meeting suggested it was time “to conceive and launch a bold new global alliance of NGOs to mobilize and influence the flow and direction of international resources for the implementation of the HFA [health for all] strategies ... A global consortium of NGOs, in close collaboration with WHO, could launch a collective movement ...” (21).

Following the technical discussions, the Thirty-eighth World Health Assembly (resolution WHA38.31) asked national NGOs to commit themselves in practice to implementing the strategies for health for all, and urged international NGOs to foster collaboration between national NGOs and Member States in implementing such strategies. Member States were asked to promote and support partnerships with NGOs by involving them in formulating policy, and in planning, implementing and evaluating national health-for-all strategies.

A review of the guiding principles and procedures governing relations between WHO and NGOs – jointly undertaken with the regional committees in 1985 – led to revised principles being adopted by the Fortieth World Health Assembly (resolution WHA40.25). These principles, which replaced those adopted by the First and Third World Health Assemblies, provided a broader framework to develop partnerships. WHO’s objectives in collaborating with NGOs were to: promote the policies, strategies and programmes derived from the decisions of the Organization’s governing bodies; pursue jointly agreed activities in various WHO programmes to implement these strategies; and help to harmonize intersectoral interests in a country, regional or global setting.

Emergency preparedness and response

Emergencies arose throughout the fourth decade as they did during all of WHO’s earlier history. Each major emergency provoked WHO’s governing bodies to call for health and medical assistance. The traditional response was to provide immediate aid in the form of medical equipment, drugs, vaccines and other supplies.

The first interregional seminar on emergency care in natural disasters was held in 1978 in Manila, in collaboration with the Government of the Philippines, the Office of the United Nations Disaster Relief Coordinator (UNDRO), the International Civil Defence Organization, the

International Hospital Federation, the International Union of Architects and the League of Red Cross Societies. Courses were also held by the Regional Offices for Africa and for the Americas.

The first major WHO course on health management in natural disasters, in October 1980, brought together senior officials from 23 developing countries. In collaboration with the United Nations High Commissioner for Refugees (UNHCR) and the London School of Hygiene and Tropical Medicine, a multidisciplinary seminar on health problems in refugee communities was held in 1980 and 1981, and repeated annually in different regions. Also in collaboration with UNHCR, and the University of London, a manual on health in refugee camps was prepared after being tested in the field.

The recognition that some emergency situations, such as the continuing drought in parts of Africa, called for long-term solutions to prepare countries to deal with such disasters, led the Thirty-fourth World Health Assembly (resolution WHA34.26) in 1981 to ask the Director-General to “strengthen [WHO’s] capacity and increase its resources ... with a view to promoting the development of approaches to the prevention of adverse health effects of disasters, when possible, and the preparedness of Member States to deal with disasters, to participate in the coordination of aid”.

Improving national capacity, both to take preventive measures and to remain in control of emergency situations, led WHO to: develop technical cooperation activities in support of public health management of emergencies; research the epidemiology of disasters; study populations at risk; assess needs and priorities in the event of mass casualties; and examine patterns of disease and disease control following disasters. Fellowships were used to train staff from disaster-prone countries in disaster management so that ministries of health might possess key personnel capable of dealing with emergencies.

A medium-term global programme for emergency and disaster preparedness, financed by extrabudgetary resources, started operating during the 1982–1983 biennium. As part of this programme, regional courses and other training facilities were strengthened, and the study of disaster situations intensified. Under WHO’s impetus, several universities established undergraduate and postgraduate programmes on health management in disasters. This resulted in better-trained personnel becoming available for field work in emergencies.

The critical economic situation in most of Africa, aggravated by drought and famine, led the World Health Assembly in May 1985 to urge the Director-General and the Regional Director, in cooperation with the affected African Member States, to respond to the health consequences of the crisis as an integral part of the regional and global strategies for health for all, and to intensify WHO technical cooperation at country level to help Member States enhance their disaster preparedness. In response, the Regional Office for Africa formulated a plan of action; several programmes on emergency preparedness and relief operations were developed; and the Organization assigned staff to Ethiopia and Sudan to help coordinate emergency health activities with the governments and the Special Representative of the Secretary-General of the United Nations. Personnel were also provided for missions to review the health emergency in Ethiopia and Sudan and to assess priority health needs in four west African countries.

In November 1985, WHO began to implement its emergency preparedness training programme in the African Region. This was done in conjunction with two of its collaborating centres: for research on the epidemiology of disasters and emergencies in the Catholic University of Louvain; and for the health of refugees and other displaced communities at the London School of Hygiene and Tropical Medicine.

The various organizations with which WHO collaborated and coordinated activities were brought together at an interregional meeting in Geneva in April 1987 to plan future action. Representatives from all of the leading international organizations involved in emergency activities attended. The purpose of the meeting was to clarify WHO's role within the international community in emergency preparedness and response, and to reinforce coordination within WHO. The meeting emphasized the managerial and organizational aspects of preparedness and response to emergencies and called for WHO and other organizations to improve institutional measures for emergency preparedness. The need to improve the quality of information and its communication within WHO and among the organizations and agencies, and between them and national authorities, to more effectively prepare for, respond to and mitigate disasters, was stressed. The need for training in all aspects of emergency preparedness and response, and for local authorities and communities to participate, were also emphasized. There was a consensus that emergency preparedness and measures taken by the health sector in response to emergencies should be an integral and indispensable component of the development process (22).

Constitutional and legal matters

The number of Member States grew from 150 in 1978 to 166 by 1987, with one Associate Member. Amendments to Articles 24 and 25 of the Constitution, providing for a further increase in the membership of the Executive Board, were adopted in 1984, raising the number from 30 to 31; a further increase to 32 was in motion by the end of the decade.

The Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources was signed on 17 May 1980 in Athens by 12 Mediterranean coastal states and by the European Economic Community, and published in the *International Digest of Health Legislation* (23). The protocol drew on studies and first drafts prepared in 1976 and 1977 by WHO at the request of UNEP.

On 20 May 1980, the Thirty-third World Health Assembly, when considering proposals from Egypt to remove the Organization's Regional Office for the Eastern Mediterranean from Alexandria, requested an advisory opinion of the International Court of Justice on whether the negotiation and notice provisions of the agreement concluded with Egypt on 25 March 1951 were still applicable in the event of such transfer. The Court advised on how such a transfer should be managed, if it were to take place. On 18 May 1981, the Thirty-fourth World Health Assembly accepted the advisory opinion and asked the Director-General to initiate action and report to the January 1982 session of the Executive Board. The Board asked the Director-General and the Government of Egypt to continue their consultations; the Thirty-fifth World Health Assembly requested a comprehensive study on the matter, and this study was presented to the Thirty-sixth World Health Assembly in May 1983. The matter came to an end when Egypt withdrew its request.

The Thirty-sixth World Health Assembly confirmed the decision taken on a trial basis in 1981 to limit the duration of the Health Assembly to two weeks in even-numbered years, when there was no proposed programme budget to consider, and in odd-number years to as near to two weeks as was required for the efficient and effective conduct of business.

In May 1982, the Thirty-fifth World Health Assembly adopted resolution WHA35.14 defining WHO's policy on patents, following a recommendation by the Executive Board at its 69th session. The Health Assembly decided that it should be WHO policy to obtain patents, inventors'

certificates or interests in patents on patentable health technology developed through projects supported by WHO, where such rights and interests were necessary to ensure development of the new technology; and that the Organization should use its patent rights, and any associated financial or other benefits, to develop, produce and make widely available health technology in the public interest.

The progress report to the 71st session of the Executive Board elicited several questions on the use of profits resulting from any patents held by WHO. The Director-General noted that “many of the patents were associated with the Special Programme of Research, Development and Research Training in Human Reproduction, and many of those who had invested heavily in that Programme would no doubt feel that it was still underfunded in the light of its potential, and that any profits from these patents should be fed back into that Programme. That could not be done, however, without the consent of the Board.”

The progress report to the 77th session of the Executive Board in January 1986 said that implementing resolution WHA35.14 was “being increasingly linked with the growing collaboration between WHO and industry, as partners in promoting the development and wide availability of health technology” (24). One change reported was the revised WHO standard Technical Services Agreement. Previously, who would retain patent rights was written into the agreement; now, if research resulted in an invention, the “parties are placed under an obligation to negotiate an agreement covering the exercise of the intellectual property rights granted to the research institution”.

Staff development and training

The work in staff development and training was carried out in close collaboration with all the Organization's other programmes. Briefing and training needs were jointly defined and acted on. Following an evaluation in 1982, staff training and related activities in support of WHO's strategies for health for all went through a stage of intensive development. Programmes were established to brief and orient staff on policies and strategies, both at headquarters and in the regional offices. Joint workshops on implementing strategies and plans of action for national health development were also used to update WHO staff members on policy changes.

By 1985, a series of advanced briefing seminars for professional staff, mostly long-serving, on organizational policies and strategies was completed. All briefings were conducted in-house by senior staff members. By this time, each region had its own staff development programme with specific funding.

Skill-oriented training concentrated on two priority areas: information processing and information transfer. In the former, the emphasis was on computer introduction, microcomputing and office automation; and in the latter, effective communication, including presentation techniques, managing meetings and media relations. Refresher training and training in administrative and technical priority areas, and languages, were also emphasized at both regional and headquarters level. Briefing and training materials included a booklet for all new staff throughout the Organization (*Working for WHO*); a brochure on staff training available through headquarters; and guidelines on organizing meetings and preparing and using simple visual aids.

As part of the effort to assemble a critical mass of health-for-all leaders, a programme for WHO programme coordinators was developed, emphasizing advocacy for health for all and implementing national strategies. A series of interregional seminars and skill-development

workshops enabled WHO programme coordinators to further enhance their role in building national health-for-all leadership and contributing to technical meetings and country programme reviews. WHO programme coordinators increasingly used their meetings in the regions as opportunities to expand their knowledge.

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Regional developments and trends

The regional nature of WHO stems from the existence of two regional bodies at the time of WHO's founding: the Maritime Sanitary and Quarantine Board of Egypt; and the Pan American Sanitary Bureau. As stipulated by the WHO Constitution, responsibility for defining and establishing regional organizations rests with the Health Assembly. While the distribution of countries to regions has been rather stable throughout WHO's history, this decade was marked by Israel's move from the Eastern Mediterranean Region to that of Europe in 1985. This permitted the Regional Committee for the Eastern Mediterranean to meet in full for the first time since 1950.

The regional committees formulate policies on matters of an exclusively regional character. They also initiate technical conferences and other activities that promote the Organization's objectives in the regions, and cooperate with the regional committees of the United Nations and other specialized agencies and international organizations with common interests.

The decentralization policy adopted during the fourth decade called for the regional offices and committees to have a bigger, more active role. As spelt out by the Director-General in his introductory statement to the 1986–1987 programme budget, the regional offices had “to become centres for responding to carefully thought-out national needs for attaining health for all by ensuring a coherent spectrum of support activities for developing strategies, implementing them or part of them, and ensuring that technical content, administrative procedures and financial transactions are properly interrelated”. The regional committees, he said, “must fulfil much more actively the role of monitoring vested in them by the Health Assembly”.

The increased involvement of the governing bodies in the work of the Organization led to their efforts being harmonized with the policies developed by the Executive Board and the World Health Assembly. As a consequence, there was a similar pattern in the work of each of the regions; at the same time, however, important differences emerged, reflecting the diversity of problems, constraints and opportunities that countries faced.

This chapter does not cover all the activities of each region. Attention is focused on broader developments towards health for all and related developments in health systems and human health resources. Given that similar activities occurred in all regions, not all are described. Rather, based on documentation from the time, primarily the biannual reports of the Organization and the reports of the regional directors to meetings of the regional and global governing bodies, a different blend is presented for each region.

African Region

The African Region has suffered disproportionately each time the world has been hit by an economic crisis, as was the case during all of this decade. Worldwide inflation and the monetary crisis contributed to impoverishing most countries of the region, whose meagre currency reserves were eaten away by the rise in the price of manufactured goods. In 1986 alone, Africa's

earnings from exports fell to US\$ 19 billion, with the net transfer of resources from Africa amounting to billions of dollars. As well, some countries were still living through periods of civil war, which perpetuated their dire poverty. These factors provoked “feelings of alarm and despondency ... Faith in an international community characterized by cooperation and mutual dependence [was] crumbling fast” (1).

The persistence of apartheid in South Africa caused material and human damage. Funds that neighbouring countries might have used to provide services to their own communities were lost to preserve their economic, political and strategic independence. Unconditional support for the national liberation movements, recognized by the OAU as a way of promoting health development throughout Africa, was a constant feature of the African Region’s Standing Committee on Technical Cooperation among Developing Countries.

Technical discussions at the 28th session of the Regional Committee in 1978, on social policy and health development in Africa, concluded that a realistic health policy required a “revolutionary approach”. Member States were urged to establish multisectoral coordinating mechanisms, such as national health councils or committees; ensure continuity in the work of their policy organs; and apply the decisions intended to promote health at every social level. The recommendations of the Alma-Ata Conference were endorsed by the Member States of the Region.

The Charter for the Health Development of the African Region was one of the decade’s significant events in the Region. The Charter affirmed the commitment of Member States in areas they jointly considered important for health development. The objectives of the Charter included: improving primary health care, manpower development and training; providing safer water and sanitation, and promoting maternal and child health; and controlling communicable diseases.

Seminars and workshops were held to popularize primary health care. A regional workshop in Botswana in December 1978 reviewed the recommendations of the Alma-Ata Conference; nine countries participated in a workshop in Yaoundé in June 1979 to prepare a practical guide for students of health sciences; a multidisciplinary workshop was held in Kintampo, Ghana, in July 1978, based on the experience of the Brong-Ahafo rural integrated development programme (BARIDEP) (2); and a seminar on development, community participation and training was held in Dakar in July 1979.

The African Advisory Committee on Medical Development was established in 1976 to strengthen research capacity in the African Region. Following a review of the regional strategy for health for all, specific objectives were taken from national strategies and classified into three groups: development of comprehensive health services; health science and technology; and promotion and support (see Chapter 9). Objectives for 1990 were set for immunization, water supply and sanitation, and the fight against hunger and malnutrition. The regional development strategy had two main components: training health personnel, with emphasis on country health programming; and technical cooperation at country level to implement country health programming.

It was estimated an additional US\$ 2.5 billion per year was required to implement the regional strategy for Africa, a sum that included US\$ 2 billion for drinking-water and sanitation, US\$ 25 million for the Expanded Programme on Immunization, and US\$ 25 million for malaria control. Recognizing that external funding was essential, the African Health/2000 Resources Group was established in 1981, comprising representatives of Member countries, intergovernmental, governmental and nongovernmental organizations, and bodies within the United Nations system. Its terms of reference included advising on how to secure extrabudgetary support, mobilizing resources for health development, and promoting information exchange on health needs and resources.

The Regional Committee for Africa, in adopting the regional strategy, invited Member States to formulate national plans of action emphasizing primary health care, and to put their strategies into effect with the support of WHO, OAU and other organizations and institutions. It sought mechanisms to evaluate the progress of the work every two years, and the effectiveness of the work every six years.

Promoting managerial processes for national health development was seen as an indispensable precondition for implementing the strategy for health for all. In 1979, the Institute of Public Health, based in Cotonou, Benin, became the first of three subregional centres for health development. The other regional health development centres were established in Harare, for English-speaking countries, and in Maputo, for Portuguese-speaking countries. As a first step in developing national plans of action for health for all, training workshops that stressed identifying priority issues, problems and solutions were conducted in 13 countries. The centre in Benin began its work by providing training for a multidisciplinary group of development workers from French-speaking countries of the African, Eastern Mediterranean and Western Pacific Regions.

Ministers of health and economic planning from Benin, Mali, Mauritania and Senegal attended an interministerial conference on planning and managing health services held in Dakar in 1980. In the same year, the Region's first consultation on developing health management training was held in Arusha in the United Republic of Tanzania. Following the recommendations of an interregional consultation, an African network of health management training and development programmes was established in 1981. This network was open to all national institutions.

With the help of the United States Agency for International Development, courses were run at the WHO training centres in Lagos and Lomé to train instructors in primary health care. A the United Nations Development Programme-financed project was prepared, with technical cooperation from the German Democratic Republic, for an international course on public health in the United Republic of Tanzania, with an emphasis on primary health care. By 1983, these had become part of a network of national training centres that were the focus of 32 country and 13 intercountry projects. These projects stressed training health workers in communities or first-line health centres, and aimed to produce competent managers and develop teaching methodology.

In 1983, the Regional Committee noted the difficulties its Member States were experiencing in monitoring progress, and attributed these mainly to the multilateral nature of the data to be collected and the inadequate training that personnel received in using such data. Countries were invited to strengthen technical cooperation with the Regional Office and more effectively use WHO programme coordinators. WHO was asked to help strengthen national mechanisms to use at least the 12 global indicators agreed upon by the Health Assembly as part of the Global Strategy.

WHO called for joint practical training for national and WHO staff in health management and health services research, especially in monitoring and evaluating strategies, prompting several seminars and workshops. WHO programme coordinators and representatives were invited to discuss with the national authorities relevant themes contained in both the document on the managerial framework for optimal use of WHO's resources to support Member States, and also in the first report of the Regional Director on strategy evaluation.

At the 1985 session of the Regional Committee, Member States decided to reorient their health activities by: adjusting their strategies and formulating or reformulating their national action plans; improving information support and integrated planning for health manpower development; improving coordination within and between sectors; and mobilizing and making rational use of available resources. To facilitate these developments, the programme budget policy in Africa was increasingly based on detailed joint government/WHO planning. The

economic challenges still facing the African Region were outlined by Dr Gottlieb Monekosso, who had taken over from Dr Alfred Quenum as Regional Director the previous year. These challenges were: inflation; increasing indebtedness; a rise in the prices of essential commodities; a fall in the prices of local products for export, entailing a considerable loss of potential revenue; and management problems in health services and infrastructure. Two years later, he depicted health development in the African Region as being “on a knife-edge of an unparalleled development crisis”.

A review of the work of the Advisory Committee on Health Development in 1986 led to it becoming the umbrella committee for the various regional advisory committees that had been functioning independently of one another; its role was to coordinate their work and promote specific health policies. Of the 18 members of this committee, six were representatives of three regional working groups on the major determinants of community health (water, population and education); six represented three regional networks of institutions (for research promotion, leadership development and resource management); and six were experts with special responsibility for orienting the work of the committee towards health policy development.

The need for a unified managerial process led to intercountry programmes on health planning and on national health information systems being merged into a single programme. The subregional health development offices were positioned to help Member States create national health development centres with the dual objective of training instructors in the managerial process for national health development, and providing technical and operational support to the countries in health planning and evaluating their national health-for-all strategies.

With the merging of public information and education for health (see Chapter 8), activities in these two areas were pursued in all countries of the Region. Depending on the country, they consisted of: education sessions in health and social services, training officers to help develop these activities; retraining social services and health personnel; organizing local health development committees; producing educational material; raising public awareness of priority health problems through radio broadcasts; and seminars to alert local authorities to the importance of primary health care. Following a recommendation from a group of communication experts that a primary health care module be included in training curricula for journalists, WHO collaborated with the Teaching Centre for Information Sciences and Techniques at Dakar and with other similar establishments in the African Region (in Kenya and Nigeria) to train a new generation of journalists competent in social and health matters.

The new structure in the African Region – the Regional Office activities had been decentralized, with three subregional health development health offices established and the WHO programme coordinators’ offices strengthened – was the focus of the Regional Committee’s 1985 session. Matters considered included: the level of responsibility of the subregional health development office director vis-à-vis the WHO programme coordinator/representative in the host country of that office; the cost of establishing the subregional offices; the operating mechanisms of the offices; criteria for selecting the host country; and locating regional health development centres. Using national staff as WHO programme coordinators produced positive and negative results, including managerial difficulties for the Regional Office, a Committee review revealed. The Committee invited the Regional Director “to phase out the experiment gradually”.

A review of the working environment of the WHO Programme Coordinator offices led to several changes. Steps were taken to ensure that each office had a qualified administrative assistant who was linked to the Organization and accountable for its resources. Arrangements were made to provide information communication officers for primary health care, who would be

nationals linked to the Organization. Such officers were deployed in several countries to work in other fields, such as nutrition, and monitoring and evaluation. Staff scattered in different countries, often singly or in pairs, were grouped into effective teams in the three subregional offices.

A programme operations coordination system (AFROPOC) was introduced in 1986 to rationalize the process of managing WHO resources and ensure their optimal use in countries. Professional staff were grouped into three intercountry health development teams at subregional offices in Bamako, Bujumbura and Harare, emphasizing the support for primary health care. A scenario for the African Region for 1987–1990 was developed to hasten progress towards health for all, strengthen national capacities, reinforce technical cooperation among countries, and ensure the optimal use of WHO resources. The roles and functions of the African Advisory Committee for Health Development and various other committees were reviewed and revised to ease coordination efforts and help formulate specific and explicit policies.

The decade ended with the Region's advocacy for health development receiving support at the highest political level when the Assembly of Heads of State and Government of the OAU, in July 1987, adopted a declaration on health as a foundation for development. The declaration invited Member States to: define or redefine politico-administrative units, with local government responsibilities of such districts for socioeconomic development, including health development; encourage local initiatives to mobilize additional human, material and financial resources for both health and development in the communities; use local, social and political mass organizations to encourage communities to promote their own health and development; encourage district managers to help communities plan operations, provide supervisory support, collect information, and prepare appropriate reports; and ensure continuing support for the districts from both the intermediate and the central level, especially in monitoring progress, evaluating activities for health and development on target communities, and conducting field research to resolve operational problems.

Universities were asked to help governments in combined health and development activities, which were designed to reduce the burden of disease and accelerate economic growth, while maintaining community health at an acceptable level. Recognizing that such an undertaking called for coordinated international support from multilateral, bilateral and nongovernmental agencies, each Member State was instructed by WHO to establish an appropriate mechanism to coordinate all health and development activities aimed at districts.

Region of the Americas

The extension of health services coverage by way of primary health care was seen as the “spearhead” in the regional effort to attain health for all. The few valid indicators of the extent to which coverage had increased during the previous decade showed that while about half of the countries had made substantial gains, the organization of the health sector and the development of human resources had not kept pace with the growth of facilities. The growth in public spending on health care had slowed and in some countries had lagged behind the general economic growth.

The governments of the Americas agreed that new social and economic approaches were needed, especially in light of the serious demographic situation, increased urbanization, the availability of foodstuffs and nutrients to the population, and the complex relationship between the factors affecting the human environment. In 1980, Member governments reaffirmed or revised their national health-for-all strategies, and the regional strategies based on them were

adopted by the Pan American Health Organization's (PAHO's) Directing Council at its XXVII Meeting (the 32nd session of the Regional Committee) in September. One year later the regional plan of action was approved by the Directing Council at its XXVIII Meeting.

The following regional objectives were set: to reorganize and expand health systems to make them more efficient, equitable, and effective; pursue intersectoral links; and promote and improve regional and interregional cooperation. The need for innovative solutions to health problems was stressed, inasmuch as the essential determinants of health, poverty for example, were largely outside the health sector's traditional sphere of action. The urgent need to revise traditional practices and methods so that health services were accessible to whole populations, especially groups at greatest risk, was also emphasized, as was the need for promotion and prevention programmes in combination with programmes for health restoration and rehabilitation, and in close coordination with improvements to the physical and social environment.

The aims of the regional plan were to satisfy the health needs of the entire population, especially those groups that development had bypassed. Priority was given to rural and marginal urban groups, and within them, to special population groups, namely women, children, workers, the elderly and the disabled. According to the plan, it was essential to restructure the health sector to incorporate social security systems, refocus financial mechanisms and encourage the community to take action to improve its health.

The Regional Committee for the Americas (the Directing Council for PAHO), in reviewing the previous Ten-Year (1971–1980) Plan for the Americas, agreed that primary health care and its components still constituted the basic strategies to: extend health services coverage and environmental improvement; promote community organization and participation; improve intersectoral links; and develop research and technology, and human resources. It then adopted a plan of action to implement the regional strategy.

A new strategy for human resources and research was devised. It called for comprehensive manpower development programmes at subregional and country levels to cover all manpower needs in the health field. The strategy covered planning, training and the use of personnel, and took account of plans to extend health coverage to underserved populations. Subregional and country programmes included education and training for allied health personnel in the Caribbean; strategic training for health workers in Brazil; and training in community health for Central America and Panama.

To supplement the 49 regular courses in health-care administration, a new phase of the PAHO/WHO programme in health administration was initiated with the support of the W.K. Kellogg Foundation. Courses covering economics and finance, organizational methods, and health assessment and planning were offered by the Regional Library of Medicine and Health Sciences (BIREME), which in 1982 became the Latin American and Caribbean Center for Health Sciences Information; the Latin American Center for Educational Technology in Health; the Case Western Reserve University (USA); and the London School of Hygiene and Tropical Medicine. Two further important initiatives were an advanced programme in health administration training for the Central American countries, and an international course on planning for the development of health services systems at the School of Public Health, Universidad Nacional Autónoma de México, Mexico City.

During 1982, nine workshops were held to help implement the national and regional strategies. About 280 participants, comprising senior officials from the ministries of health, education, agriculture and planning, prepared a common framework for national workshops to reformulate

national strategies and review their implementation. The technical discussions on managerial analysis of health systems, held during the 1982 session of the Regional Committee, stressed the importance of strategic management, health systems research, training, and technical cooperation.

One further consequence of the Regional Plan of Action was the reorganization of the Secretariat's administrative structure in 1983 to develop new methods of cooperation with countries in the Region. Intermediate administrative levels were eliminated and technical activities organized in accordance with the programme classification in WHO's Seventh General Programme of Work and the Regional Plan of Action. The process for preparing the regional budget was revised also, leading to a 29% increase in the 1984–1985 resources directly allocated to the country level. Making these changes was not always easy owing to “the inertia and resistance to change of the established bureaucracy ... and the number of vested interests in the Organization, the rigidity of behaviour of individuals and the rigidity of established practices ...”, according to Dr Carlyle Guerra de Macedo in his observations to the 73rd session of the Executive Board in January 1984. The Brazilian had been elected Regional Director in 1982 by the XXI Pan American Sanitary Conference, succeeding Dr Héctor Acuña.

A review of the primary health care strategy in Latin America revealed that PHC was regarded by too many people as a programme oriented towards the simple problems of marginal population groups, and its potential to change health systems as a whole had not been exploited. The review prompted increased efforts to maximize this potential.

The Regional Committee for the Americas advocated establishing national systems for financing health strategies and reorienting international cooperation. A mechanism was established not only to identify needs and possible sources of external funds for countries, but also to help countries draft suitable proposals for programmes with a high likelihood of receiving finance.

A regional meeting of epidemiologists, health administrators and planners in Buenos Aires in 1983, on the prospects for epidemiology practices, concluded that countries still needed encouragement to assess the population's health status, its determinants and trends. The meeting also concluded that national capabilities to evaluate health service systems and health promotion and disease prevention programmes required urgent attention. As a result, in 1986 PAHO established a new programme, called health situation and trend assessment, that promoted epidemiology as an instrument in the planning and technical administrative management of services, and as an essential element for understanding the factors that influence changes in the health profiles of populations, changes that would, in turn, influence the allocation of resources for health and decisions on health policies and programmes. As observed by the Regional Director, “epidemiology can go beyond considering just specific health problems; it can help bring us closer to considering society as the source for explaining health problems and their solutions” (3).

The lack of criteria for introducing technology, especially high-cost technology, continued to cause concern within WHO. The health sector was judged to be adopting and using technology incompatible with the aims and goals spelled out by governments. This incompatibility was seen as fundamental to the waste of resources and having negative repercussions on health delivery services, the attitudes of staff and patients, and institutional structure and functions; even more serious, it produced misguided sectoral policies. One approach to increase efficiency was to integrate resources with each component of the health sector. As a consequence of this efficiency drive, linking the ministries of health and the social security institutions was analysed during the 1984–1985 biennium in the 16 countries of the region in which they shared

responsibilities for providing health services. The study showed a trend towards: delineating the areas of responsibility for the sector's components; spelling out financing policies, including the role of the private sector; and determining the extent of real coverage in providing services.

The Organization worked with the Latin American and Caribbean Institute for Economic and Social Planning (ILPES) as part of efforts to link the health sector with other sectors. The work aimed to develop the conceptual, technical and methodological foundations to introduce a health dimension in planning global development and its linkages with the decision-making mechanisms of the Latin American and Caribbean countries. Water and sanitation, food and nutrition, and essential drugs were areas in which such links were pursued.

To mobilize external technical and financial resources for the health sector, the Organization moved to strengthen formal and informal links with: the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), the United Nations Development Programme, the United Nations Population Fund, the United Nations Children's Fund (UNICEF), the World Bank and other agencies of the United Nations; the inter-American system, particularly the Inter-American Development Bank (IDB) and the Organization of American States (OAS); and other donor agencies. The aim was to initiate joint programmes that were consistent with national and regional health priorities. Such formal agreements included a memorandum of understanding with UNICEF covering joint cooperation with governments to strengthen the operational capacity of health services, and in certain specific fields, such as malaria, respiratory infections, essential drugs, maternal and childcare, nutrition, and environmental health, and research.

Civil wars in El Salvador, Guatemala and Nicaragua during the late 1970s and the 1980s resulted in thousands of injuries and deaths. The conflicts also had a devastating effect on living conditions and health-care services in these countries and affected all of Central America. In 1983, governments in the subregion began working with PAHO and UNICEF to address the crisis. The Regional Director, Dr Macedo, named the initiative Health as a Bridge for Peace, its goal, to create solidarity between nations by preserving the public health infrastructure and sharing resources for health. In the first phase, clinics and hospitals were rebuilt, new health-care workers trained and essential medicines and food distributed. Projects were also launched to control malaria and dengue fever, and to improve drinking-water quality and supply.

In areas affected by war, more children were dying from preventable illnesses than from injuries caused by the conflict. PAHO health experts debated the best way to solve the problem. These discussions bore fruit when PAHO on 14 May 1985 announced an ambitious campaign to eradicate polio from the Americas (see Chapter 15). A hallmark of this campaign and Health as a Bridge for Peace was the Days of Tranquillity initiative, in which humanitarian ceasefires were called every year during the height of conflict and tens of thousands of health workers, volunteers and even guerrilla soldiers vaccinated children against polio, diphtheria, whooping cough, tetanus and measles. The success in El Salvador, in particular, carried a powerful message of the value of cooperation in health, and helped improve relations between Central American countries and foster the subregional peace process. Health as a Bridge for Peace and Days of Tranquillity have since been officially adopted by WHO as part of its work in politically troubled areas.

Just as the Central American governments, with support from the international community, had formulated a unique, on-the-ground subregional plan to address priority health and development needs, the English-speaking Caribbean countries developed the Caribbean Cooperation in Health initiative, while the Andean and Southern Cone countries in South America crafted similar, well-focused joint plans of action.

In September 1986, the XXII Pan American Sanitary Conference approved an orientation and programme priorities document to guide the Organization's efforts during the 1987–1990 quadrennium. The Organization's ability to plan programme activities and allocate resources was enhanced by a revision to the AMRO Programming and Evaluation System (AMPES), leading to programming and budgeting phases being merged into a single operation.

South-East Asia Region

The Regional Committee unanimously adopted the Charter for Health Development in 1978. The Charter provided a regional mechanism for mobilizing internal and external resources for health development and a focus for intercountry consultation and collaboration in the spirit of TCDC.

A meeting in New Delhi in December 1978 reviewed the recommendations of the Alma-Ata Conference in the context of regional and national requirements. Four of the 10 countries in the region – Bangladesh, Burma, India, and Thailand – had formulated countrywide programmes and were beginning to implement them. Other countries were either at the planning stage or experimenting with models to fit their political and socioeconomic situation. Nearly all countries had started programmes for training community health workers. It was stressed that traditional medicine, widely used throughout the Region, should be a part of primary health care, while sectors other than health were drafted to help promote and prepare for a PHC system.

A UNICEF/WHO meeting on formulating strategies to attain health for all, held in New Delhi in December 1979, reviewed national health policies and long-term plans with a view to defining specific areas in which WHO would collaborate over the next two decades and the assistance it should give in formulating strategies. Regional and national strategies for attaining health for all were formulated after intensive consultation, and were endorsed by the Regional Committee at its 34th session in 1981. A regional plan of action was adopted by the Regional Committee a year later. This included a plan to support the managerial process, based on national medium-term programmes developed in 1979 and updated in 1980 and 1981.

High-level national councils or committees responsible for implementing these health-for-all strategies were established in almost all countries of the Region. In Thailand, for example, the National Economic and Social Development Board established a macrosocial development subcommittee, with task forces for health, education and culture, and social welfare and security. Political commitment to health development was reinforced at the first meeting of the Region's ministers of health, held in Jakarta in September 1981, when the ministers affirmed they were committed to action at the executive, technical and political level.

In 1982, the Regional Committee noted with satisfaction the progress reported by Member States in implementing national strategies, including establishing high-level health councils and committees for coordinated implementation of the strategies and the specific objectives and targets included in countrywide health programmes. Although there was increasing evidence of intersectoral coordination within countries, the Regional Committee felt that the national plans of action to implement the strategies with internal and international support needed to be vigorously pursued.

In 1983, the Regional Committee discussed the various problems that countries had identified when reviewing their health systems (4,5). These included a shortage of manpower and material resources, and political and professional resistance. Efforts were made to overcome the resistance through personal contacts, seminars and workshops. The Regional Committee also

noted that health planning and country health programming often proceeded with insufficient emphasis on the managerial skills. As a result, programmes designed for rapid expansion of primary health care service delivery encountered many difficulties in everyday administration, supply and logistics, supervision, and support and referral systems.

In response to these problems, countries were helped to review, reorient and redesign national health planning processes by applying the managerial process for health development. The Organization also collaborated with most of the countries in the region to develop methods and mechanisms for multisectoral planning and management; coordinate activities with other sectors, NGOs, universities and communities; and evaluate national health plans and programmes. Management training, based on a learning-by-doing approach, was developed for intermediate-level staff in Burma, India, Indonesia, Mongolia, Nepal, Sri Lanka and Thailand, while seminars, in-service training and other activities for various levels of personnel were organized in almost all countries of the region to help build a critical mass of health-for-all leaders.

There were several innovative attempts to improve the coordination and use of health resources at the country level for implementing health-for-all strategies. In Thailand, there was a programme budgeting exercise to develop a process and monitoring mechanism to enable national authorities to more flexibly use WHO resources for health development within the country ceiling and according to national priorities. In Indonesia, a collaborative programme was initiated to determine how all available resources might best be used, with WHO performing a “catalytic and coordinating” role. In Mongolia, with the help of multiagency funding, there was an experiment to develop a model of primary health care services, incorporating training and research, in an *aimak* tribe.

Action was taken in Burma and Nepal to coordinate, in consultation with government, WHO and UNICEF inputs in order to strengthen the impact of their support in developing primary health care activities. This led to an action programme on nutrition in both countries in 1983.

Country resource utilization (CRU) reviews were conducted to assess resource needs. The Regional Committee, during its 1984–1985 session, urged Member States to mobilize all possible resources and the Regional Director to coordinate and support these efforts by helping to formulate proposals, and assess the costs and methods of financing health care programmes. Guidelines for submitting proposals for extrabudgetary funding were updated and a directory profiling donors was prepared.

The adoption of the Seventh General Programme of Work led to the Regional Office being reorganized. Country focal points were established at the Regional Office, and the role of the WHO programme coordinators strengthened. Multidisciplinary teams were set up at the Regional Office to provide coordinated technical support to national health development.

The joint government/WHO evaluations of a priority health programme chosen by each Member State were completed by the end of 1986. Country support teams were established for each Member State to ensure coordinated support and timely response to priority needs for technical cooperation, and to contribute to developing and implementing the biennial programme budgets. A regional consultative meeting examined how WHO resources were being managed and suggestions were made for action at country and regional levels.

As reported to the seventy-ninth Executive Board session in January 1987 by Dr U Ko Ko, the Regional Director, the Sixth Meeting of Health Ministers, held in Chiang Mai in September 1986, had agreed that the “moral value system implicit in the health-for-all/primary health care concept could be used to inspire leaders at all levels [and] help other social and economic aspects of development”.

European Region

The reorientation of the Region's programme towards attaining health for all began early in the decade. Although there was a widespread sentiment among European countries that primary health care was for the developing world and not for them, the 28th session of the Regional Committee, held in 1978, asked the Regional Director to integrate the recommendation of the Alma-Ata Conference into the European Region programme. A year later, the Member States were asked to collaborate to execute programmes related to PHC. Earlier, the publication *Primary Health Care in Europe* had described the main problems in the region and proposed new strategies to solve them (6). The slow acceptance of primary health care in industrialized countries was attributed to "its poor definition and a lack of analysis of its implications for industrialized countries" (7).

One element of the strategy was prevention, another, improving health-care systems. The former covered a wide spectrum, from genetic counselling and immunization through to food control and providing adequate drinking-water and sanitation, and reducing accidents, including road traffic accidents, and their consequences. Improving health-care systems required major changes in professional practice and in organizing and financing health care in many countries.

Other elements of the strategy included promoting healthy lifestyles and minimizing the detrimental effects on health of poverty and unemployment. Healthy lifestyles were seen as an individual and a community responsibility, requiring efforts in education and public information, changes in social and economic conditions, and regulatory controls to ensure food safety and halt illegal imports. Programmes were initiated in health promotion, alcohol abuse, and drug abuse and smoking, while many lifestyle issues were introduced to existing programmes, such as health education, chronic diseases and workers' health. Staffing patterns were changed to give a broader expertise in such areas as sociology and political science, complementing existing expertise in medicine, engineering, economics and law.

A Regional Health Development Advisory Council, comprising members of the Consultative Group on Programme Development and experts in political science, economics and sociology, proposed a comprehensive long-term strategy for the Region. In 1980, the Regional Committee endorsed the proposed strategy, with minor changes. It agreed that the main programmes should include: promoting lifestyles conducive to health; reducing preventable conditions; and reorienting health-care systems to cover whole populations with the maximum level of health care possible given the stage of development in a country. The need to reduce poverty was also stressed, as was the significance of the New International Economic Order to this end.

Two international workshops on country health programming and related managerial processes were held in the United Kingdom in 1980 and 1981. The venues were the Usher Institute in Edinburgh and the Nuffield Centre for Health Services Studies at the University of Leeds. Country health programming was introduced into workshops held in Amsterdam in 1980 and Antwerp in 1981 for participants from developing countries. A regional workshop in Vienna in 1981 on controlling health-care costs in social security systems stressed the need to coordinate primary health care and strengthen health-care measures both within and outside the health sector. Another workshop in Munich in 1981, on the cost-effectiveness of standard patterns of long-term health care, focused on the quality of that care.

The WHO Regional Office for Europe collaborated with the ministries of health of Finland and the Netherlands to develop a "scenario-building" approach to formulating national strategies for health for all. This involved deciding the steps to be taken in formulating major

programmes, taking into account the requirements of multisectoral collaboration, alternative strategies to achieve health for all, and anticipated results. The integrated managerial process was initiated in Morocco, Portugal and Turkey, where activities related to planning, programming, implementing, monitoring and evaluating health programmes took place.

Developing regional targets, the building blocks for the achievement of health for all by the year 2000, required the increased involvement of nonmedical professionals, such as economists, social and political scientists and consumer group representatives. This effort took two years of intensive analysis, culminating in September 1984 when the Regional Committee adopted 38 regional health-for-all targets and a preliminary list of essential and optional indicators. These targets covered four areas of health improvement: reducing existing health inequities among countries and between groups within countries; adding life to years by improving people's opportunities to develop and use their health potential; adding health to life by increasing the average number of years free from major disease and disability; and adding years to life by reducing premature mortality from certain diseases and accidents. Targets were also set for factors influencing lifestyles and health, improving environmental health and the functioning of health services, and strengthening national health policy formulation and manpower development.

Having leading health officials from Member States work with the Regional Committee and its many preparatory groups, and providing technical advice and training for key planners and decision-makers in countries were other important aspects of the regional strategy. A particularly important event to the latter effort was the second European Conference on Health Planning and Management, held in the Netherlands in 1984. The Conference agreed that health planning should be seen to include not only the highly structured, traditional planning systems, but also the less structured blend of economic and other incentives that could be used to influence health developments. This approach to planning would pave the way "for all those countries in central Europe that had been sitting on the sidelines on account of their weaker mandates in health planning", Dr Jo E Asvall told the 77th session of the Executive Board in January 1986. Dr Asvall had taken over as Regional Director from Dr Leo Kaprio, who had retired at the end of January 1985. In this context, the WHO Regional Office for Europe sponsored the development of a microcomputer-based graphic display system for indicators, which was made freely available for countries to use. It was hoped these microcomputers would be the key to monitoring national efforts to promote health for all and enable Member States to share information and experiences.

Two thirds of Member States of the European Region were analysing their national health development using regional targets collectively adopted by the Regional Committee in 1984. Medium-term government/WHO collaborative programmes were developed in 23 Member States. In evaluating the delivery of country and intercountry programmes, the focus was on how the programmes were helping Member States progress towards health for all; in the process, it became apparent there were difficulties reporting on such indicators as morbidity and mortality, social service support, and those relating to lifestyles.

By the end of 1987, seven Member States had reviewed their national health policies and reoriented them to achieving health for all; seven others were at different stages of the review process. Other Member States were preparing for such reorientation, or developing health-for-all policies at subnational or local level. Among the intergovernmental organizations in Europe, the Nordic Council, by establishing explicit and extensive links to the regional health-for-all policy in its new social development plan, was the first to give it official endorsement.

When the Director-General in 1987 indicated that evaluating the strategy for health for all had revealed the “unexpected extent to which developed countries” were benefiting from the strategy, he was referring mostly to what had been achieved in the European Region. There, the more affluent countries were beginning to use the strategy to define health targets and contain the costs of their medical services. These countries were able to use existing infrastructures more effectively, especially by applying the information generated by WHO.

On behalf of WHO, the Association for Medical Education in Europe made a study into medical school admission procedures in the region and ways of introducing medical students to the different approaches to primary health and community care. The different curricula for training in health management at schools of public health in the region were also studied with a view of standardizing such training. These studies informed the decision of three associations, working for health manpower development in Europe, to join WHO in its efforts to influence post-graduate education.

Dr Mahler’s judgement that the health-for-all policy was “still far from influencing the day-to-day work of universities and medical schools in Europe in a decisive way” led to further innovations, including the first network of six European universities to introduce health for all into their institutions. The Association of Schools of Public Health in the European Region adopted the regional health-for-all policy as the basis for its own work, and developed educational modules for each of the targets, to be used in all schools of public health in the Region. The Association of Medical Deans in Europe and the Association for Medical Education in Europe collaborated with WHO to analyse the implications of the policy for medical students. They agreed to initiate joint projects, with a view to introducing the regional strategy to the basic medical curriculum. Links with European national medical associations were established, which led to the Regional Office being asked to become a clearing-house for them and their expressing a willingness to cooperate in the Organization’s programmes, starting with the new European campaign against tobacco.

Eastern Mediterranean Region

The decade began with an evaluation of primary health care programmes operating in the Islamic Republic of Iran, Iraq, Libyan Arab Jamahiriya, Pakistan, Sudan and Yemen, and continued collaboration with countries embarking on such programmes: Democratic Yemen, Oman and Somalia. A multidisciplinary regional advisory panel on primary health care was established; it met for the first time in Alexandria in December 1978.

Three subregional meetings were held in 1980, in Damascus, Mogadishu, and Kuwait, to help formulate regional strategies for health for all. The diverse demographic, social, economic and political conditions in the countries of the region required the regional strategy to be broad and flexible. It was seen as a framework for international cooperation and national efforts to meet people’s basic health needs and carry out priority programmes corresponding to the eight main components of primary health care.

A document to help national authorities introduce or strengthen the managerial process for national health development was issued in 1981, while a programme of intercountry and national workshops on that process was launched during the 1982–1983 biennium. In support of this development, the regional programmes of epidemiological surveillance and health

situation and trend assessment were operationally associated. Promoting the managerial process in countries was a twofold process: first, consultative missions worked with the ministries of health to review their policies and strategies for health for all, and to identify the elements necessary to implement national strategies; and second, training activities were organized for national and WHO staff to support the process. Particular effort was made to help local institutions offer regular training programmes in the managerial process. To this end, country-specific materials in Arabic were prepared.

Technical discussions on intersectoral collaboration in health development were held at the 30th session of the Regional Committee in 1983. The proposition that health for all could be achieved only through the active collaboration of many sectors of society was “beyond empirical verification” but “intuitively appealing”, according to a report of the discussions. The background paper prepared for the discussions presented reasons to support the proposition, along with suggestions for overcoming barriers at the international level within WHO and at the country level.

In his opening address to the Regional Committee in 1983, Dr Hussein Gezairy, who had succeeded Dr Abdul Hossein Taba as Regional Director the previous year, said that WHO had realized external financial support was “crucial for some countries to develop their health systems and services”. Three countries had already completed a CRU review (see Chapter 3), and three more would do so in the coming biennium. These reviews would form the basis for the international transfer of resources for the strategies of health for all in favour of the least developed countries. The Regional Director underlined the importance of the Substantial New Programmes of Action that were endorsed by the United Nations Conference for Least Developed Countries, where health, education and nutrition were identified as priority areas.

An intercountry workshop on the managerial process for national health development was held in Riyadh in April 1984. Each of the six participating countries – Bahrain, Kuwait, Oman, Saudi Arabia, United Arab Emirates and Yemen Arab Republic – had prepared country statements, which included: a situation analysis of their country, with particular reference to the development of health services, their organization and structure, and the planning mechanism they had adopted, before identifying the main management and planning problems being encountered; recommended solutions; and a detailed proposal for a training programme in health management and planning to be conducted by nationals for different levels of health personnel.

The workshop exercises used for other intercountry workshops were revised to suit the local conditions of the participating countries. These exercises dealt with various aspects of the managerial process: policy-making and priority setting; planning details, including the information base needed for planning and programming; the role of community organizations and consumer opinion in health planning; the difference between goals, objectives and targets; the importance of detailed programming, particularly at the peripheral level; the costing and funding of planning; and programme evaluation.

The importance of evaluation was recognized in October 1985 by the 32nd session of the Regional Committee, which called for an intercountry meeting of senior national decision-makers for health planning to formulate a plan of action to use the results of country and regional evaluation.

Despite these efforts, by 1985 WHO judged only 10 countries in the region to have made progress towards achieving health for all. In some countries, vertical programmes were still the rule, with primary health care activities competing as separate technical programmes. A joint policy statement by the Regional Office and UNICEF emphasized the need for coordinated efforts in the Region, particularly in the expanded programme on immunization. The

importance of coordination between international agencies was further emphasized by the Regional Committee, which urged Member States to play a coordinating role at national level.

National community-based activities in the pursuit of health for all were to be given priority use of WHO resources. To strengthen the dialogue between WHO and Member States, and to ensure the optimal use of WHO resources in meeting the needs of priority programmes, senior officials from the health and related sectors were invited to visit the Regional Office during 1986 so that they and WHO staff could review collaborative programmes and determine reprogramming needs.

During 1987, joint government/WHO programme review missions in all Member States of the region examined progress in implementing health-for-all strategies, reprogrammed collaborative activities for the remainder of the biennium, and detailed the approved programme budget for 1988–1989. In some Member States, the missions were preceded by a primary health care review or a programme audit. In 1987, the use of the regional programme budget policy was evaluated for the first time, in Somalia. As part of the review process, delegations of senior officials from the different Member States visited the Regional Office to learn how WHO functioned and to determine reprogramming requirements.

The main tool used for reprogramming was the regional programme budget policy, which was approved by the Regional Committee at its 1986 session. It included criteria for determining Regional Office involvement in national health programmes, and set out in simple terms the policy basis and main thrusts of national strategies for health for all. In large countries, developing district health systems was supported as a way to extend primary health care to the entire country.

From the start of the decade, the need to focus the regional programme on primary health care had resulted in certain activities being emphasized, including manpower planning and management. The Ministerial Consultation on Health Services and Manpower Development in Teheran in 1978 was dedicated to matching education and training to the needs of the health services. This meeting brought together for the first time ministers of health and ministers of education from the Member States of the Region. A plan of action for the functionally integrated development of health services and health manpower resulted. The plan outlined general principles, and measures to be taken by national authorities and WHO (8). Guidelines were soon prepared for regional use in manpower planning and management.

Both in nursing and in medicine, increasing discontent with traditional approaches and imported models were addressed. Regional collaboration in traditional medical education declined, and shifted to a few selected faculties and departments within faculties, orienting them towards the community's defined health needs and introducing a problem-based approach to learning.

Technical discussions on continuing education for health personnel after they had completed basic or specialist training were held in 1983 at the 30th session of the Regional Committee. Various study aids were discussed: texts, libraries, printing facilities, newsletters, refresher courses, local meetings, audiovisual aids, distance learning, and management and supervision. A national system of continuing education was seen as "an essential feature of the provision of high quality health care" because health personnel, who were trained and employed at considerable cost, needed to "maintain their efficiency and effectiveness, and resources devoted to this can be expected to contribute in an important degree to better health care".

The main purpose of regional activity in health manpower development was to help produce enough workers to satisfy the needs of the national health services. The Regional Office

maintained a steady flow of information and dialogue to make training and development for medical and other health personnel more relevant. Using national languages in training was stressed, and health manpower planning and management emphasized. Guidelines on formulating job descriptions were prepared, which some countries then produced for their health workers. Support was provided for the Network of Community-oriented Educational Institutions for Health Sciences, including advice on curricula. National workshops to promote and initiate systems of continuing education were held in several countries.

An intercountry clearing-house was established at the Regional Office to help countries share learning materials. The main objectives were to prompt countries to review their requirements for such materials and to assist in local production and distribution.

Despite these efforts, by 1985 most countries in the region had not realigned their health manpower policies and plans towards implementing the health-for-all strategy, although a few had made efforts in that direction. Reorienting health personnel training by involving training institutions in community health work continued to be emphasized. This was done to ensure their training, research and service activities were relevant to the goal of health for all through primary health care. To help Member States develop manpower plans, training modules were devised for courses for health personnel; typical curricula, oriented towards primary health care, could be modified to suit local requirements; and sample job descriptions for various categories of health workers were produced, with the capacity for Member States to adapt them to suit their own national requirements. During the 1986–1987 biennium, Health-for-all leadership training was initiated. In 1987, senior officials from various sectors in Democratic Yemen, the Islamic Republic of Iran, Pakistan and Somalia took part in a regional colloquium in Thailand, where they had the opportunity to see practical examples of community participation and to discuss constraints to implementing their own national health-for-all strategies.

Western Pacific Region

Primary health care was promoted at a series of conferences and workshops at the start of the decade. Following eight national seminars and the regional conference in Manila in 1977, an intercountry workshop on primary health care was held in Malaysia and the Republic of Korea in November and December 1978, resulting in research and development projects in both countries. In the South Pacific, a conference on primary health care was held in Suva in August 1979, and a national seminar took place in Kiribati in November 1979. The nursing component of primary health care and the role of allied health personnel were emphasized. A national workshop on these subjects was held in the Republic of Korea. The use of health teams in rural work was the subject of an interregional workshop, which included field trips, in Tacloban, the Philippines, in October 1979.

In 1980, the Regional Committee unanimously adopted a regional strategy for health for all. The strategy called for three basic courses of action: laying the foundation for health by providing adequate food, water and shelter; developing individual and community self-reliance in health; and providing appropriate and affordable health technology for the sick, disabled, chronically ill and socially maladjusted. The strategy focused on primary health care as one of the principal approaches.

The region looked to country health programming as the means by which countries would prepare long-term plans. Training in country health programming and management, and research in that field were initiated to meet manpower needs. The Regional Office promoted national centres for health development in China, Fiji (for the South Pacific), Malaysia, Papua New Guinea, the Philippines and the Republic of Korea to ensure technical cooperation among countries in applying the managerial process for national health development. Countries were encouraged to establish national health development networks that would provide a framework for TCDC activities. An intercountry meeting on developing coordinating mechanisms for the network was held in Manila in December 1983.

Countries used the managerial process for national health development to update their policies and strategies for primary health care and achieving health for all. The process was used, for example, to prepare five-year plans in the Cook Islands, Fiji, Papua New Guinea, Samoa, the Solomon Islands and Tonga. In Malaysia, preparing the five-year plan was facilitated by a national workshop for senior health administrators. In China in 1981, 50 senior public health administrators from throughout the country attended a course on management in national health development. This was followed in October 1982 by an interregional workshop on information support to primary health care.

In 1982, a seminar on financing health development in the Western Pacific Region was held in Manila to enable participants to exchange information and ideas on health finance data. As a result of this exchange, data needs were identified, along with mechanisms to increase the capacity to generate such information. The seminar also attempted to describe in general terms some of the future action required of WHO and Member States. WHO was seen to have a facilitating and coordinating role, while responsibility for some initiatives was believed to rest with Member States. WHO was willing to support, assist and advise countries, and to provide technical support, information, training and expertise. Opportunities to exchange information were important, and a permanent mechanism to enable countries to work together and exchange experience and expertise would need to be considered; national health development networks had a role to play in this regard (9).

Multidisciplinary teams supported Malaysia, Papua New Guinea and the Republic of Korea in formulating national strategies and plans of action for health for all. In the Republic of Korea, a collaboration with the Institute of Planning and Health led that country to review its approach to developing primary health care systems for urban and rural areas. A resource allocation framework and a plan of action were prepared jointly by WHO with the Ministry of Health and Social Affairs; studies were initiated to help develop national health insurance and primary health care programmes.

In the area of health services, efforts were concentrated on developing a system based on PHC and community involvement. Using appropriate technology to prevent, diagnose and manage disease, and to rehabilitate the disabled, was emphasized, and the region took the lead in increasing its support for traditional medicine, including medicinal plants and acupuncture. The Regional Committee stressed acupuncture should be considered on its own merits, not as a contingency provision.

Medium-term programmes were continuously reviewed to ensure they responded rapidly to changes in countries' situations and needs, and the consequent changes in their national health strategies. The biennial programme budget, drafted in consultation with countries, concentrated on activities most relevant to health-for-all strategies. Collaborative programmes

with countries were further improved as a result of work done on key topics. This work was achieved by the more active participation of Member States through the Regional Committee and through its subcommittees on the WHO General Programme of Work and on Technical Cooperation among Developing Countries.

The evaluation of national health-for-all strategies revealed that while the Region's countries and areas had accepted the principles embodied in those strategies, they were still in the early stages of introducing the changes and innovations required to put those principles into practice. National aggregates could no longer be used as a basis for analysing country information. A more detailed breakdown of information, into geographical regions and specific categories of population, was required to determine whether countries or areas were achieving health for all their people. More effective ways were sought to monitor trends in priority health problems. Introducing modern technology for information processing was one such measure.

Following a consultation in October 1978, the Regional Office developed a set of guidelines emphasizing the health manpower planning process, the entry-points for such planning, and the relationship of the process to country health programming. Studies were carried out on different aspects of manpower planning; a long-term global study on alternative methods for projecting manpower requirements was carried out in the Philippines and Vanuatu, for example.

With more Member States in the region taking a fresh look at their health manpower requirements in the light of their national strategies for health for all, the Regional Office placed increased emphasis on: manpower planning; strengthening the capacity of countries to produce health manpower; continuing education; and applying educational theory and techniques to training programmes. In several countries, however, health manpower studies were limited to certain categories required by the primary health care approach; community-oriented nursing staff and environmental health personnel, for example. Strong support and encouragement were given to planning, training and using middle-level practitioners.

There was a continuing emphasis also on reorienting training institutions in community health work to ensure their training, research and service activities were relevant to the goal of health for all through primary health care. With this in mind, the Tenth Interregional Meeting of the Directors of Representatives of Schools and Departments of Public Health, held in Manila in 1983, further defined the schools' and departments' roles in helping to implement national strategies for health for all, as did the Fifth Regional Meeting of the Deans of Medical Schools, also held in Manila in 1983. It was recommended that the schools and departments of public health develop skills in health planning and evaluating health programmes to enable them to cooperate with health ministries. The importance of providing health management training to all personnel involved in providing health care was stressed. All training programmes should be based on active participation by teachers and students at the field level to provide valuable problem-solving experience. Teaching staff should be involved in consultation and research. Member institutions of the Association of Schools of Public Health were encouraged to collaborate at regional level to develop a network of public health training institutes.

While similar recommendations had regularly been made for such medical schools, little progress had been made since the deans had last met in 1979. This being the case, the fifth meeting focused on fewer subjects, addressing them in greater depth: medical schools and health for all; the medical faculty and the community; the role of medical schools in promoting health research for national health development; and the relationship of medical schools to health policy development, to health services management and to health services delivery (10).

A landmark conference, titled ‘Towards future health and medical manpower: new strategies in education for the XXIst century’, was held in Tokyo in April 1985. The Declaration of Tokyo on Health and Medical Manpower for the Twenty-first Century and a set of recommendations issued at this conference were endorsed by the 36th session of the Regional Committee in 1985. A period of intensive activity at regional level followed, the aim being to forge a better understanding of integrated health systems and manpower development and also to foster better coordination among educators, health service managers and manpower planners.

An international conference on leadership in nursing for health for all, cosponsored by the Government of Japan, the Japan International Cooperation Agency, the International Nursing Foundation of Japan and WHO, was held in Tokyo in April 1986. Twenty-five senior nursing personnel and health administrators from 20 countries examined the role of nurses as leaders and made recommendations to strengthen that role. Modules were developed for use in national workshops. This conference was followed by others in the African Region and the Region of the Americas, with the International Council of Nurses participating in both.

WHO’s mid-decade evaluation of national health-for-all strategies revealed that, while the principles embodied in the strategies were accepted, the changes or innovations needed were still in their early stages and would have to be continuously fostered right up to the year 2000. In light of the many impediments to progress, WHO called for action-oriented studies, as well as increased WHO support for training in health systems research and in the better management of national health research programmes. All parties concerned increasingly recognized the need for legislative support for changes introduced or planned for the health system.

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Part 2

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Health system infrastructure

Health system development

Health situation and trend assessment

Article 2 of the WHO Constitution, on obtaining health-related information, lists the following functions for WHO:

- to establish and maintain such administrative and technical services as may be required, including epidemiological and statistical services;
- to provide information, counsel and assistance in the field of health;
- to establish and revise as necessary international nomenclatures of diseases, of causes of death and of public health practices.

Articles 63 and 64 state that each Member State shall communicate promptly to the Organization important laws, regulations, official records and statistics pertaining to health published in the State concerned. Each Member is also responsible for providing statistical and epidemiological reports in a manner determined by the Health Assembly.

Following discussions on monitoring and evaluating the Global Strategy for Health for All, the World Health Assembly, in 1982, requested WHO “to support the Member States in their endeavours to ... develop or improve mechanisms for monitoring and evaluating their strategies for health for all, collecting relevant information and using it to assess their health systems, analysing the health situation and trends and thus providing a sound basis for epidemiological surveillance and for decision making for health development” (resolution WHA36.35).

In response to this request, the Director-General decided to reorient, strengthen and broaden the scope of the traditional programmes of vital and health statistics and epidemiological surveillance. Conforming to the Seventh General Programme of Work, and to the study of the Organization’s structures in the light of its functions (see Chapter 2), a new health situation and trend assessment programme was established. Its mandate was to provide the technical arm and information support to implement and evaluate national, regional and global health-for-all strategies.

The programme’s aims were fourfold: to strengthen information support to national health management; provide training support; develop methodology and standard tools; and monitor and evaluate strategies for health for all.

The Director-General, in his address to the first meeting of the Health Situation and Trend Assessment Team, spoke of the need for honesty in presenting and using information, and for accountability in using resources at all levels, both within countries and within WHO. Information was “the most important issue” WHO had to tackle in the coming years, because “if we have the requisite information, and it is right, it can be used to effect change” (1). Information should not be accepted from countries uncritically: “WHO was created to be the conscience of the Member States, and so must strive to obtain relevant, sensitive and timely information – honest information.”

Strengthening information support to national health management

For this task to be performed well, the health situation and trend assessment programme needed to collaborate with all of the infrastructure and technical programmes, in particular, those responsible for managerial processes for national health development (MPNHD). More importantly, the programme needed to operate at the national, regional and global levels with all stages of health services development, from policy-making to programme monitoring and evaluation, without forgetting the importance of basic vital and health statistics.

WHO cooperated with many countries in developing or reorienting information support. Consultants or staff were assigned to 46 countries to help improve their information support capability. Collaboration took different forms. In Indonesia, for example, WHO helped prepare a manual on information support to the managerial process for national health development; in the Western Pacific Region, two epidemiologists were appointed to strengthen country surveillance, and microcomputers were provided in eight countries to improve health data processing; and in several countries in the African Region, special methodologies for estimating health status for small areas were tested.

The approaches and methods for providing information support, developed in the first half of the decade, were tested intensively in 10 selected countries of the Americas, South-East Asia and the Western Pacific Regions. This evaluation took the form of workshops to review information needs, field reviews of information requirements for particular functions and activities, and experiments to optimize the flow of information. Guiding principles on information support to programming were developed for pilot application in countries. These principles were applied to the hypothetical ANYLANDA, “a low income developing country” (2). This modelling described the process to identify the information needed, where it was likely to be found, and how it was to be collected, analysed and finally presented to the technical planning group and to the political policy-makers.

A workshop was held in May 1987 in India, one of the countries performing intensive testing of the approaches and methods for providing information support (3). The discussions concentrated on how monitoring and evaluation at district, state and central levels could be streamlined. Workshop participants concluded that: reporting requirements should be simplified; monitoring and feedback needed to be incorporated at all levels, supported by intensive training on the nature of the information to be collected and ways of using it; and indicators relevant to monitoring and evaluation at different levels needed to be identified. A revised plan of action for developing information support for health-for-all strategy management in India was drafted.

Although some health systems experienced a shortage of relevant, valid and high-quality information, the experience of the second half of the decade showed that many countries had the information, but made little use of it for managing health systems. Three major factors were believed to be contributing to this (4):

- The managerial processes consisted more of automatic, programmed actions than of active responses to changes in the health needs of the population or the operation of the services. Health planners did not use information on health status or health services because too often the planning process consisted of little more than following fixed rules on expenditure of money. Similarly, managers at the operational levels of health services had no need for

monitoring or evaluation when they had no authority or power to take action in response to the information.

- Even where there had been significant changes in the structure of health services to permit more decision-making in response to observed needs, particularly at service levels closer to the community, too often the managers and workers at these levels had not been prepared suitably for these responsibilities. They had insufficient understanding of the basic use of information and epidemiological method in identifying problems, planning for their resolution and monitoring of the activities that they had implemented.
- The poor communications that often prevailed between the ministry of health and other ministries and sectors with responsibilities for health-related topics restricted the availability of information needed for intersectoral activities, led to duplication of efforts to obtain information, and impeded progress towards effective coordination for primary health care.

Training

The training component of the health situation and trend assessment programme aimed to provide all categories of personnel with the knowledge and skills to collect, compile, analyse and use the information needed to plan, implement, monitor and evaluate health programmes. Three levels of health staff were recognized: senior, intermediate and peripheral. Following a review by the Health Situation and Trend Assessment Team of the main functions and needs of each level of staff, ongoing regional activities were reviewed.

All regions supported institutionalized, long-term training for epidemiologists and statisticians, with the aim to produce full-time specialized staff. Much of this training was provided through bilateral aid programmes. In Europe, international training courses were held regularly in the French, English, German and Russian languages. An interregional course on epidemiology and controlling communicable diseases was held in France, with field work in the Côte d'Ivoire, Mauritania, Tunisia, Upper Volta and Kenya. Two English-speaking courses were held, each attended by participants from countries of the African Region. Academic courses in epidemiology were held in 12 countries in the Eastern Mediterranean and Western Pacific Regions. International workshops for training teachers in epidemiology were organized in English and French.

At workshops and meetings of epidemiology teachers, it was emphasized that the teaching should be more relevant to national health problems and programmes, and that the training methodology be shifted from classroom lectures to exercises in real situations.

One interesting approach to the long-term training of epidemiologists was the Epidemic Intelligence Service (EIS) scheme established in Thailand in 1980, with the support of WHO and the United States Centers for Disease Control and Prevention (CDC) in Atlanta. The scheme aimed to combine applying epidemiological techniques in actual field situations with in-service training; four to five students graduated each year. A similar programme began in Indonesia in 1982. These programmes were pioneering examples of national learning-by-doing courses, which lasted two years and produced valuable results for their countries' health services. The Thai students were able to count the course as credit towards a formal qualification in epidemiology.

WHO-supported workshops, seminars and courses on epidemiology, surveillance, health statistics, health and medical records, and the International Classification of Diseases were held in many countries, and several teaching manuals and aids were published. Fellowships were awarded for advanced training in these areas. Guidelines were drafted for those instructing

primary health care workers in how to collect, analyse and use health-related information. The WHO collaborating centre at the Central Bureau of Health Intelligence in New Delhi prepared and field-tested a manual for training the trainers of primary health care workers in how to collect and use health information. The Global Epidemic Intelligence Service Program at the CDC – a newly designated WHO collaborating centre – helped WHO prepare a manual on how to select and use sets of the minimum data required for programme management, with emphasis on the needs of districts. Other developments included the launch in the African Region in 1986 of a programme in applied epidemiology, and a WHO/Economic Commission for Africa/UNICEF training workshop for statisticians and health managers held in Kadoma, Zimbabwe, in November 1986. AFRO also developed towards the end of the decade a mid-level course designed not to create full time epidemiologists and statisticians in every district but to inculcate “epidemiological thinking” into those responsible for integrated health care at the local level (5).

Developing methodology and standard tools

The key tools for the health situation and trend assessment team were health surveys, the International Classification of Diseases and related classification schemes, including lay reporting. WHO collaborating centres, of which 13 were related to health situation and trend assessment, played an important role in developing tools and publishing classifications and training material.

The United Nations National Household Survey Capability Programme (NHSCP) surveys were recognized as a useful means to obtain information on certain health indicators and on health-related information needed for health management. Nevertheless, there was a sense within the health situation and trend assessment team that many countries did not understand that population-based data was essential for effective planning. Improved coordination was required between those in the United Nations responsible for NHSCP surveys and ministries of health to allow the latter to incorporate additional questions related to health.

Experts in health statistics, epidemiology and public health administration attended an international conference on health statistics for the year 2000, jointly sponsored by the Rockefeller Foundation and WHO, in Bellagio, Italy, in September 1982. The conference report included a summary of the concepts, conclusions and principal recommendations unanimously accepted by the participants. These included:

- the Tenth Revision of International Classification of Diseases should be a major conceptual and technical revision and should constitute the keystone in a set of related classifications of health problems as the individual moves through the health care system;
- Member States should be encouraged to carry out household health surveys after careful planning that ensures the availability of relevant, accurate and timely information;
- the measurement of mental health problems should be included in health surveys now that suitable instruments were available;
- WHO should establish a permanent clearing-house to exchange information about health and health-related surveys;
- further research into the means of acquiring person-based data should be encouraged.

The Ninth Revision of the International Classification of Diseases came into effect on 1 January 1979. One of the amendments to previous versions addressed the question of how to secure morbidity and mortality statistics in countries that lacked sufficiently qualified personnel. By this time, there was “a strong demand for a statistical tool which could overcome constraints in many of the developing countries, especially for recording and analysing health information by non-medical i.e. lay personnel” (6). The Health Assembly in 1978 (resolution WHA29.35) had endorsed developing countries. A booklet on lay reporting was published and tested in several countries (7).

Lay reporting mechanisms and classifications were adopted by several countries. Research projects in this area were reviewed by the regional advisory committees on medical research; the advisory committee in the Western Pacific, for example, was presented with a paper on a community health information system developed in Indonesia (8). Addis Ababa was designated as the location for a WHO collaboration centre on health records to advance this work in the African Region. Workshops were organized in French-speaking African countries. An inter-regional meeting in Malaysia in November 1982 reviewed work being carried out in countries where English was used.

An interregional meeting in Manila in October 1985 discussed the role of lay reporting in obtaining information relevant to health-for-all strategies. In view of the increasing emphasis on community involvement in developing health systems based on primary health care, activities were initiated to identify, define and test the indicators relevant for monitoring and evaluating such involvement.

Work on the Tenth Revision of the International Classification of Diseases was postponed, partly because of the constraints imposed by decentralizing WHO's resources, and partly because of the considerable costs Member States would incur in changing the classification, especially as the International Classification of Diseases had become a statistical tool widely used in hospitals, social security and epidemiological studies, as well as in coding medical certificates of death. A postponement of about five years was decided upon.

The first Expert Committee on the Tenth Revision of the International Classification of Diseases, which met in San Francisco in June 1984, endorsed the proposed change from a numeric coding system to an alphanumeric system. The second Expert Committee, which met in Geneva in November 1987, reviewed proposed changes; their recommendations were incorporated into a final text submitted to the Forty-second World Health Assembly in 1989 for approval.

A workshop was held in Zimbabwe in 1986 to provide material and guidelines for training programmes or for direct use in national household survey programmes. Another objective of this workshop was to consolidate experiences in a systematic framework in the form of guidelines. Drawing on the outcome of this meeting, and with financial support from UNICEF and the Commission of the European Communities, and technical support from the United Nations Economic Commission for Africa, the United Nations Statistical Office and the Centers for Disease Control and Prevention, training modules were prepared for household surveys on health and nutrition (9).

There was progress in developing methods to measure the cost-effectiveness of health actions, although further development was needed to cover situations involving a multitude of associated factors; determining the beneficial health effects from improved water supply and sanitation, for example. The need to extend the applications of the risk approach, focusing action on high-risk groups, to be able to deal with a wider range of health problems, also was recognized.

Towards the end of the decade, WHO and the International Epidemiological Association (IEA) prepared a publication on health promotion and protection measurement (10). The sixth and final volume of a popular IEA series on community health survey methodology – in English, French and Portuguese – was also completed (11).

Monitoring and evaluating strategies to attain health for all

Early in the decade, WHO developed a conceptual framework for information support in monitoring progress towards health for all. Preparatory work was done in collaboration with national experts, with a view to establishing indicators suitable for regional and global monitoring. Regional groups considered using indicators for regional monitoring. Technical cooperation with Member States to strengthen their health information systems and services was reoriented in the light of the new developments, as discussed above.

The *World Health Statistics Quarterly*, which in the preceding decade was used to disseminate raw statistical data on morbidity and mortality, was expanded in scope to become more relevant to the information needs of Member States in pursuing their health-for-all strategies. It developed into a periodical, carrying reports on statistical analysis and epidemiological and statistical methodology in themed issues on family health, health and women, mental health, accidents, environmental health, health economics, health information systems, health surveys and projections, and health indicators, to name just a few. One issue each year was devoted to disease prevention and control. The United Nations Population Fund helped finance several other publications on mortality analysis. Topics included: socioeconomic determinants and consequences of mortality; sex differentials in mortality; interaction between mortality and the family life-cycle; perinatal mortality; and developments in mortality analysis.

The Regional Office for the Eastern Mediterranean began publishing the *EMRO Epidemiological Bulletin*, and in the South-East Asia Region, efforts were made to improve the *Bulletin of Regional Health Information*. Annual updates to country health information profiles in the Western Pacific Region were synchronized with updates to the regional data bank. In the European Region, information databases on the health-for-all strategy were strengthened. The WHO Regional Office for Europe was particularly active in assembling and disseminating methods to measure and project health problems, giving greater emphasis to health promotion and protection than disease control, in accordance with the regional targets and indicators adopted by the Regional Committee (see Chapter 4). Other regional publications on monitoring and evaluating included a collection of studies on health projections in Europe (12) and reviews of health conditions in the Americas (13).

Discussing the report evaluating the health-for-all strategy in 1985, the Thirty-ninth World Health Assembly recognized the persistent deficiencies in the information support required to back national managerial processes for health development, and the difficulties that some Member States were having in generating relevant information to monitor and evaluate their strategies. It again called on WHO to cooperate with Member States to help strengthen the management of their health systems, including information support mechanisms (resolution WHA39.7).

On the basis of the reports submitted by Member States evaluating their national health-for-all strategies, a detailed analysis was made of information pertaining to the 12 indicators adopted by the Health Assembly for use in monitoring and evaluating the Global Strategy. To remedy

deficiencies noted during the 1983 monitoring and the 1985 evaluation of strategies, regional and global databases were established on demographic, socioeconomic and health indicators.

Managerial process for national health development

In 1981, WHO published guiding principles for the managerial process for health development, in support of the strategies for achieving health for all (14). Guiding principles for evaluating health programmes as part of this process were also published (15). According to the managerial process envisaged, health policy would be formulated with defined priorities, and programmes and budgets prepared to put the policy into effect. Manpower requirements would be assessed and plans made to meet them, and well-formulated countrywide programmes integrated into the general health system.

In implementing its strategy and plan of action to support the managerial process for national health development, WHO concentrated on promoting the process, technical cooperation, training, providing and mobilizing resources, developing methodologies, and reinforcing its own support. The Organization collaborated with Member States to apply the managerial process in formulating national strategies and plans of action for health for all, and in converting them into countrywide health programmes; in designing or redesigning health systems to deliver these programmes; and in implementing, monitoring and evaluating strategies, plans of action, programmes, services and institutions. To this end, detailed guiding principles on broad programming, detailed programming and programme implementation were distributed in 1983 to ministries of health and related institutions.

The national health development network was proposed as a means by which national human and institutional resources, both within and outside the health sector, could be mobilized and coordinated to support the application of the managerial process in the strategy for health for all.

To ensure the optimal use of WHO resources at country level, mechanisms for a joint government/WHO programming process were established by the various regions. In the African Region, a regional plan of action for implementing the new managerial framework was presented to the Regional Committee, and the Regional Office was restructured in 1985. In the Region of the Americas, implementing managerial strategies to ensure optimal use of resources was further streamlined, with emphasis on strengthening the operational capacity of the country representative offices and improving mechanisms for coordination between programme areas at all levels. In the South-East Asia Region, relevant national and WHO officials were briefed and country support teams formed for three countries as an initial step. In the European Region, the Regional Committee's adoption in 1984 of the regional health-for-all targets led to medium-term programmes of cooperation with 12 countries. In the Eastern Mediterranean Region, joint government/WHO missions reviewed country programmes for determining optimal support from WHO. In the Western Pacific Region, joint WHO teams helped review country programmes. In addition, at least one country a year was visited by a review team headed by the Regional Director and assisted by senior staff.

Regional programme budget policies, prepared in all regions and endorsed by the regional committees in 1985 and 1986, were used to prepare the proposed programme budget for 1988–1989, and approved by the Fortieth World Health Assembly in May 1987. These policies informed WHO's cooperation with Member States to ensure the optimal use of its resources to support national health development. In December 1987, the Headquarters Programme Committee

monitored and evaluated preparations for regional budgets during the biennium 1984–1985, marking the first step in preparing the programme budget for the 1990–1991 biennium.

Health systems research

Although research to assist the development of national health systems has been part of WHO's programme since the Organization's inception, only in 1976 was it made an explicit priority of the Organization's research effort. The WHO Advisory Committee on Medical Research (ACMR), at its 19th session in 1977, urged a major increase in health services research in areas such as nutrition, maternal and child health, family planning, primary health care, immunization, community water supplies and health manpower development. The committee also discussed the need to introduce the knowledge gained from biomedical research into health services practice. It recommended the "immediate formation by the Director-General within WHO of a planning group with adequate representation from the regions and a full-time secretariat to formulate a special programme in health services research" (16). These recommendations were presented in January 1978 to the 61st session of the Executive Board, which endorsed the steps taken by the Director-General to promote health services research in the context of national and regional priorities.

The Advisory Committee established a subcommittee on health services research, which, at its first meeting in late 1978, formulated the following definition:

Health services research is the systematic study of the means by which basic medical knowledge and other relevant health knowledge is brought to bear on the promotion of health in individuals and communities under a given set of existing conditions (17).

The subcommittee's main responsibilities were to promote and facilitate health services research in countries and in WHO. It met six times at the global level and in six regional offices during a period of less than three years, addressing definitions, concepts, scope, national capability and resources. Its work was subsequently continued by similar committees established in the regions (see Chapter 9) or for selected programmes.

Various quantitative and qualitative methodological approaches to health systems and manpower development research were reviewed on the basis of national experiences at an interregional consultation in New Delhi in 1982. The concept of health systems research (as opposed to health services research), its content and its organizational principles were reviewed by a WHO study group that met in Geneva in October 1982. It substantiated the value of this research for the future development of health systems, and considered how it could help solve health systems problems, how it should be conducted and what the Organization could do to assist Member States (18).

The study group concluded that such research could:

- demonstrate the place of health systems in society as a whole and indicate the need for intersectoral action in analysing health problems and proposing solutions;
- assess health needs by using many different ways to measure morbidity, mortality, disability, impairment, and other health indicators, and also demonstrate how health needs are transformed into political demands;

- throw light on the availability and deficiencies of health resources, including health manpower, establishments, equipment and supplies (including drugs), and knowledge;
- analyse the structure, functions and deficiencies of health systems as a whole, including the profit-making private health-care sector (modern and traditional);
- determine the conditions for, and the effects of, alternative patterns of health-care delivery, in terms of feasibility, quality and costs;
- analyse and quantify the dynamics of the economics of health systems;
- analyse management problems, including health planning, administration and regulation in order to achieve greater managerial efficiency;
- study the most suitable methods of encouraging community involvement under various sets of conditions, and determine the effects of such involvement;
- evaluate the effects of health programmes by analysing their structure, process and outcome.

Most countries regarded health systems research as a fundamental tool for the correct organization and functioning of national health systems. Decentralizing research in WHO had contributed greatly to a growing awareness in developing countries of the need for research. However, while the number of countries involved in research was large, the distribution of activities was uneven: concentrated in some countries, with little WHO-sponsored activities in others.

The Advisory Committee felt future prospects for research lay in three areas: promotion and support; strengthening national capabilities for health systems research; and promotion and support to substantive research in priority areas (including innovative methodologies). Strengthening national capabilities focused on: developing guidelines to help plan training programmes and for training materials adaptable to the needs of the countries; training teams of trainers in countries; introducing the concepts and methodologies of such research into the curricula of training programmes for other health and related disciplines; exploring and implementing the concept of institutional networking; creating training opportunities in disciplines such as the social and behavioural sciences, and economics, which had hitherto been underdeveloped; linking research training programmes to the realities of services; and developing mechanisms to monitor efforts to orient and train health personnel for this research. Priority subjects included: primary health care in urban areas; intersectoral action; community involvement; social equity; health-promoting behaviour and lifestyles; social control of health technologies; and economic aspects of health and health care.

In response to a request from the Executive Board's Programme Committee to review the status of health systems research in countries and WHO, with a view to ensuring priority use of resources at the country level, a paper was prepared for their 75th session, which met at the end of October 1984 (19). The paper reviewed the scope of health systems research, research in countries, research in WHO, future prospects, and the implications of action by WHO. Health systems research was seen as a way to strengthen health promotion and health care, starting with real field problems and using a variety of research disciplines to test the practical application of scientific knowledge for improving health care and health status. The shift from health services research to health systems research resulted from the realization that health depends to a large extent on variables outside the health services. Causal variables responsible for health problems may be found in the lifestyle or the social and physical environment. Primary health care depended on a community-based approach, and solutions could often be best applied through other development sectors.

Promoting health systems research became an important component of many WHO programmes. To illustrate the uses of health systems research, a “spectrum of research approaches” was incorporated into the publication *The uses of health systems research* (20). Sixteen vignettes were presented to encourage readers to write down research approaches that came to mind, to be compared with those presented in a later section. The examples focused on individuals, including primary health centre doctors, district health officers, local health officials and state directors of training programmes, who were faced with a specific task, such as defining the health needs of an area, addressing the misallocation of drugs, and deciding whether and when to integrate services or regionalize hospital referral services.

The single most important aspect of health systems research, readers were advised, was asking the right questions, with the aim to improve understanding of the structure and functioning of the whole health system and identify problems in specific situations. Because such research had an inclusive tendency, it was deemed necessary to define its relationship to the planning process and its boundaries. For this, the reader was advised to turn to the broad approach of the managerial processes for national health development. Other ways to “conceptualize content and boundaries in defining research questions” included: adaptive research for incremental implementation; policy analysis; fundamental issues in PHC requiring field research; equitable distribution; community involvement; integration of services within the health system; and inclusion of the private sector. Next, the 16 vignettes referred to above were revisited to consider which research approaches might be used in each case. The final section addressed organization for health systems research.

During the final review of the Seventh General Programme of Work by the Executive Board in January 1983, the Secretariat suggested that the Board might wish to “delete the section relating to health systems research and incorporate that activity as an integral part of other programmes.” After there had been little support for this change, the Director-General, having indicated he had been the originator of the suggestion to the Board and would not pursue it further, wished “to sound a note of warning: if medical schools had not included managerial processes for health development in their curricula by the end of the Seventh Programme of Work, then the goal of health for all was unrealizable. Medical schools were not yet putting across the concepts of health delivery, primary health care, comprehensive health services, referral systems and health economics, let alone how to manage the health system ... Too many medical schools in the developed countries are taking independent lines on health systems research and imposing them on counterparts in developing countries. Hence, it was extremely important that health systems research should be related to management in the broadest sense of the term, otherwise it tended to become biased by the views of the particular person responsible for such research. That led to many conflicting problems for the health manager.”

An important step towards a more systematic approach to orientation and training for research was an interregional consultation in Cameroon in July 1984. Representatives from national training institutions and programmes reviewed and exchanged experiences. A training package, including a guide for planning training programmes (21), a course manual (22) and a guide for administrators and trainers (23), was fine-tuned by participants. The consultation group made recommendations to:

- generate political and managerial support for health systems research and related training
- encourage administrative activities to promote the same

- ensure training activities were supported by adequate training materials
- ensure an adequate follow-up to the consultation.

On institution strengthening, the Seventh General Programme of Work moved away from the “collaborating centre concept,” which was seen to be more suitable for biomedical research, towards more flexible arrangements with national institutions according to their needs, and towards national networks of institutions that would provide the necessary multidisciplinary approach and intersectoral coordination.

At the 27th session of the WHO Advisory Committee on Medical Research, which met in Geneva in October 1985, the Director-General challenged it and the scientific community to take a more “risky” approach. He criticized the continued separation of research and services, and the failures to learn from experience, remove obstacles to improved care, and work at the “grass-roots” level to apply the well-developed body of knowledge, using maternal and child health and family planning to illustrate his point. Separating and isolating research from services resulted in enormous waste, and an accumulation of irrelevant research. The scientific community should sensitize workers in this field to the need to enter the political arena to debate with politicians the priorities and strategies, and to use all forms of media and all other possible means to promote health systems research. For the Organization to support this process, a greater proportion of the regular budget would have to be allocated to it (24).

At the next session of the Advisory Committee, Dr Mahler made clearer his frustrations: For 25 years he had been “whipping that horse” (health systems research) “but we just are not making any real significant progress in this field”. He used the example of clinical trials on beta blockers to make the point that “nobody in the scientific community cares [after having completed clinical trials] whether you have a compliance rate of 10 or 90”. It is “very unfair to the patients themselves ... that you don’t care about whether they take their drugs or they don’t take their drugs”. In a more sweeping statement, he indicated his regret that Member States were using WHO resources to do “all kinds of fanciful stupidities, like buying a little bit of DDT, or cars, or sending a fellow here and there, rather than making use of them in order to get down to understand their own predicament”.

Additional resources were allocated during the 1986–1987 biennium from the Director-General’s Development Programme to support country-specific research and development activities. With these resources, research on issues closely related to health policy-making, such as community involvement, home-versus-hospital deliveries, health services, reorienting health manpower, and allocating resources, was initiated in nine Member States: Botswana, Burma, Israel, Kenya, Mauritius, Papua New Guinea, the United Kingdom, Senegal and Zimbabwe. Following a meeting in Geneva in April 1986 of the Health Systems Research Advisory Group to review proposed research activities and to advise on future directions for the programme, individual members of the group cooperated with Botswana, Kenya and Mauritius in their research activities.

Health legislation

The Health Assembly showed renewed interest in health legislation in technical cooperation towards the end of the third decade. Resolution WHA30.44, adopted in 1977, called on the Director-General to strengthen WHO’s programme on health legislation and stimulated a rethinking of the approach

hitherto taken in this field, leading to intensive consultations with many Member States. The evidence gathered suggested that obsolete health legislation constituted a major obstacle to realizing the new health doctrines that had emerged after Alma-Ata.

The 65th session of the Executive Board in January 1980 endorsed the Director-General's report on measures taken to strengthen the programme (resolution EB65.R13), and in May 1980, the Thirty-third World Health Assembly strongly supported the proposed strategies for technical cooperation and information transfer in this sector.

The aim of the newly strengthened programme, expressed in the Seventh General Programme of Work, was to foster national and international action so that by 1989, most countries would have health legislation that enabled them to attain their health objectives, particularly through primary health care and other supporting components of a comprehensive health system. Programme staff were to cooperate with Member States to strengthen national capacities to identify health legislation needs and to draft the new legislation required, and to promote the international exchange of health legislation information that had been analysed by the WHO Secretariat and by a network of collaborating agencies and institutions.

The primary means to disseminate information on health legislation, the *International Digest of Health Legislation*, was revitalized by including more analysis articles and surveys explaining the background to new and revised legislation, the framework within which such legislation operated, and any obstacles encountered implementing it. The Executive Board had emphasized that priority should be given to publishing material on "legislation in support of Member States' strategies for attaining health for all their people". Accordingly, a reoriented *Digest* was introduced in 1981, with legislative texts arranged by subject rather than by country and more analytical, comparative and bibliographical material than before. The proportion of international as opposed to national texts was increased, and for the first time, the subject of bilateral treaties between developed and developing countries in the health sector was covered.

In line with the provisions of resolution WHA30.44, collaboration with other specialized agencies was strengthened. WHO cooperated with FAO in compiling national legislation governing foods for infants and young children. It played an active role in preparations for, and was represented at, the Ad Hoc Meeting of Senior Government Official Experts in Environmental Law, held under the auspices of UNEP in Montevideo in November 1981. There was also increased cooperation with nongovernmental agencies, the Council for International Organizations of Medical Sciences (CIOMS) in particular on human experimentation legislation. The Organization cosponsored with the CIOMS a meeting on teaching medical law and ethics to the medical profession, organized by the International Academy of Legal Medicine and Social Medicine and held in Geneva in April 1982 under the auspices of the World Association for Medical Law.

Cooperation principally took the form of information transfer, so that countries could have ready access to information on areas of health protection, promotion, and rehabilitation where legislation might be required, but it also included advice on how to reorient health legislation. Country-level activities included WHO-supported workshops on infant and young child feeding (Malawi, December 1982), food safety laws (China, October 1983), and health legislation (China, April 1986). At the intercountry level, in the South-East Asia Region, WHO organized a meeting on drug legislation (Kathmandu, April 1983), and in the African Region, WHO organized the first round-table meeting on health legislation (Brazzaville, October 1986).

WHO also provided advice to several developing countries on implementing the International Code of Marketing of Breast-milk Substitutes (see Chapter 10); it organized a European Region workshop

held in Copenhagen in November 1982, and an international workshop on the same subject, with joint sponsors UNICEF and the Commonwealth Secretariat, that was held in Harare in January 1983.

The emergence and spread of human immunodeficiency virus (HIV) infection and AIDS (see Chapter 15) was accompanied by unprecedented legislative activity in many Member States. WHO monitored these developments and prepared for wide dissemination a series of documents summarizing relevant legislation (25).

Direct technical cooperation continued to take the form of short-term assistance to countries from visiting consultants, though efforts to strengthen national capacities in this area through training increased as the decade progressed. In the European Region, for example, WHO sponsored the first international course on health legislation, which was held in Louvain, Belgium, in July 1984. The course, which attracted 25 health administrators from 15 countries, was judged successful in stimulating international cooperation in health legislation and promoting an understanding of legislation as a means to achieve health for all at the national level.

Workshops and meetings at the national and regional levels also were effective in stimulating awareness of critical issues in health legislation. In the South-East Asia Region, WHO provided support for a workshop in Indonesia that aimed to generate ideas to improve the country's Basic Health Act; other workshops in the region were held on: the regulatory aspects of health manpower; food control; and decentralizing authority to the provincial level. In the Eastern Mediterranean Region, WHO was represented at a series of three meetings on health legislation in the Arab world, organized by the League of Arab States and the Council of Arab Ministers of Health.

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Organization of health systems based on primary health care

The Global Strategy for Health For All by the Year 2000, adopted in 1981, stated that achieving this goal would require reorienting national health systems to develop appropriate organizational infrastructure based on primary health care (PHC). Such reorientation would need to be motivated by a basic regard for equity, social responsibility and human rights. The managerial process for national health development, as discussed earlier, was promoted as the mechanism to guide this reorientation, the goal being to formulate a health policy with defined priorities and to prepare programmes and budgets to put the policies into effect.

WHO's role in developing health system infrastructure that provided promotive, preventive, curative and rehabilitative care to all segments of the population was twofold: to provide a forum to exchange relevant national experience, and to support the design or reinforcement of health system infrastructures that could derive full benefit from this experience. To this end, WHO concentrated on: strengthening overall national health system organization; providing support for the intermediate (district) or first-referral level of care, based on PHC development at the local level; and, integrating intersectoral action at all levels of the health system infrastructure.

National health systems and policies

The results of the United Nations Children's Fund (UNICEF)/WHO Joint Committee on Health Policy study on national decision-making for PHC were published in 1981 (1). Seven countries (Burma, Costa Rica, Democratic Yemen, Finland, Mali, Mozambique and Papua New Guinea) politically committed to the goal of health for all had studied how the principles of PHC were being put into practice, tracing the factors that informed the initial political decision, how the policies were implemented, the progress made, and the problems encountered. As noted earlier (see Chapter 3), this study led to support for other countries to carry out similar investigations. The Joint Committee followed up with its own study on implementing PHC.

China, which had not participated at the Alma-Ata Conference, was the focus of attention at an interregional seminar on PHC held at the WHO Collaborating Centre for Primary Health Care in Yexian County, Shandong Province, in June 1982. The seminar was attended by high-level national decision-makers from 15 countries and jointly organized and financed by United Nations Development Programme, UNICEF, the World Bank, and WHO, with the support of the Ministry of Public Health of the People's Republic. Its objectives were to explore aspects of PHC in China, particularly the three-level network of the health-care system; the people's involvement in and management of health care; health manpower development; and financing of health care (2).

Despite universal endorsement of the PHC approach, health systems in many countries continued to depend on sophisticated, hospital-based technologies concentrated in urban areas. These countries were constrained by a lack of clear and sustained political will, opposition from vested interests to a more equitable distribution of resources, organizational structures unsuited to the integrated management of PHC activities, and a dearth of relevant information for those responsible for system planning, implementation and evaluation. To address this dearth of information, WHO prepared in 1983 a set of guiding principles to ease this reorientation process (3).

As described in Chapter 4, improving national capacities to develop systems and policies in support of PHC took different forms: strengthening the ministries of health; developing plans of action for implementing PHC; integrating health-care components; and collaborating with nongovernmental organizations.

An interregional consultation, funded by the Swedish International Development Authority (now known as the Swedish International Development Cooperation Agency) and the Swedish Agency for Research Cooperation with Developing Countries, and held in Colombo in November 1982, reviewed the experience of 12 countries that had shown how national health development networks could help make orderly improvements in health system organization. The diversity of experiences reported confirmed the need for flexibility in using the network system. Support continued to be provided to establish such networks, including helping institutes and agencies coordinate their activities to implement PHC.

In accordance with the recommendation of the 1981 session of the Joint Committee, that substantial support be provided to countries demonstrating a clear and continuing commitment to the PHC approach, WHO and UNICEF continued its collaboration with Burma, Democratic Yemen and Papua New Guinea, while extending the study on implementing PHC to Ethiopia, Jamaica, Nepal and Nicaragua. The implementation of PHC was analysed, in part, through field surveys, and findings were discussed at national workshops, where appropriate adjustments were made in plans of action.

An interregional consultation in New Delhi in June 1984 explored the problems that needed to be addressed to increase the coverage and effectiveness of PHC, including the relationship between the main programme elements of PHC and supportive infrastructure (4). The historical evolution of PHC in selected countries was reviewed, particularly the organizational aspects of the transition from vertical programmes towards integrated PHC.

A consultation held in Montego Bay, Jamaica, in July 1984 assessed joint UNICEF/WHO support for implementing PHC in selected countries and made the following observations: in many countries, the formal health sector held exclusive responsibility for implementing PHC, and the potential for broad, multisectoral coordination was still not recognized; decentralization to intermediate and local levels remained limited because appropriate managerial skills were still lacking; and financial and human resources were inadequate and not being adapted to the PHC approach.

A first interregional meeting on community involvement in health development, held in Brioni, Yugoslavia, in June 1985, and attended by participants from 14 countries, discussed case-studies, country reports and regional syntheses of the situation and trends. The meeting noted the growing awareness in countries of the need to fill the gap between rhetoric and reality, an essential step for each country being to interpret the process in light of its own sociopolitical conditions. To help communities prepare for their role, health workers should be taught the value and meaning of community involvement for health, and be trained in the necessary skills.

The tendency to look to community involvement to overcome scarce governmental resources, and also to confine activities to time-limited actions dealing with single health problems, should be monitored.

Amid continuing difficult economic conditions, financial planning and mobilizing optimum resources for health for all remained key components of WHO's work. Progress was hampered, however, by the lack of data on health financing, and a lack of experience in using such information in the planning process. A WHO study group met in 1977 to examine health services financing and identified several roles for health financing surveys. These were: to focus on alternative ways to find further resources for the health sector; generate information to help ensure resources were allocated equitably; produce cost-effective analyses and promote informed coordination among all parties providing resources for health.

Following a consultative meeting on a research programme in Financing of Health Care Delivery, hosted by the WHO Regional Office for South East Asia in New Delhi in July 1979, several case-studies were carried out in that region. That same year, the American Public Health Association, in consultation with WHO and PAHO, sponsored a workshop in Melgar, Colombia, on health financing in Central America and the Andean region. The available information on health care financing in Latin America was found to be incomplete, particularly that on direct employer payments, private insurance and direct household expenditure. Coordinating and possibly integrating public and social security health care systems was identified as the most urgent policy measure for the more efficient and equitable use of resources.

A WHO Interregional Workshop on Financing of Health Services held in Mexico in November 1979 recommended that WHO prepare and distribute a comprehensive manual with instructions on how health financing studies could be adapted to specific country conditions. It was also proposed that WHO conduct or support regional and interregional training programmes for national personnel on how to undertake and utilize the findings of such studies. An issue of the *World Health Statistics Quarterly* was devoted in 1984 to financing health services (5). That same year, a manual on financing health services was drafted and used to guide many of the country studies. In its final published form, the manual tried to be relevant to all developing countries (6). Its first section described health policies and their financial components. Techniques were then outlined for collecting data at the national level, and particular attention paid to analysing the cost and financing of PHC. International experience with the various approaches to obtain extra resources was discussed, including new taxes, compulsory and voluntary health insurance schemes, charging users for services and external cooperation.

The special issue of *World Health Statistics Quarterly* provided examples of health-sector financing from Europe, China, Ethiopia, Malawi and Sri Lanka. One "vital message" that emerged from this review was that health for all could not be achieved without realistic financial planning. It was not enough for plans to incorporate all national priorities and aspirations in the hope the necessary finance would come from somewhere. Plans needed to be costed in detail and specific sources of finance identified. The amounts expected from taxation and external sources, however, had to be realistic.

The World Bank's senior economist, in his contribution to the special issue, briefly reviewed the options available to developing countries and concluded that the "best that can reasonably be expected from outside the sector in coming years is gradual growth, falling far short of the amount needed to reach sectoral goals". He added that mobilizing additional resources from within the sector could require increasing household contributions through user charges or coverage charges for participating in risk-sharing schemes, and that other opportunities

should be explored for mitigating current problems through changes in the public/private mix, restructuring public subsidies, and reallocating resources. An annex was included devoted to “questions to be considered when policies involving user charges are examined”.

In the last paper of the *World Health Statistics Quarterly*, which addressed future development, some of the persisting problems for ministries of health in developing countries were summarized. Ministries had focused on programmes, buildings, manpower and supplies, while the financial aspects of planning had “tended to be neglected”. Moreover, it had not traditionally been seen as the function of ministries of health to prepare financial projections, let alone plans for the use of resources in the health sector by government, nongovernmental organizations, employees, social security institutions, insurance companies and individuals purchasing in the private sector. Therefore, the full implications of preparing a master plan for using all resources in the health sector, as the health-for-all strategy specified, had only slowly come to be understood. What was “urgently needed” was an assessment of the options available. More needed to be known about why one system of financing could work in one country but have limited prospects in another.

Training courses in procedures for estimating financial requirements were held in Africa, and international seminars on health economics and financing took place in Bamako in June 1986 and in London in September 1987. With support from UNICEF, the Danish International Development Agency (DANIDA) and the Aga Khan Foundation, a cost-analysis training package was produced. WHO and the United States Agency for International Development cooperated with teams of investigators at local institutions to study deficiencies in the level and management of the recurrent budget of the health sector in Costa Rica, Jamaica, Mali and Pakistan. Trends in resource allocation were reviewed for selected districts in seven Member States. A common framework was used and local people with economics skills worked closely with district and ministry of health staff. The results of these studies were incorporated in background reports for the district health systems meeting held in Harare (see below). In the Region of the Americas, there were studies into closer cooperation between ministries of health and social security institutions, with a view to extending health programmes and interagency coordination.

The 1987 Fortieth World Health Assembly technical discussions on economic support for national health-for-all strategies identified seven principal methods for ministries to obtain additional funds: attract more tax revenue, possibly from earmarked taxes; obtain more external cooperation; introduce or extend compulsory health insurance (including social security); require employers to provide defined services; introduce or raise charges for government services; stimulate community financing and voluntary health insurance; and encourage money-raising by nongovernmental agencies (7).

At the 1987 session of the African Regional Committee, the African ministers adopted the Bamako Initiative. Sponsored by UNICEF and WHO, this initiative aimed to ensure the health of women and children through the financing and management of essential drugs in districts and communities. Initially, about US\$ 100 million was sought to buy essential drugs and distribute them to most districts in Member States of the African Region.

While there was a high degree of political commitment to health-for-all goals and PHC by the end of the decade, ministries of health continued to face numerous problems in organization, structure, management and financial resources. Responses to these problems included cooperating with 12 Member States from the Region of the Americas and the South-East Asia

Region in reorienting activities, training, and organizational reviews at various levels. This work was carried out with support from DANIDA. Similar support was given to member States of the European Region.

A WHO expert committee met in Geneva in November 1987 to discuss ways to strengthen ministries of health for primary health care. It examined country experiences available from recent studies and meetings on decentralization, coordination within the health system, integrating vertical programmes, intersectoral action, improving management, economic support for PHC, and other attempts to make the health system and its various components more efficient and effective (8). The meeting had three objectives: to identify approaches to overcome the shortcomings of ministries of health; to identify approaches to assist national administrations and international health organizations in their efforts to strengthen ministries of health for PHC; and to make recommendations to the Director-General on how WHO could further cooperate with Member States to achieve these objectives.

To meet these objectives, the expert committee outlined the roles and functions of the ministry of health and current weaknesses. Strategies for strengthening ministries were summarized, including the means to achieve desired changes. The 112-page report ended with principal conclusions and recommendations.

Ministry of health functions were classified under four broad headings: production of resources; provision of services; economic support mechanisms; and health activity management. Producing health resources involved: health manpower; establishing health facilities; pharmaceutical production, procurement and distribution; producing health equipment and supplies; and health science research and technology.

Provision of health care was seen to include: environmental health services; preventive and health promotion services for individuals; first-level medical care; secondary health care; tertiary health care; health care for individuals within special populations; health care for individuals with special disorders; and organized self-care.

Economic support mechanisms consisted of mobilizing financial resources and allocating health funds, while health activity management covered the following: managing health affairs; health planning and policy formulation; information flow; coordination within the health system and among social and economic sectors; community involvement; health legislation; regulating human and physical resources; regulating health services providing individual care; environmental regulation; evaluating health services; and international cooperation.

In addition to ministries of health, other types of organizations shared responsibility for one or more functions in health systems infrastructures. These included: government organizations; nongovernmental organizations or voluntary agencies; industrial or other enterprises; and private health-care providers.

The expert committee's review discerned several weaknesses in ministries of health: an inadequate or inappropriate range of responsibilities; an isolated role in the national health system; excessively centralized responsibilities; poor management and weak leadership; inadequate links with other social sectors concerned with health; limited community involvement; and meagre economic support.

Addressing the subject of poor management and weak leadership, the expert committee concluded that the emphasis on PHC had severely tested the management capabilities of ministries of health. The effective functioning of local personnel responsible for PHC, most of whom were given only brief training, depended on good supervision, an efficient distribution

of supplies, good communications and an orderly flow of information, consultation, and other features of sound management.

Investigations in rural areas revealed a widespread failure to implement the various strategies recommended at Alma-Ata and afterwards. In country after country, PHC units in rural areas were found to be seriously underutilized; people bypassed them to seek treatment at the outpatient departments of district or provincial hospitals. Primary health workers spent most of their time waiting for patients to seek treatment for common ailments, and little time on preventive community work. The supply of drugs and vaccines was often inadequate, preventing patients from receiving adequate treatment. Hardly any time was spent on encouraging or assisting households to improve their sanitation, and there seemed to be little health education for individuals or groups. Primary health workers seldom showed enthusiasm for their work or displayed any initiative to detect new problems or launch health programmes.

Several weaknesses were put forward to explain these problems, including the initial training received by primary health workers; the way drugs and vaccines were distributed; and the lack of local community involvement in developing and operating the PHC programme. At the root of most of the difficulties, however, was ineffective management within the ministry of health. Not surprisingly, with health ministries unable to bring order to their own house, their links to other sectors and to the population were similarly inadequate.

Seven strategies for overcoming these and other identified weaknesses were considered: determine the appropriate scope of ministry of health responsibilities; coordinate functions within the health system; initiate decentralization and organizational restructuring; improve management and leadership; encourage intersectoral collaboration; promote community involvement; and increase economic support.

Country experiences were used to illustrate each of these strategies, some drawn from much earlier in the 20th century. In the United Kingdom of Great Britain and Northern Ireland in 1974, for example, the four parallel hierarchies established with the National Health Service after the Second World War were integrated, while in Chile, in 1959, several previously separate health activities were similarly amalgamated under a greatly strengthened Ministry of Health. More recently, Mexico had demonstrated the value of decentralizing ministry of health responsibilities: in 14 out of 32 states, ministry of health and social security services for rural populations had been transferred to state governments. This and other examples were used to illustrate the importance of planning and executing decentralization in an orderly manner.

In Mexico, devolution was accompanied by various government actions. Standards were set for the state organization, budget control, logistics and various health regulations. State performance was monitored by officials from the centre and recommendations were made to correct deficiencies. Health manpower policies were formulated centrally on such matters as training for traditional birth attendants, and managing rural social services by new medical graduates. Health systems research was carried out centrally: the performance of the first 12 decentralized states, for example, was compared with that of those that remained under central control. Preliminary observations showed a revitalization of health activities within the states and a general improvement in the services delivered to the population.

The expert committee paid particular attention to the district health system and to intersectoral collaboration, which are discussed separately below.

Virtually all of the strategies recommended required additional spending. The need to achieve savings by using resources more efficiently was recognized as a major challenge. One of the key concerns in the quest for efficiency was whether doctors should more readily take cost into account

in their decision-making, as a large proportion of health service spending was incurred at the doctor's initiative, not the patient's, yet doctors were often poorly informed about the cost implications of their decisions. It was agreed the problem should be tackled by providing education on the subject, improving information systems and changing incentive patterns.

The savings to be made from reorienting priorities in many health ministries were believed to be crucial to the entire PHC strategy: if disease is prevented, or detected and treated promptly, hospitalization might not be necessary; if an injury is treated and secondary infection and serious disability avoided, there is no need for costly rehabilitative services.

The expert committee's conclusions and recommendations began with the need for health to be recognized as a major contributor to development. Health care must not be seen as a mere product for consumption, but rather, as an investment in society that will help drive economic and social development. Political leaders needed to recognize the value of health in the life of the people and the approval with which the health services were viewed. Extending and improving health services could help achieve other goals in national development.

The expert committee recommended that WHO should consider developing a network for providing information on how other health ministries had been strengthened to function more efficiently. It should also consider providing technical support to health ministries to help them analyse the coordination of health programmes, so that policies and procedures might overcome the fragmentation common in the health sector. Such analysis should address manpower development and the use of health care institutions. Similarly, WHO should publicize decentralization successes so that other countries might learn lessons to guide their own efforts. The Organization should also help countries share their experiences of structural problems in health ministries and the strategies used to overcome them.

Work with Member States in areas of management that had received little attention should be continued, the expert committee said. These areas included: health system organization, and more specifically, the effectiveness of alternative structural and functional arrangements in different political and administrative settings; administration, particularly, personnel, supply and logistics, and maintaining facilities, equipment, and transport; budgeting and financial planning and management; and personnel policies covering supervision and career development. At the same time, Member States should be encouraged to assess the appropriateness of training programmes for health professionals.

WHO was asked to support action-oriented research on health improvement through inter-sectoral initiatives and appropriate mechanisms. It should help Member States conduct research on strategies that health ministries could pursue to stimulate community involvement, and it should disseminate the results of such research.

Further, WHO should encourage efforts to evaluate how changes in sources of financing had affected patterns of health services use and health status, and it should consider producing guidelines on alternative financing sources for the health system, giving due consideration to equity, efficiency and quality of service. Training for health financing, financial planning, and economic evaluation should be considered, as should information exchange and bibliographical support on the experience of countries in mobilizing resources for PHC. Finally, WHO should support countries wishing to improve the legislative backing for PHC policies.

District health systems based on PHC

Enshrined in the Declaration of Alma-Ata was the notion that PHC should be sustained by integrated, functional and mutually supportive referral systems, involving health workers suitably trained socially and technically to work as a health team. No special attention was given at that time, however, to the district level. Nor did the district receive any special attention in the Seventh General Programme of Work. There, in the brief discussion on the organization of health systems based on PHC, there is a passing reference to district health offices in the paragraph indicating that WHO would provide information on national, and especially innovative, experience.

The Eighth General Programme of Work, however, which covered 1990–1995, called for the components of health system infrastructure in district health systems to be integrated, the word district used to denote “a geographical area that includes all components of a health system required for community and first referral level care, and that can be managed quasi-independently ... A district health system based on primary health care comprises a well-defined population living within a clearly delineated administrative and geographical area. It includes all the relevant health care activities in the area whether governmental or otherwise. It therefore consists of a large variety of interrelated elements that contribute to health in homes, schools, workplaces, communities, the health sector and related social and economic sectors. It includes self-care and all health care personnel and facilities, whether governmental or nongovernmental, up to and including the hospital at the first referral level, and the appropriate support services, such as laboratory, diagnostic and logistic support. It will be most effective if coordinated by an appropriately trained health officer working to ensure as comprehensive a range as possible of promotive, preventive, curative, and rehabilitative health activities” (9). The importance of the district level had emerged out of positive experiences gained in countries.

The technical discussions held in 1981 by the Thirty-fourth World Health Assembly, although dedicated to health system support for PHC, concentrated on one particular aspect, namely support from district or first-referral level to PHC action at the periphery. Seven topics were addressed: organizing health system support for PHC; intersectoral support for PHC; community participation; manpower; financing; management and supportive supervision; and health care facilities, equipment and supplies. The results of the technical discussion were incorporated into a study that dealt with these seven topics, as well as broader issues, “notably the basic economic and social preconditions for primary health care” (10). One such precondition was an increase in social and economic justice in the use of health resources.

In most developing countries, there had not been the opportunity or the resources for the management component of PHC to function below the national level. While there were some examples where responsibility for health was delegated to a lower level on the basis of local needs, the intermediate level in most countries had little to do with strategic planning, little or no control over the available budget, and little flexibility to support any community initiatives that arose. Nevertheless, it was felt there was a trend towards a greater sharing of responsibility between the intermediate, basic health service and community levels in planning and carrying out health activities within the limits of local resources.

To encourage this trend, a variety of innovative efforts were supported in selected districts of several countries. A framework for analysis and action to improve PHC support at the district level and below was prepared and deployed in several countries, including China, Ethiopia, United Republic of Tanzania, Thailand, Zambia and Zimbabwe. Workers involved in these efforts met in Zambia in late 1983 to share their early experiences, review progress and discuss

further action, including disseminating the practical lessons they had learnt. Several countries were working to improve health recording and reporting systems, and were testing them in selected districts. Others were developing approaches for comprehensive management, paying particular attention to the intermediate level.

As part of earlier efforts to make health-care facilities more relevant to local needs and possibilities, a series of national case-studies, on the planning, construction and operation of such facilities within the context of national health systems, were carried out in Algeria, Cuba, Senegal, Sudan, Venezuela and Zambia. Reports of these case-studies were added to the series of publications initiated in the 1970s on approaches to planning and designing health-care facilities in developing areas (11). These publications focused on improving the technical features of the facilities discussed: out-patient services; surgery; engineering and maintenance services; managing a building project; and evaluating facilities, among others.

Special efforts were made to strengthen PHC in urban areas to provide essential care to all disadvantaged and at-risk populations. Inter-city workshops and seminars on PHC in urban settings were sponsored in Latin America, Europe, Asia and the Pacific. WHO and UNICEF jointly sponsored an interregional meeting on the subject in Geneva in July 1983 to review and exchange experiences in developing information bases.

The UNICEF/WHO Joint Committee on Health Policy reviewed progress in PHC in urban areas at its 25th session in January 1985, for which the a policy discussion paper was prepared (12). While expressing satisfaction with the activities reported on, the Joint Committee agreed that more forceful advocacy was needed in support of PHC for the urban poor. Pilot and experimental projects sponsored by governments directly or in collaboration with voluntary agencies should be supported to assess their potential use on a large scale.

Senior health and municipal officials from 16 cities of five WHO regions attended an inter-regional consultation on PHC in urban areas in Manila in July 1986. Subsequently, at a WHO/DANIDA workshop held in Addis Ababa in November 1986, participants from five cities in east and central Africa discussed urban health and proposed to develop methodologies for assessing problems and associated risk factors. In the European Region, a “healthy cities” project was established, emphasizing health promotion and ways to improve the environment.

In 1984, in response to the urgent need to promote self-reliance and develop national skills in the many disciplines and sectors in this field, WHO collaborated with the North London Polytechnic (United Kingdom) and other institutions to produce a loose-leaf kit with material on training, research and practice in health facility planning. The Organization also supported training courses in individual countries and sponsored the creation of a global network of national training centres.

Logistic support, one of the essential elements required to develop health systems, received considerable attention during this period, especially in programmes for essential drugs and immunization. An interregional meeting held in Ottawa in June 1985 on developing and strengthening logistic support to PHC, including communication and transport, made recommendations on policy formulation, exchanging experiences, technical cooperation in developing countries, training, standardizing medical equipment and supplies, direct support, research and development, and coordination between international organizations. A 141-page manual was prepared on how to assess health services logistics, with particular reference to peripheral health facilities (13).

With regionalization receiving more attention, the role of front-line and intermediate hospitals and more specialized facilities was looked at more closely. Given that hospital budgets

consumed as much as 90% of the overall health-care budget in many developing countries, they were viewed as representing “a force competing with primary care services for scarce resources” (6). At the same time, however, hospitals represented an “enormous potential source of support for primary health care”. How that potential might be realized was the subject of a conference in Karachi in November 1981, cosponsored by WHO and the Aga Khan Foundation (14).

WHO made two major conclusions: hospitals should be associated with a well defined catchment area within a regionalized framework; and hospitals should have a department of community health to generate interest, expertise and direct interaction with the clinical services and the communities in its catchment area. The responsibilities of such a department should include: in-service training for reorienting hospital health workers to change the ‘hospital outlook’ to a ‘health perspective’; cooperating with the educators and supervisors of PHC workers in the field to improve training management and administration; collaborating with the community to seek relevant information on health problems and appropriate education; ensuring the hospital meets its referral and logistic support responsibilities; identifying gaps in PHC services and introducing appropriate innovations; and conducting relevant health services research that focused on practical issues to achieve a progressive improvement of services. Dr Mahler used his introductory statement to the conference in Karachi to indicate that: “Unless there is a re-orientation of the education of professionals, especially physicians, the conclusions of this conference cannot be realized.”

The role of hospitals in PHC continued to be reflected in the main topics of the International Conference on Hospitals and Primary Health Care, organized by the Indian Hospital Association under the aegis of the International Health Federation and held in New Delhi in January 1985, and also at the 24th International Hospital Federation Congress in San Juan, Puerto Rico, in May 1985. In March 1985, a workshop on “the establishment of Social Medicine Division in Hospitals” had been held in Athens, where three working groups were convened on: the impact of medical decision-making on costs (London, November 1985); planning methods for the hospital sector (Kiel, November 1985); and the impact of demographic morbidity and social changes on the functions of hospitals (Stockholm, December 1985).

An expert committee met in December 1985 to examine the role of hospitals at the first referral level (15). Hospitals versus PHC was judged to be “a false antithesis”. This required, however, that hospitals understood their role in PHC was to “promote the health of the whole population that it serves, including the health of individuals who never enter it”. The thrust of the expert committee’s report was to explore the implication of this for the hospital, the opportunities and obligations that it should recognize, and how the differing values of the hospital and other local health services could be made compatible and mutually strengthening. The report also explored how full involvement in PHC might change the nature and function of the hospital.

Perhaps the most important single event for district health systems was the interregional meeting held in Harare, Zimbabwe, in August 1987 (16). The meeting was organized by WHO, and cosponsored by the United States Agency for International Development, the Christian Medical Commission, UNICEF, the United Nations Development Programme and DANIDA. Its objectives were to: review the experiences of participating countries; identify successful approaches to overcoming common constraints; formulate concrete proposals and make recommendations to reduce constraints and promote the wider application of more effective district health systems based on PHC.

A total of 143 people attended the meeting, comprising representatives from 18 countries, WHO, UNICEF and the World Bank, bilateral and multilateral technical cooperation agencies, nongovernmental organizations and research and training institutions. Four groups were formed to discuss: district planning and management; community involvement and intersectoral collaboration; strengthening manpower in district health systems; and district financing and allocation of resources.

Based on the experiences of Bangladesh, China, Democratic Yemen, Ethiopia, Guatemala, Mexico, Nigeria, Norway, Somalia, Thailand, Turkey and Yugoslavia, the first group recommended that the authority for planning and managing health services, including allocating and reallocating funds, be decentralized to districts, where health information systems would be used to monitor both health problems and the utilization of resources in support of district planning and decision-making. Districts should appoint health management teams, led by a district health manager oriented towards community health and PHC, and linked to multi-sectoral district development committees. The district hospital should be integrated with the other district health services, where it, along with vertical programmes, would provide logistic support to community-based services.

The second group was informed in its discussions by the experiences of China, the Democratic Republic of Yemen, Kenya, India, Indonesia, Malawi, Nigeria, the Philippines, Sierra Leone, United Republic of Tanzania, Thailand, and Zimbabwe. It concluded that community involvement and intersectoral action were closely related. Both would be strengthened by health workers committing to active partnerships with communities, based on a comprehensive and analytical problem-oriented approach. Community involvement should be based on solving problems and might require support from other sectors; hence, it might serve as a precursor to intersectoral action. The community needed also to become a full partner in monitoring activities.

The third working group discussed the relevant experiences of attending countries, starting with Ethiopia's efforts to train a new type of manager, emphasizing communication skills and community diagnosis. The group focused on seven problem areas: in-service training; the self-sufficiency of districts in providing in-service training; the adequacy of job descriptions; incentives for working in the district; leaders and change agents for PHC; training professionals; and training the trainers. Recommendations were made on each of these subjects, while general recommendations included: more quality in-service training; increased incentives to recruit personnel into rural areas; and more emphasis on training the trainers of health personnel.

The group that addressed district financing and allocation of resources based their discussions on studies in selected districts of Ethiopia, Indonesia, Kenya, Lesotho, Malawi, Sri Lanka and United Republic of Tanzania. These revealed the economic and financial constraints to implementing PHC, including uncertainty about the role and authority of districts to generate and control funds, and the lack of financial information in some districts. The main areas of concern noted were: mobilizing finances; allocating and reallocating financial resources at district level; and district financial management and organization.

The role of district health teams in managing and reviewing financial resources needed substantial reinforcement. User charges were the most widely contemplated alternative to current sources of financing. Other sources included social security funds, various types of private insurance and direct contributions by the community. How changes to fee systems had affected the use of services remained underinvestigated, and the gathering and use of financial

information was inadequate. The pattern of allocating funds to and within districts was not adequately documented.

The discussions did not address WHO's role in supporting district health systems. Dr Mahler, in his introductory remarks, identified four such roles:

- strengthening WHO support for research and development in selected districts to find practical solutions to difficult operational problems. Linked to that was the pressing need to focus WHO country budgets on health systems research designed to boost district health systems;
- support for countrywide action for district development, which might include technical support to develop national strategies and plans of action for district strengthening. It could also comprise support for improving planning, management and monitoring of operational procedures for districts, including the integration of individual programmes, training and reorientation of health personnel, intersectoral action, and selection of appropriate technologies;
- information support to promote district health systems through learning material on training, leadership and team development. Exchanging information about country experiences in developing strong district health systems would form an important part of this information support;
- vigorous mobilization of additional human, technical and financial resources for strengthening district health systems based on PHC.

The meeting, responding to Dr Mahler's call for a "declaration by all Member States of their intention to increasingly commit the bulk of their national and external health resources to the establishment of strong district health systems based on primary health care", adopted a Declaration (see below).

Declaration of the Harare Conference on Strengthening District Health Systems Based on Primary Health Care

At our meeting here in Harare a mere twelve years before AD 2000, the date set for achieving the goal of Health for All, we strongly reaffirm the primary health care approach as the means to achieve that goal.

Despite impressive progress in implementing primary health care in many countries, weaknesses in planning, organization and management, particularly in districts, represents one of the greatest obstacles impeding health development. This fact emerged from an evaluation conducted by 90 percent of WHO Member States.

We are convinced that effective intensification of primary health care depends on comprehensive action based in well-organized district health systems, as called for by the 1986 World Health Assembly. With increasing concern to ensure equity and the sustainability of the impact of accelerated programmes on primary health problems, we are convinced that the district provides the best opportunities for identifying the underserved and for integrating all health interventions needed to improve the health of an entire population.

A district health system is taken to mean a more or less self-contained segment of the national health system which comprises a well-defined population living within a clearly

defined administrative and geographical area, either rural or urban, and all institutions and sectors whose activities contribute to improved health.

We believe that the community and all sectors, including the health sector, need to come together for the effective strengthening of district health systems, through vigorous implementation of the following points of action:

- **Adopt national policies** which provide for necessary support to districts.
- **Decentralize** financial and manpower management as appropriate to encourage flexibility within districts in adapting national policies for resource use according to local priorities.
- **Develop a district planning process** to define objectives and set targets in each district with emphasis on those families and communities most at risk on the basis of a health information system to monitor health problems and resource utilization.
- **Strengthen community involvement** by creating appropriate mechanisms for providing support and increasing self-reliance by strengthening the knowledge and skills of communities in solving health and development problems.
- **Promote intersectoral action** by creating mechanisms to give health concerns higher priority on the agenda of district development and helping each sector define its role in health activities.
- **Develop district leadership** for primary health care through orientation, training and continuing education of key individuals from all walks of life.
- **Mobilize all possible resources** for health development, exploring further the role of financing through user-charges, social security and pre-paid schemes, and making better use of resources available from communities and nongovernmental groups.
- **Ensure sustainability** by integrating all programmes into the district health system and improving the basic management skills of health personnel.
- **Redefine the role and functioning of hospitals** within a district as integral parts of the district health system.
- **Use health systems research** as a tool for solving problems of the district health system, including financing and resource allocation and to answer the need for health development networks to conduct situational analyses and field studies.
- **Ensure equity between districts** by allocation of national resources on the basis of need.

Although communities and nations will naturally take responsibility for the above action, we would also:

- **Encourage the mobilization of international, multilateral and bilateral resources** in support of the implementation of district health systems based on primary health care, action research and development, and exchange and dissemination of information. National, regional and global collaboration in this effort, through appropriate coordination mechanisms

Intersectoral action for health

Although intersectoral action is one of the pillars of the PHC approach, only in the last biennium of this decade did it become a distinct programme item. In stressing the importance of intersectoral action for health, the Seventh General Programme of Work advocated several

approaches. WHO should promote it “at the international level particularly through the establishment of bilateral and multilateral arrangements with other United Nations agencies and with nongovernmental organizations”, and WHO should foster such action by “collaborating with countries on the development of measures for promoting health to be taken in other sectors ... political, social, economic, cultural, or educational in nature”. In the Eighth General Programme of Work, while similar approaches still applied, intersectoral action for health was now firmly rooted in health infrastructure development.

The first phase of the study on intersectoral action for health, begun in 1981, was completed in 1982. Case-studies in India (Kerala state), Jamaica, Norway, Sri Lanka and Thailand examined the health status of populations at different levels of per capita income and socioeconomic development. These case-studies were discussed at a consultative meeting held in Trivandrum, India, in November 1982, and further reviewed by a working group that met in Geneva in September 1983. These meetings offered insights into the intersectoral processes underlying the transition from poverty and underdevelopment to affluence and a high degree of development, and identified the associations of diseases and patterns of ill health at various stages of this transition, relating them to their background of social formations and socioeconomic conditions. The meetings also discussed the sociocultural and other processes that promoted health and well-being, and those that contributed to patterns of morbidity and mortality to emerge and persist, and suggested how and where action in sectors other than health could best be directed to strengthen the former processes and divert the latter into positive channels. The primary lesson learnt was “the necessity to involve the people themselves as closely as possible” if action programmes were to be realistic. This could be done through formal groups and mechanisms, through ad hoc multisectoral groups comprising representatives from the public sector, and through groups that develop programmes in response to community needs. For effective action, “an explicit political commitment is necessary which must be communicated to all the sectors involved” (17).

Once these case-studies were completed, workshops and meetings were held in all WHO regions. To review the African experience, a consultation on intersectoral cooperation was held at the ministerial level in Brazzaville in the Congo in December 1985. Participants from the Congo, Ethiopia, Mali, Senegal, Sierra Leone, United Republic of Tanzania, Togo, Zaire, the Economic Commission for Africa and the Organization of African Unity received background papers on agriculture and health in Africa, health education for African countries as a factor for health promotion among Member States, and environmental and health problems related to water resources development: the persistent issues, and effects on health of ecological alterations resulting from desertification (18). These and other reports informed the technical discussions on the role of intersectoral cooperation in national strategies for health for all during the Thirty-ninth World Health Assembly in May 1986. These studies had revealed the need for intersectoral collaboration in both developing and industrialized countries, but interventions by the different sectors had to vary according to development patterns and the principal risk factors affecting health, especially in the most vulnerable groups. All of these elements needed to be characterized as part of the policy analyses to be conducted by other sectors.

These considerations formed the basis of resolution WHA39.22, which called on Member States to identify and develop health objectives as an integral part of sectoral policies for agriculture, the environment, education, water, housing and other health-related sectors; to include in their health-for-all strategy specific equity-oriented targets to improve health among disadvantaged groups, such as women, the rural poor, the inhabitants of urban slums and people engaged in hazardous occupations; to use the population's health status to assess

the quality of development; and to ensure that the health and nutritional status of the most disadvantaged social groups were protected when economic adjustment policies were designed and implemented.

In response to the resolution, four main lines of action were to be taken, with equity the underlying principle: a stronger promotion and advocacy campaign; developing health objectives in public policies; research on specific issues to improve analytical capability; and training and activities for members of the community – women and schoolchildren in particular, since they have the most influence – and for members of professional groups and universities, in order to arm them with new skills.

WHO-supported intersectoral activities were initiated in several countries. In Bangladesh, for example, a successful approach pioneered by the Grameen Bank was used to improve the quality of life of vulnerable groups; in Indonesia, as part of a slum improvement project and the need to address the priority problems of mothers and children under five years of age, a study was carried out to develop a methodology for policy analysis in the different sectors to ensure that health and other quality-of-life objectives were not overlooked; in Sri Lanka, links between patterns of morbidity and socioeconomic and physical conditions were analysed more thoroughly; and in Zimbabwe, studies were conducted to ascertain the links between the educational level of women and their health and that of their children.

Intercountry meetings were held in the African and South-East Asia Regions. Three sub-regional meetings, in Bamako, Brazzaville and Harare in November 1986, brought together decision-makers and technical staff from the key development sectors, including planning and finance. Two meetings in New Delhi, in October 1985 and October 1986, brought together representatives from ministries of health and national planning authorities to discuss formulating national plans, concentrating on action in favour of vulnerable groups.

At the first intercountry meeting held in New Delhi, eight countries – Bangladesh, the Democratic People's Republic of Korea, India, Indonesia, Maldives, Nepal, Sri Lanka and Thailand – brought two participants each (19). Following several days of discussions on the critical issues for intersectoral action on health, a methodological framework for a systematic analysis was developed. This comprised nine steps, which were illustrated by an analysis of water-related health problems. Each of the participating countries then outlined their plans, including, in some instances, a timetable for the coming year. Thailand, for example, where the intersectoral action for health programme was being administered by a quality-of-life committee, planned a public educational campaign for 1986. By October 1986, this programme had evolved into an intersectoral action programme for comprehensive rural development with broad objectives to promote intrasectoral relationships in the health sector, and intersectoral action for comprehensive rural development at the district level. Two districts in each of the four regions in the country were targeted for action in the coming biennium, with the ministries of the interior, agriculture, education, industry and public health, and the national economic and social development board, all to be involved (20).

At this point in the regional plan of action, WHO was to: ask relevant United Nations agencies regionally and nationally to provide support; develop a regional intersectoral task force with expertise in economics, finance, development planning, agriculture policy etc; and collaborate with relevant United Nations agencies to organize workshops at country level, both before and during projects, for national personnel from various sectors. A similar workshop with the agencies at the regional level was also envisaged.

The need for national health development networks emerged from an awareness that standard management approaches were not producing the social change and institutional development needed for PHC. A better way was needed to bring together the scattered expertise of individuals and institutions to help resolve problems. Networks were seen to fulfil this function by “helping to create a ‘critical mass’ of expertise in systematic problem-solving from among the staffs of a country’s regional agencies and institutions. By drawing on the expertise of various institutions and encouraging collaboration in practical field work”, networks provided the platform for service personnel and experts to obtain valuable experience in solving health-care problems in the community (21).

Countries adopted different approaches. In Ethiopia, a special committee answering to the Central Planning Supreme Council was created to coordinate the network’s 14 institutions. The Department of Community Health of the Medical Faculty of Addis Ababa University acted as the network’s secretariat. In Finland, various networks were responsible for specific functions, each with its own management system. These were linked by different means; some of these were organizational, while others depended on informal affiliations based on educational or voluntary connections, such as agreements between groups with a common ideology or interests. In Zambia, in 1983, a national PHC development committee was formed, comprising members from the Ministry of Health, research institutions, the National Commission for Development and Planning, the ministries of education, agriculture, labour and social services, the School of Medicine (Department of Community Medicine) and others.

Inequity between and within nations was the central theme of a meeting held in London in June 1987. Participants focused on experiences in the United Kingdom and discussed how national development strategies could more equitably distribute basic services and improve the quality of life of disadvantaged groups. They generally agreed that the United Kingdom’s RAWP (Resource Allocation Working Party) methodology might be adapted for future use in developing countries.

In parallel with developments at the country level, an international network of national institutes was established, with the technical capability to support the different sectors in analysing the issues on which they decided policy and then develop those policies, taking into consideration the health problems affecting the most vulnerable groups, the need to strengthen self-reliance among them, and the interventions required. WHO and the Harvard Institute for International Development and the Harvard School of Public Health jointly sponsored a meeting in July 1987 at which representatives of these institutes and senior decision-makers from developing and developed countries sought to devise strategies for promoting a greater awareness in public policy circles of the importance of health policy analysis and the possibilities for action. The meeting, held in Cambridge, Massachusetts, USA, was supported by Swedish International Development Authority/Swedish Agency for Research Cooperation with Developing Countries as well as the Rockefeller Foundation.

The report from the meeting incorporated some of the experiences that participants from Kenya, the Nordic countries, the Philippines, Thailand and Uganda had brought to the meeting, as well as the results of discussions held. It also reflected the “strongly felt need to move this topic from what ‘should’ be done to what ‘has’ been done” (22). The report outlined different strategies to introduce health objectives to public policy, to define vulnerable groups and promote equity in development policy, and to document the effects of development on health. The report called for the three-year studies supported by WHO and undertaken in the Region of the Americas to be carefully reviewed in the coming years, along with the activities being carried out in four

African countries (Zimbabwe, Kenya, Ghana and Nigeria), with the support of the Carnegie Foundation, which focused on the improved health behaviour of women and reducing infant mortality. These studies were informed by those from Sri Lanka and Kerala, which had shown how female literacy could positively impact on infant mortality.

Two other important projects were being carried out at this time. In Thailand, learning materials were being developed for primary-school children, and their effect on the health behaviour of the student school population assessed. In Bangladesh's technical cooperation in developing countries project, Thailand was providing technical support in a selected group of districts to help villagers use the Basic Minimum Needs indicators to identify the poorest segments of the population and the interventions required to help them improve their situation.

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Health manpower development

The objectives of WHO's Seventh General Programme of Work in health manpower development were to help countries plan their training and deploy the right personnel within their budgets. Further, WHO should help to ensure that such personnel were socially responsible and possessed appropriate technical, scientific and management competence to develop and maintain comprehensive national health systems based on PHC. As noted earlier, the health manpower programme structure prior to 1985 differed from that outlined in the Seventh General Programme of Work. Nevertheless, as reviewed below, many of the activities in the earlier years of the fourth decade were in accordance with the objectives of the new programme.

Managerial process for health manpower development

In a sweeping assessment, presented to the Executive Board at its 57th session in January 1976, the Director-General's report acknowledged that there had been no breakthrough in efforts to alleviate the developing world's manpower problems (1). Programmes were found to be "still too oriented towards the classical types of health workers, primarily physicians and nurses, and even in their training, changes have been all too slow. The acceptance and development of new categories of health personnel and the retraining of existing categories also advance at a slow pace." Furthermore, health manpower plans, if there were any, "are not taken into account either quantitatively or qualitatively by the training institutions, which often do not belong to the same supervisory authority as the planning unit".

In response, WHO outlined a "coherent, integrated and systematic programme of collaboration with Member States in all relevant areas of health manpower development" (2). The central aim of such collaboration was to establish national programmes that integrated health manpower planning, resources development and management into a single process geared towards improving health services. Integrating health services and health manpower development was seen as a precondition for satisfying the health needs of a country's entire population.

Such integration required the health needs of the most deprived to be given priority, particularly in rural communities. This could be achieved by using personnel with the appropriate levels of skills – PHC workers in the first instance – and those who provided effective support and guidance within comprehensive national health systems and services. As a consequence, "a new, strong emphasis will be laid on the training and utilization of auxiliary and community health workers and their supervisors". The number of physicians, nurses and other 'classical' categories of health workers would also have to be increased, but their education would have to be made relevant to community health needs without reducing its basic quality.

The report also identified the need for a permanent, country-specific mechanism to integrate health services and manpower development in order to: foster continuous dialogue; ensure efficient collaboration and coordination between various governmental and nongovernmental

departments, institutions and other bodies responsible for health services and health manpower; and bring them together to plan, make decisions and integrate health services and health manpower development.

In this context, health manpower planning was seen as a “process whereby health manpower development goals, objectives, priorities, and activities are established systematically to ensure that current and future health manpower resources meet adequately the requirement for delivering health services to a population. It consists not merely in projecting the numbers of personnel required but also in planning to provide properly designed health services with the quality and quantity of the personnel they need” (3).

The “weak liaison in countries between health and educational authorities” had retarded progress in this domain for most of the century. WHO’s response was to promote the coordination of health manpower training with a country’s health services requirements, a concept that “was recognized implicitly in the very first years of WHO ...” (4).

In the period 1979–1981, the Executive Board commissioned a study of WHO’s role in public health and health programme management training and established a working group. In a background paper prepared by the secretariat, various study options were presented, including field-testing (5). The Board working group accepted the definition of health management that had emerged from an earlier WHO consultation, namely: health management (or health administration) embraced the whole process of planning, organizing, directing, controlling and coordinating resources (i.e. manpower, money, mandates, facilities, equipment, information and time) for the development of health programmes aimed at improving the health status of the population as a whole, based on community participation, and responsive to the needs of the people. In this context, health management was essentially a system of administrative roles, functions, and tasks carried out by individuals at various levels of administration to improve the health of people. Within and among the institutions that provided health services or otherwise affected health status, appropriate management should seek to ensure: a commitment, on the part of personnel, that the institutions and programmes will serve the people; an understanding, on the part of personnel, that health institutions have a purposeful role to play in the wider health system and, in turn, of the wider sociopolitical system; a working style which encourages the maximum participation of individuals and groups in serving the goals of both the community and the institutions; and a system of accountability, to the community, for the actions taken by the institution and for the results of such actions.

In its final report, the Board working group outlined short- and long-term national strategies for management training, noting many common elements. Short-term strategies addressed: management training for health system reorientation; mobilizing political will; analysing key managerial issues; linking training to PHC; teacher training; and supporting and coordinating mechanisms. The long-term strategies covered: drafting educational policies and legislation; reforming postbasic education; continuing education; management training in basic education; and health systems research. WHO’s coordinating role in helping to develop national health development networks that included management training resources was underlined. Establishing such networks – WHO’s aim was self-reliance in management training – would require WHO to help mobilize extrabudgetary resources, provide fellowships and equipment, and cooperate on request to help form the national group that would assume overall responsibility for management training.

Two interregional consultations, in Bangalore in 1983 and Tashkent in 1985, aimed to strengthen systems for health personnel management. The Tashkent consultation emphasized problems of motivation, and training for effective health personnel management, urging countries to develop training strategies and prepare locally suitable modules to improve performance. The consultation believed it especially important for countries to identify and reduce structural/policy/procedural “dissatisfiers” (e.g. low salaries, poor working and living conditions, lack of continuing education, and non-responsive higher management) and to train supervisors and leaders capable of motivating individual staff.

The technical discussions held during the Thirty-seventh World Health Assembly in 1984 considered the role that universities could play in health-for-all strategies. Owing to the importance of the subject and the Director-General’s judgement that the discussions had been “one of the most successful in spite of manifest trepidation at broaching such a ponderous and sensitive issue”, the results of these discussions were published (6). A series of recommendations were made to universities, governments and WHO. Universities were told they could respond to the challenges of the Global Strategy for Health For All by the Year 2000 by: reshaping their attitude to egalitarian demands of present-day society to identify with critical problems of ignorance, poverty, distress, disability and disease; and restructuring the academic curriculum so that a broad base of fundamental knowledge could be coherently related to contemporary problems, and the fragmentation of disciplines overcome so that health, social sciences, education, engineering, environmental studies, and agriculture could relate effectively to one another. Governments were asked to work with universities to assess the social relevance of manpower training and the universities’ dedication to health-for-all goals, and to provide for the continued education, reorientation and attitude change for all those likely to contribute to health for all. WHO was asked to act as a clearing house for information demonstrating successful action in this area, and to initiate research on national health problems to be carried out by universities.

The Director-General launched the Health-for-All Leadership Development initiative in January 1985. The initiative was based on the premise that the gap between health-for-all policy and implementation could be substantially narrowed if individuals in leadership positions understood more fully the process involved in developing and implementing the health-for-all strategy, pursued its values, and developed the appropriate qualities and abilities to lead the process.

Instructive examples of leadership were collected from a variety of sources with financing from the Netherlands’ Ministry for Development Cooperation and assistance from several nongovernmental organizations, namely the International Council of Nurses, *Medicus Mundi/Misereor*, and the International Federation for Hygiene, Preventive and Social Medicine. Twelve case-studies were examined to assess what was required to develop effective leadership (7). The case-studies fell into three categories: those from Bulgaria, the Dominican Republic and Viet Nam were general accounts of national PHC programmes; those from Cuba, Finland, Papua New Guinea and Somalia were analyses of a sample locality in the national PHC system; and those from Bangladesh, France, Kenya, Liberia and the Philippines were analyses of one or more special PHC projects in each country.

While the functions of leaders were relatively easy to analyse, it was more difficult to define the actions required to make people capable of performing these functions well, especially as the scope to fulfil such functions varied greatly among countries. Certain features of leadership, however, were self-evident. For example, a PHC leader must have an ability to reach out to members of the community and work with them agreeably and productively. A leader must be

sensitive to the many other sectors that influence health and able to cooperate with personnel working in those sectors. The PHC leader must also be able to relate constructively to the vertical levels of the health system, both below and above.

Attention soon turned to how problems and deficiencies in the social aspects of PHC leadership might be addressed. Essential requirements for good leadership were believed to include: adequate resources, especially communication, including transport, and an adequate system of rewards; formal training in management, considered to be “the most complex issue in outlining the requirements for effective leadership in primary health care”; and leadership training through practical exercise.

The case-studies revealed instances where leaders had received no formal management training, while in other cases, those in top leadership positions had received special education in public health or a related discipline that included some managerial training. The value of formal training for the “average person in the average situation” had been examined, however, and certain deficiencies noted, especially in leadership training at the central or national level, where a qualified physician was most often found. Even in cases where physicians had graduated from a medical school with a strong department of preventive and social medicine, it did not mean the physician had received adequate instruction in health systems or health service management. Schools of public health, the academic institutions that normally provided such instruction, were still rare in developing countries. In their absence, countries should consider establishing training programmes in association with a university. Sending students abroad to an industrialized country for public health studies was not recommended, as the course content was “usually quite inappropriate to the developing countries”. Similar considerations applied to leaders located at the provincial level.

At the district level, PHC leaders were most likely to be health workers without a university education, but with abundant experience. To ensure they were competent managers and leaders, they might need to attend a course of instruction lasting several weeks or months, one concentrating on the principles of organization, supervision, communication, personnel, financial affairs and evaluation. At the community level, the leader of a PHC team should visit the district leader for a brief period to learn all aspects of management by day-to-day observation and discussion. It would also be helpful for provincial-level staff to organize intermittent two- or three-day workshops where district- and community-level personnel could discuss selected subjects.

In other action, WHO prepared a bibliography on health personnel management (8), and training modules for countries covering a variety of management topics, including leadership, employment practices, management-staff relations, problem-solving, organizational change, and evaluation (9). A bibliography of WHO and PAHO publications dealing with health manpower development was also produced (10).

These efforts formed the background to a WHO expert committee meeting in Geneva in December 1987 that addressed managing human resources for health (11). The committee discussed overcoming resistance to change, establishing or strengthening an institutional base for personnel management, developing managerial competence, monitoring personnel management, and using research to improve management. These discussions were in keeping with the Fortieth World Health Assembly (resolution WHA40.14) urging Member States to ensure that manpower was not only adequately planned for and trained, but also skilfully managed. Improved career development and incentive schemes would ensure the most effective use of manpower.

The expert committee agreed on several action strategies. These could be specific to a level of the health system or apply throughout the system. The district, for example, was seen as

the most appropriate level to involve the community in planning and implementation, and to improve the coordination of community plans with those of higher levels. It was also seen as the best level to coordinate governmental, nongovernmental, private and traditional health care. The responsibility of the central level was to ensure that the system enabled and encouraged the district level to carry out its role. Fifteen strategies were outlined:

- put health personnel management on the political agenda
- strengthen the coordination of human resources for health and their management
- relate manpower (personnel) planning to personnel management
- enlist the support of professional associations in relation to standards
- provide training and support for decentralization
- improve managerial performance through training
- involve staff in developing objectives and planning action
- mobilize intersectoral action for improving health personnel management
- encourage community involvement in PHC, including personnel management
- improve the living and working conditions of health personnel
- establish appraisal systems to review staff productivity and guide remedial action
- develop a system of continuing education for personnel working in primary-care teams
- strengthen routine personnel administration
- promote decision-linked research on personnel management at all levels
- develop indicators to measure the performance of health personnel management.

The expert committee concluded that WHO would have to progress “beyond a piecemeal approach. Its goal should be to plan and implement a coherent strategy for health personnel management that will result in an improvement in the overall utilization of human and financial resources for health at country level.” Recognizing that managerial improvement was best achieved through local initiatives by the ministry of health and other organizations active in health-care delivery, WHO could offer support, where invited, in several ways. It could: help the ministry monitor the progress of efforts to improve managerial effectiveness; train or help to train district health managers in the necessary skills to strengthen health workforce management procedures; provide technical cooperation for diagnostic studies on improving management support systems, specifically, support systems for personnel management; assist ministry efforts to enhance community involvement; strengthen leadership for health for all by hosting seminars; and help the ministry of health reorganize its structure to introduce meaningful decentralization.

The continuing economic crisis resulted in a decline in the rate of real economic growth in many countries and policies of financial austerity. With manpower costs typically constituting 60–70% of a government’s recurrent health budget, attention turned to the economics of health manpower development. An interregional workshop on this subject was held in Manila in June 1987 with financial assistance from the Government of Japan (12). The objective of the workshop was to “stimulate studies related to the economic analysis of health manpower policies, strategies and plans with a view to improving the mobilization, allocation and utilization of internal and external resources for health”. The workshop brought together 17 participants from 10 countries in three regions (China, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, the Philippines, Sri Lanka, Thailand and People’s Democratic Republic of Yemen). Participants had prepared papers outlining major national issues and problems, and these formed the basis for group discussions.

Several major health manpower development issues were identified as suitable for economic and financial analysis, including: shortages and surpluses of categories of health manpower in different locations and health institutions; poor productivity and inefficient use of different categories of health manpower in various health-care institutions and locations, leading to rising health-care costs; the health professional education system not producing optimal numbers for the appropriate level of training; and inadequacies in manpower planning in all countries.

Participants discussed at length the role of the public and private sectors and the economic issues involved, and their implications for health services. Economic pressures forced governments to examine more closely the management practices in both sectors. Within the debate about public/private sector roles, it was thought that the quest for effectiveness was likely to take precedence over other goals. Allocating resources efficiently was extolled in the private sector, but participants cited a lack of evidence to prove that the private sector was more cost-effective than the public sector. Simple answers to the optimal private/public mix in health care were not available.

The workshop concluded that any efficiency gains should not be at the cost of the overriding priority, namely, equity. While the growth of the private health sector could be seen as a complement, not an alternative, to publicly financed health services, participants stressed the need for diligence: while the private sector might help to introduce technical efficiency to a country's health sector, it might also contribute to inequity. The role of the government was to balance any efficiency gains with well-established objectives for equity in health care.

A major problem for all participating countries was the imbalance in the supply and demand of health manpower by sector, location, occupation and specialty. This problem manifested itself in many ways, including government inability to absorb graduates, and/or to fill established posts, especially in rural areas, resulting in a concentration of health manpower in urban areas. This situation was exacerbated by low salaries and, in certain cases, irregular payment of salaries. The lack of incentives was having a negative effect, not only on the motivation of health workers, but also on the distribution of manpower: health personnel usually refused to serve in rural areas unless adequate compensation and/or incentives were provided. A shortage of specialists in certain disciplines, the unemployment/underemployment of physicians, and the emigration of certain types of personnel were adding to this manpower supply imbalance.

The interregional workshop in Manila also discussed problems associated with productivity, training and manpower planning. Participants agreed that there was a mismatch between job and skill requirements, and the manpower-capital mix, for example; that the professional education system was not producing enough quality graduates; and manpower planning, where it did exist, was often unrealistic, resulting in plans based on the ideal rather than the actual availability of resources.

Participants agreed to pursue country-specific activities, such as workshops, research and strengthening information bases for manpower planning. Participants emphasized the need for relevant organizational support for country activities, including: monitoring and evaluation; exchange of experience; and networking. On WHO's role, participants agreed that the Organization "must continue with initiatives to stimulate studies and other relevant activities in the economic aspects of health manpower development." The means to support country activities already existed: fellowships, consultations, grants for meetings, and support for new and/or existing programmes, for example, and these could be strengthened. The demand by Member countries for activities in this area was expected to grow. While WHO had, to a certain extent, responded to some of these demands, the response "could have been far greater". Other

agencies, such as the World Bank, Asian Development Bank and the United States Agency for International Development, had tried to fill some of the gaps, but WHO, as the primary agency concerned with health, could and “must play a central leadership role”.

Towards the end of the decade, a paper outlining a method to improve national health systems that focused on health manpower development was published (13). It offered a guide to countries that were “contemplating a comprehensive, action-oriented review of health manpower development to improve their national health systems”. The annexes to this publication contained brief accounts of studies carried out in four countries (the Islamic Republic of Iran, New Zealand, Rwanda and Viet Nam) in collaboration with WHO staff. They illustrated the range of information that can be used to carry out manpower studies, the way this information is assessed and analysed, and some of the conclusions that have been drawn from a review of this kind.

The Islamic Republic of Iran, for example, was found to have “a clearly stated health policy and long-term strategy oriented to the goal of health for all through primary health care” with a national health system “perfectly appropriate to Iranian conditions”. Owing to economic constraints, however, their implementation was difficult. Weak health coverage, especially in rural areas, reflected a shortage and uneven distribution of personnel. New family health and disease control technicians were being trained, but in the interim, the government needed to decide which type of health workers should staff rural health centres. It could deploy practical nurses, but this would require their training “be thoroughly reoriented so as to focus on PHC and rural health centres, with emphasis on methods of management”. Training for male and female auxiliaries for health houses could be reduced to one year, with their education continuing while they worked, thereby accelerating considerably their availability. Training capacity could be increased by decentralizing courses to the district level and to health centres, and if there were financial constraints, by possibly “reducing expenditures on education of physicians (who seldom settle in rural areas) and increasing those of the auxiliaries needed to staff the health houses that are planned”.

Health manpower plans needed to be more realistic, with consideration given, for example, to revising “the existing number of categories of health worker. Thus, the need for nurse practitioners *and* associate degree nurses might be questioned. Could they not be replaced by a single category, able to work equally well in health centres, *and* hospitals, reducing somewhat the number of nurses with university degrees?” Also, the medical school programme, in addition to being long (seven years), needed to be revised in the light of the PHC approach, as did the nursing programme at all levels, including the post-basic courses. At the same time, these and other programmes needed to be made more practical and less theoretical. Suggested approaches included: introducing multiprofessional (team) teaching/learning; developing problem-solving capacity; and promoting student learning by putting students in active learning situations instead of passive lecture halls.

To increase health personnel efficiency and effectiveness, several management measures were proposed, including: financial and social incentives for service in rural areas; staff housing at rural posts; a national system of continuing education for all types of health personnel; a career structure for the few manpower categories that did not have one; training in leadership and management; and strengthened supervision at all levels, using standard check-lists based on job profiles.

Health manpower research was needed to track the experience of graduates from different programmes: career choices, drop-out rates, how well they were trained for the tasks they had

to perform. A simple graduate follow-up scheme could form the basis for a much-needed health manpower information subsystem, making it easier to monitor health manpower performance and quality assurance, and improve training programmes.

Formation of health personnel

The Alma-Ata Declaration called for health workers, including physicians, nurses, midwives, auxiliaries and community workers, as well as traditional practitioners when needed, to be available at the local and referral levels, and for these workers to be suitably trained socially and technically to work in health teams to respond to the expressed health needs of the community.

The magnitude of the health-for-all challenge was spelt out by an expert committee that met in Geneva in December 1983 to consider the health manpower requirements for achieving health-for-all through primary health care (14). The roles and functions of all health personnel would need to be redefined. Physicians, with community-related functions, would need to respond to the social needs and demands of the communities, to recognize the multifactorial nature of disease processes and to move from cure to care.

A key challenge was to change attitudes and values towards health for all and manpower development, and the political commitment to both. A community orientation to health care required a “fundamental change in values”, the expert committee said. Not by chance had health sciences schools, particularly medical schools, failed to train their students in people-oriented care; the direction they had taken was consistent with their predominant values. Attitudes would determine the success or otherwise of efforts to invert the manpower pyramid, so that other levels supported community health and other peripheral workers. Reorienting values and attitudes on the scale needed would be difficult, but possible, though any short cuts were doubtful. A new generation took at least 15 years to evolve and that was probably the timescale involved.

The expert committee outlined several ways WHO could help Member States integrate health systems and manpower development. WHO could encourage countries to: give all health workers the training needed to encourage their communities to plan, implement and evaluate their health activities; reorient the values of all health workers from profession-based to people-based; and develop a system for training institutions and health services to be accountable to community councils or equivalent bodies.

WHO's activities in developing health personnel are discussed below under four headings: community-oriented educational programmes; training trainers; continuing education; and community-based health workers. Although each category is discussed separately, all are interrelated, with activities in one field dependent on and stimulating activities in the others.

Community-oriented educational programmes

Several steps were taken at the start of the decade to make educational programmes more relevant to the health needs of communities and the teaching/learning process more effective. The first volume of *Personnel for Health Care: Case Studies of Educational Programmes* was published in 1978 (15). This series aimed to provide information about non-traditional education programmes that were oriented to community health needs, emphasized “active” learning and used appropriate technology.

At WHO's instigation, 19 medical schools in June 1979 established the Network of Community-oriented Educational Institutions for Health Sciences. Each of the schools represented at this meeting in Kingston agreed to work with other institutions to pursue common objectives. They agreed to exchange information, learning material and personnel; organize workshops for the staff at their institutions; share expertise; and participate in research and development activities.

Whereas past efforts to orient medical schools to community needs relied on creating a single department in the school to focus on the community, these institutions offered problem-based learning that addressed actual health problems in communities, thereby stimulating learning and promoting student independence in learning. The schools recognized that being actively involved with the regional health-care system was mandatory if the strategy for change were to succeed. The participating institutions agreed to help other institutions in countries where there was a political intention to introduce innovative training for health personnel. The ultimate goal was to improve health care and help achieve health for all.

The network had expanded to about 40 schools by 1983. The mandate of the network's secretariat, based at the University of Limburg in the Netherlands, was confirmed for another two years at the network's third general meeting in Havana in July 1983. The task forces established by the network organized several meetings in 1984 devoted to community-oriented curricula using a problem-solving approach. At another meeting, held in Maastricht in the Netherlands in October 1984, representatives recommended how schools could increase the relevance of their programmes to community health needs. About 20 of the network-affiliated schools indicated their intention to change gradually from a conventional to a community-oriented curriculum.

Data was collected in 10 medical schools to measure the impact of innovative curricula for health sciences. Preliminary analysis, including a comparison with data from traditional schools, was presented to a meeting in Ismailia, Egypt, in September 1985, and to the general assembly of schools in the network, focusing attention on the encouraging results. Community-oriented, problem-based curricula were also discussed at a workshop organized by WHO and the International Federation of Medical Students' Associations and held in August 1985. A study group on community-based education that met in Geneva in November 1985 stressed the importance of exposing future health workers during their basic training to a range of health service settings, in contrast with the general current practice of training them in a hospital at tertiary level (16). The study group noted that the Network of Community-oriented Educational Institutions for Health Sciences was well-placed to foster an understanding of the concept, but that network activities had to date focused on schools of medicine. The study group hoped its report might help to extend the network's scope to the other health professions, particularly those fundamental to the PHC approach.

The report on the 10 innovative medical schools, which was initiated in 1984, was published in 1987 (17). The study sought to answer the following questions: to what extent and in what ways were the 10 study schools implementing community-oriented training programmes; to what extent and in what ways were they implementing problem-based learning; to what extent was a problem-based approach contributing to the objective of community orientation; what impact did these schools have on PHC; what impact did they have on the education of health professional; and how did the characteristics of these graduates compare with those of the graduates from more conventional schools and reflect the innovative characteristics of the institutions themselves?

The schools' efforts had some important consequences: all 10 reported that their teachers and students had provided health care, a majority reported an improvement in the quality of care in the communities that they served, and most reported that their work had resulted in increased numbers of health personnel being available. Furthermore, policies related to PHC were influenced by the schools, as had the availability of basic medical services. However, the schools seemed to have had less influence in creating new public health programmes than might have been expected.

The schools influenced the education and training of personnel in other schools. Their graduates exhibited characteristics consistent with school goals wherever an assessment had been made. Graduates of the innovative schools compared favourably with those from traditional schools in their attitudes, grades and overall abilities. In general, there was sufficient evidence that the innovative schools were having an impact on health systems and on the education of health professionals to warrant a systematic longitudinal study.

The report also concluded that: a major effort was needed to train a core of leading staff picked from the all schools involved, from which member schools could recruit first- and second-generation leaders; schools should provide more direct services exemplifying the type of work and the work settings they expected their graduates to embrace; the community and all its health facilities should be used more extensively and consistently as a learning environment; and if community-oriented education for health personnel were to be problem-based, selecting high-priority health problems as the basis for curriculum development was crucial.

Despite these positive developments, the president of the World Federation for Medical Education, Professor Henry Walton, told the Executive Board in January 1986 that "medical doctors were often failing to make the necessary and appropriate contribution to the provision of health care. All authorities agreed on the urgent need for a re-examination of the tasks which medicine had to meet at the present time, the changes in medical education which were now imperative if medical doctors were to regain relevance and credibility in the health care services of nations."

A workshop cosponsored by WHO and the International Council of Nurses (ICN) was held in Nairobi in September 1979 to define the role of nurses in planning and implementing PHC. A framework for a plan of action was drawn up to enable ICN member associations to promote and support PHC at national and international levels. Information was gathered on how these associations could collaborate to develop and implement their countries' strategies for achieving health for all. The ICN congress in 1981, attended by 6000 nurses, further promoted awareness of this concept by adopting the theme 'Health care for all – Challenge for nursing'.

An informal working group, representing national personnel, WHO collaborating centres and nongovernmental organizations, was sponsored by WHO to devise strategies to increase the contribution of nursing/midwifery personnel to national plans of action, and to emphasize the reorientation towards PHC of nursing education, nursing services and continuing education. The working group outlined the technical support that would be required at national, regional and global level, and from WHO collaborating centres and nongovernmental organizations.

Guidelines were developed and field-tested in 1981, showing how curricula should be revised so that nursing education focused on care of health rather than care of sickness. The guidelines were initially tried out at the School of Nursing of Chulalongkorn University in Bangkok, followed by schools in Colombia, Israel, Jamaica, Malaysia, Nigeria, the Philippines, the Republic of Korea, Spain, Switzerland and Zimbabwe.

Following the adoption of resolution WHA36.11 (see below), country case-studies in 18 Member States showed that nursing/midwifery personnel were engaged in direct care and

curative activities, mainly in institutions. Not infrequently, they provided services to other health professionals and in running the institutions, rather than to patients, families and communities. In no Member State was more than 10% of its nursing/midwifery personnel working in a non-institutional setting, and of these, an average of 70–80% were of auxiliary grade.

Following extensive collaboration and cooperation between the informal working group, nursing institutions and others in several countries, a guide was written, outlining: how nursing could most effectively meet the health needs of the population; what changes were needed in nursing education; and how the necessary changes could be made (18).

A four-phase process was described: reviewing the curriculum for community health emphasis; developing the plan for change; implementing the plan for change; and evaluating the plan for change. Protocols were offered for providing care to individuals, families and community risk groups in the context of PHC. The example was given of how one school of nursing had used the guide to review its basic curriculum. In that example, the entire faculty had shown great enthusiasm to cooperate. The heads of all educational programmes were actively involved from the outset, and senior students also had expressed strong interest. An examination of the curriculum showed that while the theory component included a great deal on PHC, the clinical experience focused on the traditional nursing role. Furthermore, the school's objectives did not incorporate self-care, training PHC workers and community participation. Data, collected mostly by teachers completing extensive reporting forms, provided clear evidence that the theory components of the course had produced better scores than the practical components in each content area.

The review indicated that the school objectives needed revision, with self-care and community participation needing special attention. Out-of-hospital practice needed strengthening in almost all content areas, particularly in primary care of common health problems. Individual courses with potential for improvement were identified and steps taken to develop a plan for change.

The educational programmes designed specifically to train graduate nurses to assume expanded responsibilities, as nurse practitioners, were a great success. In the Region of the Americas, country case-studies demonstrated that employing properly trained nurse practitioners could be a cost-effective approach, and that they could be a significant resource for extending PHC.

A study group met in Geneva in October 1987 to explore how students from different health professions might come together to learn the skills needed to solve the priority health problems of individuals and communities that were known to be conducive to teamwork. The study group's report was titled *Learning Together to Work Together for Health* (19) and explored those aspects of multiprofession education that were considered essential to its success. These included: the degree to which educational planning was coordinated with the health services; the way in which intersectoral links functioned in both education and health care; the means by which the education and health sectors promoted and supported community involvement; the degree to which sound educational principles were respected; the extent to which students were encouraged to carry out research projects; and the importance accorded in the curriculum to the ethics of health care, to competency- and problem-based learning, to providing a balanced variety of education settings, and to the valid measurement of graduates' performance. The conditions for success were explored, along with difficulties and constraints. An approach to designing and launching a multiprofession education programme was outlined, drawing on relevant, ongoing experiences, such as "the establishment of a network of knowledgeable persons", "decision-linked research", and "experimental innovative track strategy". The report

concluded with recommendations on how multiprofession education could be promoted by training institutions and professional organizations, and by joint action by educational institutions and ministries of health and education.

Training of trainers

By early 1978, more than 700 workshops, involving more than 15 000 participants, had been held since the global teacher-training programme had been launched in 1969. This programme aimed to establish, in stages, interregional, regional, national and institutional centres to make the teaching/learning process for health workers more relevant to the needs and demands of the population as a whole. Six of the eight centres were still operating as regional centres. The centres in Kampala and Yaoundé were redesignated as national centres, of which there were many others: in Manila, Pondicherry (India) and Seoul, for example. Centres had been established in training institutions throughout the world and their numbers were growing.

As an aid to the teacher-training workshops, the *Educational Handbook for Health Personnel* was further field-tested and revised on the basis of feedback from users (20). A survey on the use of learning objectives was carried out in institutions training nurses and physicians, with the collaboration of the ICN and the World Federation for Medical Education. The purpose of this survey was to learn which institutions had established a list of general educational objectives for the type of personnel they were training and to what extent those objectives were relevant to the assessed health needs of the population to be served.

In view of the recognized shortage of teaching personnel, particularly in developing countries, the possibility of using students as instructors was investigated. A consultation was convened in Geneva in December 1978 to review the potential of peer learning. Two documents were prepared to help teachers make students more effective instructors: one was to serve as a guide for testing in several training institutions in developing countries; the other was a review of peer-learning experience (21).

Several steps were taken to rectify the shortage of learning materials for training health workers. An interregional programme was established with United Nations Development Programme assistance, complemented by two regional programmes, to promote national self-reliance in producing teaching and learning materials relevant to health services and community needs. Library books – one thousand sets in English and 500 sets in French – were assembled and dispatched free of charge to health teams in developing countries during the 1978–1979 biennium. Each set, comprising several dozen books, came with a teacher's guide that had been extensively field-tested. In close cooperation with the United Nations Children's Fund (UNICEF), nine manuals for the REMEHA (reference materials for health auxiliaries and their teachers) collection were translated into Portuguese for distribution in Portuguese-speaking African countries. The REMEHA project, initiated in 1972, was already distributing materials in English, French and Spanish.

The interregional clearing house of the programme, in addition to stimulating and developing country plans and helping to obtain external funding for national projects, helped open dialogue between participating countries and a free exchange of teaching/learning materials from all over the world. A workshop on audiovisual materials in health teaching was conducted in June 1983 to identify needs and low-cost sources of these materials (22).

An expert committee met in October 1983 to consider PHC education and training for nurse teachers and managers (23). It focused on areas where changes were needed and where they were already taking place, and on factors influencing those changes, including attitudes and values, leadership, the siting of educational programmes, research, and nurses as agents of change. The committee recognized the “urgency of orienting nursing personnel to primary health care ... and affirmed that the reorientation of post-basic education of nurse teachers and managers was central to this development and should be accorded priority”. The Board discussed at length this report in January 1985. It led Dr Mahler to indicate that WHO was “not sufficiently active” in this field. Indeed, he added, “there was a great deal of ‘medical chauvinism’ in WHO which was making the issue very complicated ... if WHO was serious about primary health care, it was indeed time that they [nurses] were brought in much more than hitherto, not for the sake of professional chauvinism as nurses, but fairly and squarely as leaders and managers of the primary health care/health-for-all team, together with others”. In resolution WHA36.11, the Thirty-sixth World Health Assembly in 1983 called on Member States, with support from WHO, to provide nursing/midwifery personnel with adequate training in PHC, its management and appropriate supportive research to equip them more effectively with the means to implement national health-for-all strategies. What followed with regard to nursing is discussed further below.

Several WHO activities focused on preparing teachers of community health workers and helping them recognize their own strengths and weaknesses. A guide was prepared to assist them in this regard (24). WHO also collaborated in planning, implementing and evaluating teacher-training workshops in all WHO regions, using the educational handbook for health personnel (20).

The WHO regional teacher training centre in Sydney held a workshop on designing training programmes, with participants from 11 countries going on to conduct similar national workshops. Those in China were dedicated to educational methodology for training personnel for PHC and family planning. A methodology designed in the Region of the Americas for analysing educational institutions and programmes was used by more than 150 of the region’s schools for health personnel to review academic and administrative conditions, and to seek options for reorientation within the framework of the health-for-all strategy. In the European Region a workshop on educational and managerial strategies was held in London and Moscow in September 1987. In the Eastern Mediterranean Region, national teacher training centres were established in Afghanistan and the Islamic Republic of Iran. In the Western Pacific Region, teacher training workshops were organized in the Lao People’s Democratic Republic and Viet Nam, and support was given to national centres in Malaysia, the Philippines and the Republic of Korea.

Continuing education

Continuing education was believed to be particularly important to retaining primary health personnel where their services were most needed and in reducing the migration of trained personnel. Each of the regions developed programmes that promoted continuing education as part of good health manpower management.

A programme on continuing education in the Region of the Americas was jointly supported from 1978 onwards by PAHO/WHO and the Canadian International Development Agency in seven countries, with the community health training programme for Central America and Panama serving as the reference centre. A meeting in Washington, DC, in 1983 explored the

possibility of coordinating continuous education programmes and establishing a regional network to exchange experiences and share resources.

In the European Region, a consultative meeting, held in Copenhagen in May 1980 to review recent developments in continuing education, stressed the importance of teacher training. It prepared the programme for a seminar in San Remo, Italy, in 1981, which brought together administrators responsible for planning such programmes and representatives of national health services and health training institutions. Participants discussed how health services and professional associations could promote a systematic programme of continuing education that would reorient and reinforce PHC services in line with the regional strategy. They also debated the best means to implement the elements of that strategy at country level, particularly the promotion of healthy lifestyles, providing adequate and accessible health care services, and assessing the contribution of various levels of management, and the relationship of those levels in a system of continuing education.

The theme for the General Assembly of the Association of Schools of Public Health in the European Region, held in Lisbon in 1983, was 'Health systems of the 90s; preparing people for new approaches: the role of schools of public health'. WHO held a workshop in Lisbon on the role of schools of public health in continuing education for PHC. A follow-up consultation on continuing education and multiprofession training, held in Copenhagen in October and November in 1984, led to a plan of action to place continuing education within national health-for-all strategies. A national system of continuing education that ensured all categories of health personnel had the opportunity to continue learning throughout their careers was required (14). Continuing education needed to be organized as a system because it required a comprehensive approach, involving a diversity of considerations and decisions being made in various sectors. It also required plentiful support, expertise and resources that could seldom be provided by a single institution in any country.

WHO prepared guiding principles for developing national systems of continuing education, which were tested in several countries during workshops for national health planners and educators. Several national and intercountry meetings and workshops were sponsored in the different regions. These gatherings stressed the importance of problem- and job-oriented education programmes that provided progressive learning through a diversity of teaching methods (e.g. self-instruction, improved supervision). A workshop manual on how to develop a system of continuing education for health workers was published in 1988 (25).

Community-based health workers

It was recognized that the types of health workers in communities would vary by country and community, according to needs and the resources available. For many developing countries, the most realistic way to achieve total population coverage with essential health care was to employ community health workers who could be trained in a short time to perform specific tasks. Other possible local health workers included traditional medical practitioners, birth attendants and members of the family, in particular women, in view of their central position in the family.

A guide for training and using PHC workers was first developed in 1974. After being field-tested in several countries, an experimental edition on training primary (now community) health workers was modified in light of more information from the users, and a revised edition was issued in five languages: Arabic, English, French, Spanish and Russian (26). The experience

of PHC workers was that their success depended “crucially on the support and supervision they receive”, so a guide was prepared to help improve the way health care systems were managed, particularly at the middle level (27).

Case-studies were carried out in 13 countries as a follow-up to a WHO/UNICEF-sponsored workshop in Kingston, Jamaica, in 1980. The major topics discussed at the workshop were the tasks and functions of community health workers (CHWs), and their selection, recruitment and training, remuneration, career prospects and support services. Following an extensive review of these studies and the literature on CHWs, it was concluded that “major problems” remained (28) in all areas being studied. There was a “lack of detailed national planning of CHW programmes in the way that takes cognizance of all aspects of such programmes and the changes that have to occur at all levels for them to be successful”. Many programmes were still at the pilot stage and their results had not yet fed into the national planning process. Although there was a good deal of literature on the CHW, there was not enough systematic sharing of experiences. Areas where there was scant information included: the number of CHWs trained by countries; attrition rates; effective coverage of the CHW; the cost of training, utilizing and supporting the CHW; and legislative reforms needed to give recognition to the CHW.

Investigators in six countries – Bahrain, Kenya, Mozambique, Poland, Sri Lanka and Cameroon – devised procedures to assess how health workers and students were performing. The theoretical basis for this research and its practical lessons it delivered were published in the form of guidelines. Other guidelines to assist training programme administrators select candidates most likely to benefit from training reoriented to the PHC approach were tested in Australia, Burma, Mozambique, the Netherlands, the Philippines and Thailand. WHO published material describing these improved selection procedures (29).

Reports from Burma, Botswana, Ecuador, Islamic Republic of Iran, Malaysia, Niger and Thailand showed that community health workers with limited formal education and medical training could use basic epidemiological tools effectively. Such workers were able to recognize unusual events, such as a high number of undernourished children, many pregnant women suffering from jaundice, high fever and subsequent death among new arrivals in an area, the outbreak of diarrhoea, fever and rash, and seek solutions. One example of technical support from a higher level of the health services for epidemiology work included the consolidation of data from all health units in the ‘operation room’ of a district health office in Malaysia, enabling the health team to draw practical conclusions for programming activities. Real-life examples demonstrated that community health workers “do think logically about the more important kinds of health and health care events that happen in their community and use the knowledge thus acquired for their own work” (30).

The decade ended with a study group meeting to review achievements, problems and controversies and to decide on future strategies for community health workers (31). While CHW programmes had been successful, problems had arisen, such as their separation from other health programmes and uncertainty over the CHW’s role. The study group accepted the definition of the CHW that had been proposed at an interregional conference in Yaoundé, Cameroon, in 1986, namely, that they should be “members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have a shorter training than professional workers”. The review “left no doubt that CHWs play a critical role in the promotion of people’s health, and that their effectiveness can and needs to be enhanced”. However, most countries had no clear national policies or strategies to establish

CHW programmes. If governments continued to spend a high proportion of their health budgets at the tertiary level, it was unlikely they would have the resources to cover the costs of PHC services, let alone provide financial incentives to CHWs. Countries were advised to critically examine the performance of CHWs in accordance with community health needs, available support and resources; and to continue to encourage nongovernmental organizations to support CHW schemes and develop innovative strategies that could guide government CHW programmes. WHO, on the other hand, was asked to consider intensifying its efforts in collecting and disseminating information on CHWs; to promote the establishment of new CHW programmes and operational and applied research on CHW schemes and district health systems; and to encourage better understanding and support from health professionals, who generally had not always supported CHW programmes.

The first paper on PHC presented to the Executive Board, in January 1975, called for services organized by the government to be harmonized with those traditionally available to people, such as traditional birth attendants and herbalists. The role of the traditional birth attendant in maternal and child health and family planning was the subject of a training guide published later that year (32). In 1979, a new field guide to their training was published. This was not intended to replace its predecessor but to provide a systematic framework for planning, implementing and evaluating programmes for training and utilizing traditional birth attendants (33). Furthermore, the new guidelines explained how to effectively link training programmes with the organized health system by continuous coordination with training institutions and referral centres, and by formulating appropriate official policy. In 1982, a trainer's kit was prepared for instructors, comprising a practical description of training strategies, an indication of simplified technologies that could be used in maternal and child health care and family planning, and a guide to producing low-cost teaching/learning materials.

A study on training and utilizing traditional birth attendants was carried out in the Eastern Mediterranean Region following two workshops, and three Member States subsequently received help launching national training programmes. Case-studies were carried out in eight countries – Ecuador, Honduras, the Philippines, Senegal, Sierra Leone, Sri Lanka, Sudan and Thailand – showing how constraints on the training and utilization of traditional birth attendants could be resolved. Seven of these case-studies were written up (34), and an annotated bibliography on training, utilizing and evaluating traditional birth attendants was issued in late 1979.

Seven years after Alma-Ata, it was noted that legislation promoting the use of traditional health practitioners had been slow to develop, despite growing evidence of their utility. WHO arranged a consultation in New Delhi in 1985 to identify what was impeding, and stimulating, the use of traditional health practitioners in PHC, and how such workers could be motivated to participate in national efforts to extend health-care coverage. WHO commissioned country case-studies from India, Mexico, Sri Lanka, Sudan, Thailand, the United Republic of Tanzania and Zimbabwe.

These experiences made it clear that incorporating traditional practitioners into health systems based on the PHC approach would require a well-defined government policy, supported by legislation and disseminated widely. In those countries where such policies did not exist, it would be necessary to: identify practitioners; review existing laws and policies; consider creating an association of traditional practitioners to enable them to collaborate collectively and individually with different government bodies; gain a better understanding of traditional practices; develop training programmes covering detection and diagnosis of disease, prevention and public health activities, basic hygiene, family planning, immunization, diarrhoea control, and possibly simple

surgery; develop small-scale experimental projects; conduct action research to further the success of these projects; and secure financial support.

A book on the potential of the traditional birth attendant was published in 1986 (35). The trainer's kit, issued in the 1984–1985 biennium, proved so popular that, after further field-testing, it was revised to emphasize the most relevant, effective and simple teaching/learning technologies.

The role of women as care providers, though long recognized and appreciated, did not seem to receive serious attention until the United Nations Decade for Women (1975–1985). WHO initiated several projects, including a multinational study, in an effort to better understand and improve the status of women as health professionals. In 1981, the first WHO-sponsored consultation on women as health-care providers identified priority issues on this subject (36). During the second such consultation, participants discussed what should be the main elements of a national strategy to achieve the long-term aims of the project (37). An annotated bibliography on the subject followed (38). Several participating countries took action. In Thailand, for example, a national seminar promoting women's efficiency and effectiveness as health-care providers was held in December 1983 and led to a general plan of action that included proposals for: handbooks, slides, posters etc. for trainees and housewives to be produced/duplicated on such subjects as nutrition, environmental sanitation, first aid and basic nursing care, family planning, child care and personal hygiene; a public relations campaign for the project; training for trainers; meetings in each of the five regions of Thailand to distribute responsibilities described in the plan of action; community leaders to meet in each of the six provinces; and training target groups of women (e.g. housewives, female workers, rural female youth and female students). A compilation of several WHO documents on the role of women as care providers was produced in one volume in 1985 (39).

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Public information and education for health

WHO's activities in public information and health education were combined in 1982. Such activities aimed to encourage people to be healthy, and know how to stay healthy, to act individually and collectively to maintain health, and to seek help as needed. These efforts were intimately linked with health interventions, ranging from specific disease control to developing effective health-care delivery systems using the PHC approach, and with health promotion measures emphasizing positive and healthy ways of life. They relied on community-based activities designed to protect and promote health, combined with advocacy at the operational and international levels. The latter approach involved mobilizing public opinion in support of health-for-all strategies by using the media to open dialogue between the health sector and the public.

Before the two programmes were joined, health education had been an integral part of the family health programme, while public information was an arm of the health information programme, where it worked with the media to: mobilize public opinion in support of the objectives of WHO and its Member States; promote greater consciousness of the role of individuals in maintaining their own health; and cooperate with Member States and inter-governmental organizations to introduce health information and education programmes for the public. Details of these activities are incorporated in subsequent chapters as they relate to specific programme elements.

Most Member States did not consider public information and health education part of the managerial process for national health development, let alone give it a central place in the planning process for programme action. The Global Strategy for Health for All through the PHC approach was judged at mid-decade to be inadequately promoted at national, regional and global levels; it was poorly understood, not only by the public, but also by many health administrators. Activities were carried out mostly on an ad hoc basis, either as an accompaniment to disease control campaigns or to get health programmes out of difficulties. The scarcity of well-trained professionals in public information and health education was a serious handicap to formulating policy, developing strategies and training personnel.

The expert committee that met in 1982 to examine health education noted that the approach often remained “paternalistic and commandment-like”, with administrators believing that watching a film, seeing a poster or listening to a talk would “lead the individual along the right path”. These administrators insisted on using the same methods that had been successful in disease-control campaigns, but the coercive approach often used in dealing with epidemic or parasitic diseases was not appropriate in dealing with personal hygiene, breast-feeding, smoking, alcoholism, overeating, or excessive use of medicaments. Rather than trying to understand the needs of individuals and communities and help them to reach goals of their own choosing, many health professionals tended to encourage people to want “what they themselves think people should want”. Even when health professionals and social scientists tried to understand

the concerns of the community they served, seldom did they consider the appropriateness of the technology they were offering to the people, and rarely did they pay adequate attention to the relationship between the community and the health services (1).

The expert committee urged a realistic approach to planning, management and research in health education, giving priority to areas where maximum return could be expected and where the felt needs of the people coincided with epidemiologically assessed needs.

Public information and health education topics were the focus of the technical discussions at the Health Assembly and regional committee sessions in all six WHO regions in 1983. More than 300 delegates took part in the Assembly's discussions on 'New policies for health education in primary health care'. The consensus was that new policies in this area should clearly and unequivocally recognize the need to involve the community actively in health planning, and that health was not merely a medical issue, but involved environmental, cultural, political, social and economic factors. National policies should prioritize the coordination of public information and health education with education in general, recognizing that these components must be mutually supportive and that health education in schools, at all levels, was essential to developing PHC strategies.

The technical discussions identified three types of health education: *predisposing health education* to encourage self-study of basic health needs, and individuals, families and communities to become involved in planning for health; *enabling health education* to help specific health programmes or services achieve their goals through the necessary behavioural changes; and *reinforcing health education* to support health actions being incorporated into self-care and community involvement.

Immediately following the technical discussions, a consultation was held in Geneva in late 1983 to advise WHO on the role of education for self-care in the Organization's Global Strategy for Health for All (2). In his opening address, the Director-General said there could hardly be a more resounding justification for the scientific consultation on this subject than a statement included in the Alma-Ata Declaration: "... people have the right and duty to participate individually and collectively in the planning and implementation of *their* health care (emphasis added)".

The consultation participants took self-care in health to refer to the actions that individuals, families and communities took to enhance health, prevent disease, limit illness and restore health. These actions were driven by the knowledge and skills of both professional and lay people. They were undertaken by lay people on their own behalf, either separately or in collaboration with professionals.

The discussions and recommendations were organized around four subject areas: policy in support of self-care; the role of education; the impact of professional care; and a research base for informed policy and programme development. Public policies in support of self-care should aim to demystify health care, creating enabling environments in which people could more readily promote their health and care for themselves during illness. This meant, first and foremost, that resources for health care systems should not be concentrated on disease-oriented professional approaches to health care, but on systems that provided more information and transferred technical skills to the lay population; systems that provided relevant support services for family care and viably integrated lay and professional care.

To promote health literacy, the content of a self-care education programme might aim to: promote effective and inexpensive home remedies and preventive traditions, such as breastfeeding, herbal and other traditional treatments, homemade crutches and artificial limbs; improve and build upon traditional forms of healing and prevention, especially where resources and

health services were limited; help people learn to weigh risks and costs against benefits, and to understand the range of options available to them; help people to recognize their own capacities, and limitations, and know where and how to seek assistance; exploit available resources and information from verbal and non-verbal teaching materials or from community health workers.

Given that professional attitudes towards health, disease and care were formed during training, an altered approach to self-care in the educational programmes of health professionals was crucial to enhancing lay health care behaviour. One way to make such a change was to define medical, nursing and other types of professional care, specifically in the context of self-care, as services that supplemented an individual's health promotion and health care behaviour in illness.

While a great deal was known about the volume of self-care practices in various national settings, little was known about the content and effectiveness of self-care. Similarly, there was limited knowledge about the factors that determined the type and extent of self-care. Collecting valid and reliable self-care data, therefore, became a priority at this stage in the development of health service systems. Analytical studies were needed to help identify the factors that shaped self-care behaviour and their relative contribution to alternative patterns of care. The content of training programmes for professional health workers and professional behaviour in treatment settings needed to be taken into account in this regard. Evaluation research needed to assess the content of the care and the effects on self-care of professional care and public policies. Member States needed to monitor their laws, administrative procedures, professional practices and mix of professional services to assess their impact on self-care patterns in various groups. Policy studies needed also to examine the impact of self-care programmes on subgroups of the population, such as disabled persons.

Following the technical discussions, a process was outlined that identified some of the key stages at which information and education for health were applicable to the three levels of health education (3). In the community, health education should aim to: help increase self-reliance and healthy lifestyles by providing continual feedback on progress; focus on the social supports to health, including organizational, economic and environmental factors; help coordinate and harmonize health communications from the various sectors to reinforce their impact; provide training in health education to workers from other disciplines; and encourage communities to develop funding schemes for health development. At the individual and family level, health education should similarly encourage analysis and help set priorities, develop self-reliance and evaluate progress. Vis-à-vis the decision makers, health education should aim to: integrate with suitable developmental activities in other sectors, such as education, agriculture, industry, women and youth organizations; provide evidence of progress to reinforce political commitment to PHC concepts, and support the principles of community self-reliance and involvement; and stimulate policy support for the type of research, training and media development that would enable it to perform effectively.

The concept of healthy lifestyles was developed most extensively in the European Region (see Chapter 4). Health education and lifestyles formed one of three areas of special concern in the regional health-for-all strategy, which called for three types of activity: health promotion, preventive health education, and supportive health education (4). The concept of lifestyles was seen as requiring sociological, socio-psychological and socio-epidemiological investigations to prove its utility for specific health promotion programmes. With financial and organizational help from the Federal Republic of Germany, a meeting on lifestyles and living conditions, and their impact on health, was held in Höhr-Grenzhausen in October 1982 (5). The meeting recommended that WHO continue to refine the lifestyle concept, taking particular account of

secondary analyses of research projects and data relevant to health and lifestyles. WHO was asked to promote and spread the lifestyle concept by organizing and participating in conferences, seminars and workshops on health promotion and health policy. National and international networks of health policy-makers, educators and scientists should be established to support national development programmes for health promotion and lifestyles. Research on socio-epidemiology should be developed at national level, and ideas and experience on theoretical and methodological concepts exchanged within the European Region.

The work on lifestyles was incorporated into a new health promotion programme established in January 1984 by the WHO Regional Office for Europe. As part of the continuing process of programme development, a working group met in Copenhagen in July 1984 to discuss 'concepts and principles in health promotion' (6). Health promotion was seen to enable people to increase control over, and improve, their health. Health, seen as a resource for everyday life, was a positive concept emphasizing social, personal and physical capacities. By involving the population as a whole in their everyday life, rather than focusing on people at risk for specific diseases, health promotion was directed at the determinants or causes of health. It required the cooperation of sectors beyond health services, and combined diverse, but complementary methods or approaches, including communication, education, legislation, fiscal measures, organizational change, community development and spontaneous local activities against health hazards.

The Regional Office for Europe, cooperating with the Government of Canada and the Canadian Public Health Association, organized the International Conference on Health Promotion that was held in Ottawa in November 1986. The outcome of this conference was the Ottawa Declaration (see below).

Efforts to strengthen national capabilities in public information and health information were supported by studies and research focusing on the need to: identify factors that promoted or inhibited community participation; determine the impact of lifestyles on health; identify the social, psychological and cultural determinants of health behaviour; and ensure research findings were acted on. Developing indicators to assess the effectiveness of public information and health education in promoting self-reliance and community involvement was another key activity.

Through films, radio and television programmes, photographic displays, written features, the "point-of-fact" series of publications, brochures and a variety of other media activities, information on WHO's Global Strategy for Health for All was disseminated as widely as possible. Efforts were made to inform the public of the implications of PHC, the progress made, and the difficulties encountered. *World Health Magazine*, with a combined monthly circulation of about 130 000 in English, French, German, Portuguese, Russian and Spanish (plus a circulation of 6000 in the quarterly Arabic edition), covered the broad spectrum of WHO's activities (see Chapter 16).

These efforts led to a growing number of health ministries taking steps to strengthen their national communication strategies and work with the mass media to seek a deeper commitment by policy-makers to the health-for-all goal.

In an effort to recruit the media as a partner for health, and orient and train media personnel to handle complex health and scientific issues, especially in developing countries, seminars and workshops were held, some with support from the United Nations Educational, Scientific and Cultural Organization, the United Nations Development Programme and the United Nations Children's Fund (UNICEF). Officials from both policy and operational levels of the health and media sectors participated. Inter-country and national workshops were also held on promoting cooperation between information and education. In all of these meetings, the emphasis was on media personnel recognizing their own responsibility for health.

At the UNICEF and WHO intersecretariat meeting in Geneva in March 1984, it was suggested that the time was ripe for a joint review of the organizations' policies and their support to national efforts to strengthen the information, education and communications components of PHC. As a consequence, a joint review was undertaken for presentation to the UNICEF/WHO Joint Committee on Health Policy meeting in 1987. A preliminary review was carried out by a consultant; this was discussed during the 1985 session of the Joint Committee.

The background paper prepared for the 1985 session was divided into four areas: discussion and clarification of terminologies used by the two agencies; major issues facing information, education and communication for health, as planned and implemented in countries at community level, with particular emphasis on developing countries; activities and issues in this area of work, supported or undertaken by the two agencies; and practical suggestions for the agencies to make systematic efforts to support effective information, education and communication for health programmes (IEC) in developing countries (7).

Health education and project support communications (PSC) were sometimes regarded by both agencies and governments as "marginal activities", but when projects failed, it was often the communications or education components that were held responsible. Health educators were often expected to mobilize support for projects that communities had not necessarily been consulted on. They also had to cope with the technical prejudices of other health professionals, the water and sanitation engineers, the doctors and the nurses. Misconceptions about the roles of PSC officers and health educators often limited them functionally and structurally.

For the two organizations to offer systematic support in this field, it was suggested they work with developing countries to establish the bodies that would help to plan, monitor and evaluate strategies for IEC. Networks should be created, comprising contacts from voluntary groups, consumer associations, trade unions, mass organizations, even sections of industry and institutions, such as adult education centres. Multisectoral workshops in countries could help catalyse such groups in PHC activities, and encourage lay self-help groups to strengthen links with nongovernmental groups working in this field in order to develop new attitudes and broader approaches to PHC. The two organizations were to encourage exchanges of experience at all levels as a matter of priority. Staff development and retraining were needed to raise consciousness of the new approaches in information, education and communication. Headquarters staff needed to adopt advocacy roles towards their own regional and field staff, while seminars should explore and translate skills in mobilizing experiences from other sectors. Training curricula should be reviewed to strengthen advocacy, planning, management, evaluation and communications components.

The Joint Committee declared IEC a matter of the highest priority and urgency for both organizations in their efforts to help countries attain health for all, particularly through interventions such as the Child Survival and Development activities. Societal changes in recent decades, including the advent of communications technologies, offered new opportunities and challenges: from mobilizing different levels of support to allocating resources, and from stimulating awareness and demand to educating and involving the community. The Joint Committee felt IEC deserved a central place in the planning process for programme action.

Immediately following the 1985 Joint Committee session, WHO and UNICEF invited participants from 21 countries to an International Consultation on Health Education for School-age Children, which was held in Geneva in October 1985. The assembled group was deliberately diverse, both in origin and expertise. Developing and developed countries were

equally represented, as were the health and education sectors. In addition, there were participants experienced in communications, behavioural science and public administration. The group focused on the complexity of health learning for school-age children, assessing the state of health education activities for school-age children, and proposing strategies and guidelines to strengthen health education in countries and communities (8).

Participants heard and discussed a series of presentations on approaches to health education for the school-age child. Some of the papers described in detail specific programmes, while others addressed principles and experiences in an area of interest, such as family life education, or a particular communication channel, such as the mass media. There was a general consensus that in most circumstances, teachers were more likely than physicians and nurses to be responsible for educating children. While educators tended to give health a low priority, the Malaysian experience was an example of two sectors working together, with the Ministry of Education assuming responsibility for health instruction and the Ministry of Health for school health services. Both sectors were jointly concerned about healthful living, healthful school environments and school-community relations. A comprehensive health appraisal was made on primary-school entrance (age six), primary-school departure (age 11) and secondary-school departure (age 14) (9).

The ideas embodied in the Child-to-child Programme, initiated in the UK in 1978 and adopted in at least 70 countries, were based on the observation that young children in most developing countries spent a great deal of their time caring for younger siblings. Teaching them sound health principles could help them perform this task more effectively (10).

At the conclusion of their consultation in Geneva, the group produced an overall goal for health education for the school-age child, a set of broad strategies to achieve this goal, and several guidelines and approaches for carrying them out. The goal was to enhance the health-learning of the school-age child in every possible way to promote self-reliance, social responsibility and a better quality of life for today's children and tomorrow's adults. Strategies included defining and developing health education in ways that recognized and sought to integrate all the avenues through which children learn about health; collaboration by the national institutions and resources that affect or might affect children's learning about health; and developing the political will to deal effectively with the health-learning of school-age children. Guidelines addressed: the need to carry out situational analyses; research, documentation and evaluation; intersectoral collaboration; integrating health education in school curricula; strengthening human resources for health education; and developing teaching materials.

Throughout WHO's fourth decade, cooperation expanded with professional and nongovernmental organizations in the areas of training, orientation and research activities in health education, and communication. This was reflected in new collaborations with: the regional bureaux of the International Union for Health Education; the University of Alabama (Birmingham) John J Sparkman Center for International Public Health Education; the Asian Mass Communication Research and Information Centre; the Asia-Pacific News Agency; and the Union of National Radio and Television Organizations of Africa.

An international conference on strengthening health sector communication and education, sponsored by the Sparkman Center, was held in Mexico City in 1985. This conference produced criteria and guidelines for communication and education training modules for various levels of health personnel. Regional workshops in South-East Asia (Jakarta, December 1985) and Africa (Yaoundé, December 1985) were subsequently held to draft modules, with country-level action planned for the following years.

Strategies for information, education and communication for health (IEC) were again considered by the Joint Committee at its 26th session held in Geneva in January 1987. Under the heading 'Mobilizing all for health for all', a joint paper on "policy and strategy issues in putting information, education and communication to work for health" was prepared for the meeting (11). The role of IEC was sketched in broad terms: "a fully developed IEC strategy can help create heightened awareness of health as a national issue among policy-makers and public alike; it can help transform such awareness into desirable decisions and behaviour among the community and the nation's decision makers; it can mobilize all sectors of society to participate effectively in specific programmes; it can help sustain such action in particular programme directions and lay the basis for a progressively wider spectrum of health interventions. It is an essential component of social mobilization for health."

Experience in several countries had yielded major lessons: advocacy to create favourable political will, especially at head of state/government level, repaid the effort; national institutions and community-based organizations were channels for IEC in the manner of the mass media, and motivating them and similar bodies to participate in health matters contributed greatly to enduring success; community organizations, when successfully involved, contributed to programme success and sustained effort; IEC was used not just to inform or educate but to create new practices and actions in community groups as much as among decision-makers – indeed, the community's own needs and perceptions were the touchstone for IEC planning; and the effective use of IEC demanded experienced and skilled IEC specialists be involved at all stages of planning and implementation.

Despite impressive advances, both WHO and UNICEF could do more to strengthen and upgrade IEC capacity at country level. They must assign a high priority to collaborating with governments in formulating policy and strategy in this area. Each agency had special strengths, which were complementary and must be maximized. For this to be realized, WHO and UNICEF must develop ways to coordinate their plans and actions, with each other and with governments. Human resources in IEC, in both government and WHO/UNICEF, must be assessed and enhanced, if required, through management and training action. Advocacy of better strategic planning and technology in IEC vis-à-vis governments, national institutions and within WHO/UNICEF must earn high priority in country plans. A WHO/UNICEF working group should be formed to carry forward the concepts and strategies supported by the Joint Committee. Finally, the first opportunity for coordinated action and improved methods might be immunization, the theme of World Health Day in 1987.

The Joint Committee emphasized the importance of IEC and social mobilization to generate political commitment for health. It recognized the complementary roles of WHO and UNICEF in promoting healthy behaviour and empowering people with knowledge. WHO's strength lay in providing technical and scientific information, and also experience in health education, UNICEF's in imparting knowledge to people and getting them to act. IEC and social mobilization should be integral to all health and social development programmes. WHO/UNICEF collaboration in IEC was crucial to providing consistent messages that would not confuse recipients. The Joint Committee recommended that the joint efforts and activities suggested should be carried out at all levels. As the basis for mobilizing all forces for health, country experiences and activities in IEC should be strengthened and become part of any new IEC programmes. The two secretariats should establish a joint working group to develop a plan of action and timetable to implement policies and actions outlined in the background paper (12).

Ottawa Charter for Health Promotion, 1986

Health Promotion

Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being.

Prerequisites for health

The fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. Improvement in health requires a secure foundation in these basic prerequisites.

Advocate

Good health is a major resource for social, economic and personal development and an important dimension of quality of life. Political, economic, social, cultural, environmental, behavioural and biological factors can all favour health or be harmful to it. Health promotion action aims at making these conditions favourable through advocacy for health.

Enable

Health promotion focuses on achieving equity in health. Health promotion action aims at reducing differences in current health status and ensuring equal opportunities and resources to enable all people to achieve their fullest health potential. This includes a secure foundation in a supportive environment, access to information, life skills and opportunities for making healthy choices. People cannot achieve their fullest health potential unless they are able to take control of those things which determine their health. This must apply equally to women and men.

Mediate

The prerequisites and prospects for health cannot be ensured by the health sector alone. More importantly, health promotion demands coordinated action by all concerned: by governments, by health and other social and economic sectors, by nongovernmental and voluntary organizations, by local authorities, by industry and by the media. People in all walks of life are involved as individuals, families and communities. Professional and social groups and health personnel have a major responsibility to mediate between differing interests in society for the pursuit of health.

Health promotion strategies and programmes should be adapted to the local needs and possibilities of individual countries and regions to take into account differing social, cultural and economic systems.

Health promotion action means

Build healthy public policy

Health promotion goes beyond health care. It puts health on the agenda of policy-makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health.

Health promotion policy combines diverse but complementary approaches including legislation, fiscal measures, taxation and organizational change. It is coordinated action that leads to health, income and social policies that foster greater equity. Joint action contributes to ensuring safer and healthier goods and services, healthier public services, and cleaner, more enjoyable environments.

Health promotion policy requires the identification of obstacles to the adoption of healthy public policies in non-health sectors, and ways of removing them. The aim must be to make the healthier choice the easier choice for policy-makers as well.

Create supportive environments

Our societies are complex and interrelated. Health cannot be separated from other goals. The inextricable links between people and their environment constitute the basis for a socioecological approach to health. The overall guiding principle for the world, nations, regions and communities alike is the need to encourage reciprocal maintenance – to take care of each other, our communities and our natural environment. The conservation of natural resources throughout the world should be emphasized as a global responsibility.

Changing patterns of life, work and leisure have a significant impact on health. Work and leisure should be a source of health for people. The way society organizes work should help create a healthy society. Health promotion generates living and working conditions that are safe, stimulating, satisfying and enjoyable.

Systematic assessment of the health impact of a rapidly changing environment – particularly in areas of technology, work, energy production and urbanization is essential and must be followed by action to ensure positive benefit to the health of the public. The protection of the natural and built environments and the conservation of natural resources must be addressed in any health promotion strategy.

Strengthen community action

Health promotion works through concrete and effective community action in setting priorities, making decisions, planning strategies and implementing them to achieve better health. At the heart of this process is the empowerment of communities, their ownership and control of their own endeavours and destinies.

Community development draws on existing human and material resources in the community to enhance self-help and social support, and to develop flexible systems for strengthening public participation and direction of health matters. This requires full and continuous access to information, learning opportunities for health, as well as funding support.

Develop personal skills

Health promotion supports personal and social development through providing information, education for health and enhancing life skills. By so doing, it increases the options available to people to exercise more control over their own health and over their environments, and to make choices conducive to health.

Enabling people to learn throughout life, to prepare themselves for all of its stages and to cope with chronic illness and injuries is essential. This has to be facilitated in school, home, work and community settings. Action is required through educational, professional, commercial and voluntary bodies, and within the institutions themselves.

Reorient health services

The responsibility for health promotion in health services is shared among individuals, community groups, health professionals, health service institutions and governments. They must work together towards a health care system which contributes to the pursuit of health.

The role of the health sector must move increasingly in a health promotion direction, beyond its responsibility for providing clinical and curative services. Health services need to embrace an expanded mandate which is sensitive and respects cultural needs. This mandate should support the needs of individuals and communities for a healthier life, and open channels between the health sector and broader social, political, economic and physical environmental components.

Reorienting health services also requires stronger attention to health research as well as changes in professional education and training. This must lead to a change of attitude and organization of health services, which refocuses on the total needs of the individual as a whole person.

Moving into the future

Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love. Health is created by caring for oneself and others, by being able to take decisions and have control over one's life circumstances, and by ensuring that the society one lives in creates conditions that allow the attainment of health by all its members.

Caring, holism and ecology are essential issues in developing strategies for health promotion. Therefore, those involved should take as a guiding principle that, in each phase of planning, implementation and evaluation of health promotion activities, women and men should become equal partners.

Commitment to health promotion

The participants in this Conference pledge:

- to move into the arena of healthy public policy, and to advocate a clear political commitment to health and equity in all sectors;
- to counteract the pressures towards harmful products, resource depletion, unhealthy living conditions and environments, and bad nutrition; and to focus attention on public health issues such as pollution, occupational hazards, housing and settlements;
- to respond to the health gap within and between societies, and to tackle the inequities in health produced by the rules and practices of these societies;
- to acknowledge people as the main health resource, to support and enable them to keep themselves, their families and friends healthy through financial and other means, and to accept the community as the essential voice in matters of its health, living conditions and well-being;

- to reorient health services and their resources towards the promotion of health; and to share power with other sectors, other disciplines and most importantly with people themselves;
- to recognize health and its maintenance as a major social investment and challenge; and to address the overall ecological issue of our ways of living.

The Conference urges all concerned to join them in their commitment to a strong public health alliance.

Call for international action

The Conference calls on the World Health Organization and other international organizations to advocate the promotion of health in all appropriate forums and to support countries in setting up strategies and programmes for health promotion.

The Conference is firmly convinced that if people in all walks of life, nongovernmental and voluntary organizations, governments, the World Health Organization and all other bodies concerned join forces in introducing strategies for health promotion, in line with the moral and social values that form the basis of this CHARTER, health for all by the year 2000 will become a reality.

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F Mattioli/WHO/FAO

A farmer in the Western Pacific region sprays his crop with pesticide.



E Quano

Manila residents help collectors clear rubbish from their suburb.



A S Kocher

A visiting public health nurse at a village in Thailand teaches children how to brush their teeth.



D Gibson

In Kenya, an operator trained in less than two weeks X-rays a woman's hand using a WHO-BRS machine.



G Safar/WHO

Condoms are purchased from a vending machine in Germany.



N Durrel-Mckenna

Breastfeeding and family planning posters at a clinic in Lesotho.



Dr F Porahr

A poster in Niger on malaria prevention and food hygiene.



Zafar

A health worker in Burundi examines a child as part of a refresher course to improve diagnostic and prescribing skills.



Mother and child with health worker in Peru.



GT Farkas

A child washes from a tap in Nepal, where safe water and sanitation are essential for social and economic development.



F Larsen

Cattle are disinfected in Argentina to prevent the spread of disease to humans.



M Sentiis

Clinical officers and community nurses from rural health centres in Kenya receive training in diagnosis, prescribing and drug management.



A medical facility in the developed world.



Rural auxiliary nurses receive training in Venezuela.



A Pratinidhi/WHO

A health worker in India uses a tape measure to monitor uterus growth.



WHO

A group of international scientists at a WHO immunology research and training centre.



WHO

Traditional medicines are displayed in China as part of World Health Day in 1988.



J M Micaud

Residents at a home for the aged in Bangkok take part in a fitness class.

Part 3

Health science
and technology–health
promotion and care

Research promotion and development

An important development that began during Dr Mahler's first term as Director-General was the expansion of research responsibilities from the central to the regional level. As described below, each region developed its research programme under the guidance of its own regional Advisory Committee on Medical Research. Furthermore, with Resolution WHA31.35, adopted by the Thirty-first World Health Assembly in May 1978, the Director-General was requested to "involve more closely the Executive Board, regional committees as appropriate, and the advisory committees on medical research in the formulation and definition of priorities, and the evaluation of the Organization's research activities".

The global Advisory Committee on Medical Research was established in 1959 when the Twelfth World Health Assembly (resolution WHA12.17) recognized that WHO had an important role to play in fostering international collaboration among scientists by stimulating, coordinating, promoting and supporting research. It also agreed that provisions should be made in the regular budget to finance the medical research programme, and that a special account be established to supplement this regular budget provision. Established as an advisory body to the Director-General during Dr Candau's directorship from 1953 to 1973, the Advisory Committee on Medical Research reported directly to the Director-General in a private, confidential manner. Dr Mahler removed its private/confidential nature almost immediately on taking office.

The Programme Committee of the Executive Board in 1978 provided guidance on several important matters regarding WHO's role. It considered that WHO, in partnership with national institutions, should aim in its research role to help solve explicitly defined problems of public health importance. It was essential that WHO integrated its research activities into a coherent whole. With WHO regional offices and countries assuming greater responsibilities and initiative, headquarters was obliged to provide effective coordination and technical support at the different levels of the Organization. It was also necessary to keep an overall view of scientific work being conducted in different subjects and in different regions. On the subject of research funding, the Programme Committee felt it necessary for WHO to remain independent of donor agencies. It also stressed the need to stimulate further the exchange of research information by various mechanisms. To promote coordination, such research information should cover research policy, institutional arrangements and research resources as well as technical data and literature.

The Programme Committee also stressed the desirability of designing a research plan and carrying out prospective studies related to the Global Strategy for Health For All by the Year 2000. Forecasts of health needs and scientific developments were required that took global, regional and national factors into account. Problems and appropriate research approaches should be carefully defined, and to that end, the Advisory Committee must provide leadership to establish research priorities that would help the Organization attain its goal.

In May 1980, the Health Assembly (resolution WHA33.25) urged Member States to cooperate more in health research and give high priority to research training and institution-strengthening. At the same time, with the active support of the regional advisory committees on medical

research, WHO placed increased emphasis on strengthening national research capabilities and on formulating national and regional priorities. Particular stress was placed on action-oriented field research and on the need to relate research to health services. Several WHO programmes – the Special Programme of Research, Development and Research Training in Human Reproduction; the Special Programme for Research and Training in Tropical Diseases; and the Expanded Programme on Immunization, for example – had considerable health services research components, as discussed in other chapters.

Dr Mahler, in an address given in April 1982 on the social function of health research, observed that for health research to respond to the world's health challenges in a socially relevant way, "it had to be extended to include the relevant ingredients of political, economic, social, cultural, psychological, environmental, epidemiological and managerial research in addition to biomedical research as it has been understood until now" (1).

Global developments

Following its June 1978 meeting, the Advisory Committee established subcommittees on health services research, nutrition, diarrhoeal diseases and scientific information. The role of these subcommittees was to work closely with WHO to start or expand research in their respective areas. The subcommittee on scientific information also encouraged institutions, such as the United States Library of Medicine, to assist more. For example, a quarterly bibliography of tropical diseases was compiled from the library's resources to meet the needs of the Special Programme for Research and Training in Tropical Diseases; it went to about 3700 individuals and institutions associated with that programme.

At the Advisory Committee on Medical Research meeting in November 1979, it was decided that the subcommittees on nutrition and diarrhoeal diseases had completed their work. In view of the successful catalytic role played by such active but short-term groups, additional subcommittees were proposed: on research administration, career structures in research, and mental health and allied neuropsychiatric problems in developing countries.

WHO took an active part in preparations for the United Nations Conference on Science and Technology for Development, which was held in Vienna in August 1979. Among the problems reviewed during a week-long colloquium that preceded the conference were equitable access to adequate energy and mineral resources, food and nutrition, population issues, health care, poverty, illiteracy, employment, and peace and security; all problems that could not be solved by one country or a small group of countries.

In its background paper for the conference (2), WHO drew attention to various pressing health issues, including:

- communicable diseases; in particular, the need to make fuller use of existing vaccines and develop improved new vaccines – against parasitic diseases, for example;
- malnutrition, and the special needs of pregnant women and young children;
- environmental diseases, and the particular importance of a clean water supply;
- family health/family planning, and the need not only for improved contraceptive technology but also for better access to services;
- providing essential pharmaceuticals that were both safe and inexpensive, and the importance of making greater use of traditional medicines;

- the many psychosocial factors that have a bearing on health, and the need for more skilled manpower and greater utilization of community resources in this area.

At its 22nd session, held in Geneva in October 1980, the Advisory Committee on Medical Research reviewed the work of its subcommittees on information, health services research, research on mental health and human behaviour in PHC, research administration, and research career structures. It recommended that the subcommittees on information and research administration should continue their work; a subcommittee be established to study the research component of WHO's cancer programme; the subcommittee on health services research, after its November 1980 session, be transformed into a scientific planning group; and scientific planning groups be established for the programmes in nutrition and in mental health and human behaviour in PHC.

When reviewing the work of the regional advisory committees, the global Advisory Committee on Medical Research noted that one of the main hindrances to effective action by certain of them was lack of funds. It proposed that all regional offices earmark a minimum 5% of their regional budgets for research. It also noted that the disparity between the capabilities of the various regions, and also between countries in those regions, prevented some regional advisory committees from instituting relevant country-based studies. The global Advisory Committee suggested that efforts be made to achieve better interdigitation between national research priorities and those of WHO at the regional and global levels, including the possibility that certain projects be funded partly by WHO and partly by Member States; others might benefit from the experience acquired at interregional level.

The global Advisory Committee discussed research career structures, including a recommendation that, rather than promote research career structures *per se*, WHO should support research as a basic component of health plans and programmes. Research opportunities and career structures were essentially a national matter; careers in research could not be viewed separately from those in other government services or institutions. The general view was that appropriate systems of peer approval and opportunities for interaction between young scientists and their colleagues constituted a stimulus to research workers.

The final report on ethical review procedures for research involving human subjects was examined by the 23rd session of the global Advisory Committee, held in Geneva in October 1981, as were progress reports received from the different subcommittees. Specially commissioned papers on formulating research activities in gerontology and on using and protecting non-human primates and other animals required for research were discussed also.

The global Advisory Committee, at its 24th session, held in Geneva in October 1982, reviewed the progress made in WHO's global and regional research. It had the reports of its subcommittees on information, research administration and health services research to consider. Issues of particular interest at this session were the proposed research activities in gerontology, cancer control, and biobehavioural sciences and mental health. It endorsed the research programme on cancer control, including work on prevention, early detection and pain relief. It also endorsed the proposals of the scientific planning group on the expanded programme of research and training in biobehavioural sciences and mental health (see Chapter 12). Proposals for two new research activities were considered, namely: research on health manpower development, for which a subcommittee was established; and research on occupational health, for which a technical advisory group was constituted.

At its 26th and 27th sessions, in 1984 and 1985, the global Advisory Committee focused on an exhaustive debate on the report of its subcommittee on health research strategy for health for

all, which was prepared under the chairmanship of Professor T McKeown (3). WHO's research role, as outlined in this report, differed from that of medical schools, research foundations and national research councils in at least two respects. First, WHO had a "wider vision and a larger responsibility". From its experience of the varied conditions in different parts of the world, health problems were seen by WHO "from historical and international perspectives" in a way that was hardly possible for those who had not shared the experience. As a result, WHO should be able to "assess the determinants of health, and to arrive at a just balance between preventive and therapeutic measures, between basic and applied research, and between the needs of developed and developing countries".

The debate over health research continued at all levels of WHO, particularly in all regional advisory committees on medical research, so that a common framework might emerge to meet the varying requirements and aspirations of Member States. The need to strengthen coordination between the global and regional advisory committees on the one hand, and medical research councils on the other, was emphasized. The Thirty-ninth World Health Assembly, in May 1986, formally underlined the reorientation in research called for by the Declaration of Alma-Ata, which recognized the importance of the relationship between the health and other sectors, by deciding (WHA39(8)) to change the title of the Advisory Committee on Medical Research to Advisory Committee on Health Research.

When, at the beginning of 1985, the 77th session of the Executive Board discussed this topic, some of the regional-directors took the opportunity to comment on the work of the global Advisory Committee and its relevance to their regions. Dr Monekosso, for example, indicated that research in the African Region was not yet as coordinated as researchers there would like, and much of the research undertaken was not down to the existence of the regional Advisory Committee as much as it was to the presence of researchers supported by their states, regardless of the research structures in WHO. On the global health research strategy for health for all, he felt more emphasis should be placed on health rather than on disease and the mechanisms of disease. Dr Guerra de Macedo felt that the global strategy was so globally oriented as to be of little practical use in orienting research activities in the Region of the Americas, although it was of great value as a source of ideas for the region. Dr Asvall explained that the European Region had delayed acting in this field in light of the priority given to the regional strategy for health-for-all development. Now that such a strategy had been developed (see Chapter 4) a special European research document was being prepared (see below).

In October 1986, the subcommittee on health research strategy for health for all was asked by the Advisory Committee on Health Research to constantly review the strategy so that it could be modified and extended. Much could be learnt from the experience of those developing countries that had made rapid advances in health, and by applying the strategy in one or more countries that had no such an experience. Case-studies were initiated in the Eastern Mediterranean Region, in Jordan, Kuwait and Pakistan. A task force was established to elaborate regional research strategies and plan in collaboration with health research councils. Following visits to research sites, a programme of work was drawn up to adapt the research strategy. In the Region of the Americas, the Canadian Institute of Advanced Research, and in the European Region, research institutions in Berlin (West), expressed interest in cooperating with developing countries to study health promotion, nutrition and social sciences.

The subcommittee on health services research, with special emphasis on maternal and child health, was established in 1981 and presented its final report in 1985. It was concluded that its

‘tripartite’ partnership model, with countries from the north and south, and WHO as a ‘facilitator’, could be extended to several more countries.

The subcommittee on enhancing the transfer of technology to developing countries, with special reference to health, was established in 1983 and handed the following tasks: to delineate the new concepts in biological and physical sciences that could be developed into practical technologies; to identify health areas where the new technologies could be advantageously applied in developing countries; and to define ways of achieving effective utilization. A report on its work in 1986 was presented to the Advisory Committee on Health Research and an abridged version was widely circulated during the first half of 1987. The subcommittee was charged by the Advisory Committee to: study strategies, using case-studies as appropriate; monitor new and emerging technologies; and working with the subcommittee on health manpower research, supervise a pilot project on a consultative expert system on health manpower planning. Working documents on developments in biomedical and physical sciences were prepared for circulation, discussion and consolidation in 1988. The subcommittee was also asked to advise on establishing research and development units as a bridge between countries providing and using technology, and as a way to ensure their infrastructure was appropriately equipped and staffed to serve the overall objectives of national health development.

In its final report on enhancing the transfer of technology to developing countries, with special reference to health, the subcommittee explored future and emerging technologies, outlined the roles for WHO and proposed pilot projects (4). Its review of new concepts and techniques in the physical sciences explored possibilities in microelectronics and information technology, new materials and surface science, and systems technology. The emergence of successful medical ‘expert systems’ was seen to offer significant opportunities for training health personnel, especially when senior clinicians were too busy to be able to fulfil teaching functions as well as meet clinical demands. New display and imaging technology in the visualization of anatomical structures in the body offered promise for diagnosis. It was suggested that voice recognition technology, when available, would allow voice-input systems for data entry, which might simplify this task and reduce errors.

New materials offered possibilities for treating and transporting water supplies for domestic purposes, and for manufacturing cheap lens and other improved prosthetic devices: carbon-coated stainless steels for strong, inert bone-and-joint prostheses, for example. Systems technology and modelling had certain applications in health-care systems and health-development strategies. Two particular applications were discussed: planning therapeutic drug delivery systems and evaluating proposed strategies for health development with reference to their costs and consequences outside the health sector.

Modelling the drug distribution system would allow bottlenecks to be identified and help explain why they had occurred. Experimentation using the computer model would also help determine optimum procedures to reduce wastage and hasten emergency responses. Modelling the multisectoral relationships between health components and other sectoral variables (such as demography, nutrition, housing, employment, education and communications) would allow the health planner to investigate the implications and costs of potential strategies to meet pre-determined goals for health development.

The subcommittee outlined various ways that WHO could drive technology transfer, including: advising on formulating a national health technology policy; promoting the establishment of country-based resource groups with the expertise for the related technology; identifying WHO

collaborating centres that could provide technical and managerial advice; and advising and assisting impartially in negotiations between the supplier of the technology and the host country.

The subcommittee recommended that when designating WHO collaborating centres, the Organization should select centres with experience of designing and fabricating medical equipment and instruments, and that it should establish pilot projects to demonstrate the major potential of the new technologies for its programmes. Two such projects were proposed: establishing a task force on measles vaccine production; and developing a consultative expert system for health manpower planning.

The subcommittee on health manpower research focused on mobilizing human resources for research on health for all. The conditions for awarding research training grants and visiting scientist grants were updated, and an informal consultation was held in Geneva in May 1985 on research career structures. It outlined the priorities for action by Member States and by WHO, such as sensitizing decision-makers, promoting intersectoral coordination and strengthening national health research management. If the concept of research as an “acceptable and affordable adjunct to health systems development and health services delivery” was to be firmly established, “health system managers, resource allocators and decision-makers needed to be far more closely involved in the determination of research priorities and projects by the development and establishment of more flexible institutional linkages between them and research managers and workers” (5). In 1986, the subcommittee recommended that resources be mobilized to promote research as a basis for decision-making in health systems and manpower development. Such an initiative would be a collaborative effort involving members of the global and regional advisory committees on health research, and the agencies that provided support for such research.

Work continued with the United Nations Research Institute for Social Development on measuring and analysing the dynamics of development. A case-study on urbanization and labour use explored the likely costs and consequences of particular strategies. Collaboration continued with the United Nations Centre for Science and Technology for Development, with the International Council of Scientific Unions, and with the Council for International Organizations of Medical Sciences, particularly on questions of ethics.

The network of WHO collaborating centres was strengthened by designating new institutions for collaborative research in priority areas and related training. The first of several coordination meetings planned to be held in different countries took place in Moscow in June 1987. WHO promoted the application and transfer of scientific knowledge for national health development, improving information channels by establishing or extending bibliographic services, for example.

The review of national research capacity-strengthening schemes continued, with particular emphasis on supporting and developing research manpower through research training grants and visiting scientist grants. About 300 such grants were awarded by the Special Programme of Research, Development and Research Training in Human Reproduction and by the Special Programme for Research and Training in Tropical Diseases (65%), other programmes, including support for training in immunology, vector control, respiratory infections and research management (19%), and on behalf of the United Nations Population Fund (16%).

African Region

Following guidance from the African Advisory Committee on Medical Research, workshops were organized to provide training in research methodology and to develop health research programme activities in the region. After its second session, held in 1977, the regional Advisory Committee established research priorities for the major parasitic diseases, immunology, and health services research. The Advisory Committee's activities were concerned with appropriate managerial mechanisms for promoting and catalysing research work; establishing a network of national centres for health services research; and implementing the Special Programme of Research, Development and Research Training in Human Reproduction, the Special Programme for Research and Training in Tropical Diseases, the diarrhoeal diseases control programme, and the nutritional research programme.

A network of 43 national and three regional centres for research and training was established, at which time a regional project for research grants and research training grants became operational. By 1986, 25 African Member States had defined their research policies and determined their priorities, and 30 had established a health research council or analogous body.

At its third session, in Zambia in November 1978, the regional Advisory Committee recommended a research promotion subcommittee be established to stimulate further research within the countries; a health services research study group to prioritize PHC; and a study group to elaborate the regional component of the global diarrhoeal disease control programme. The research promotion subcommittee, which was established in 1979, visited 10 countries that year.

The Special Programme for Research and Training in Tropical Diseases continued to expand in the region, managing a total of 206 projects since its inception: 71 of these were in research and development, 119 in research training, and 16 in institution-strengthening. Onchocerciasis research (see Chapter 15), carried out mainly in the Volta River basin area, focused on: vector biology and control; environmental studies; clinical, epidemiological and parasitological investigations; and chemotherapy.

As part of the Special Programme of Research, Development and Research Training in Human Reproduction, an African study group was established and met in Antananarivo in June 1981. The four priorities of the Special Programme were: pregnancy and delivery; male and female infertility; fertility regulation; and gynaecological disorders (see Chapter 11).

An evaluation of the regional research programme by the regional Advisory Committee in 1981 led to the following recommendations: health policy-makers, including those from countries that had not established medical research councils, should be brought together at regular intervals; at least 5% of the regular budget for the region should be allocated to research; the regional research information system needed to be strengthened; and ministries of health and faculties of medicine should collaborate to develop and manage health services research.

In the area of research promotion and development, the objectives of the medium-term programme for 1984–1989 were: to promote the framing of a coherent national health research policy geared to the overall development policy; to promote procedures to coordinate research in health and related fields, adopt managerial methods, and provide information support, with the participation of the health research councils and relevant ministries of Member States; to help develop research capability in Member States with a view to strengthening activities that were relevant to national health development; and to promote and coordinate research on the economic and behavioural determinants of health and their interaction. In line with these objectives, WHO granted investigators US\$ 240 000 worth of research subsidies and research

training fellowships. Workshops on research methodology were organized, and study groups for research on health systems and human reproduction established.

The evaluation of the regional research and development programme, 1978–1983, was presented to the sixth session of the regional Advisory Committee on Medical Research held in Abidjan in April 1983, at which time several issues were discussed in depth, particularly: research in human reproduction in the region; national and regional mechanisms for developing and improving research; and formulating research protocols (6). The conclusions of the session covered the following: an appreciation of the Organization's efforts in promoting research projects and, in particular, information support; the need to reorganize training programmes and emphasize health sciences research; the need to bridge the resource gap in health research manpower; a recognition that some of the obstacles to research development could be overcome if all Member States were to apply a national research policy and use appropriate managerial mechanisms (including a system of coordination and funding) with adequate career opportunities for research workers; and a recognition of the importance of regularly and methodically evaluating health policies, programmes, services and institutions. Participants requested that the Regional Director to establish a newsletter providing research workers and research centres with information on research funds and how to apply for them; to compile an inventory of research centres and their potential for training health workers; and to establish a subcommittee for mental health and another for acute respiratory infections.

Responding to the request of the African Advisory Committee, a health research information bulletin (*AFRO-Features*) was started during the 1984–1985 biennium, carrying information on health technology, new diagnostic tools and community involvement, and their possible use in Member States' health development processes. A research manual was prepared on how to develop and design research proposals to help solve priority health problems.

A joint programme, launched by the Government of the Netherlands, the Royal Tropical Institute in Amsterdam and WHO, developed activities to strengthen health systems research in the countries of southern Africa. Using an intervention strategy with three interrelated components – institutional development, research and training – this four-year programme was designed to develop a critical mass of national researchers for addressing priority issues, and to encourage decision-makers at all levels of the health system to use the results of research. The United States Agency for International Development supported applied health research in central and west Africa as part of its project to strengthen health delivery systems, for which WHO served as executing agency. This project was initiated in the early 1970s and involved collaboration with 20 African countries before being terminated in 1982. Although judged to have helped strengthen regional and national capacities for training and developing health workers, and communicable disease control, its efforts to strengthen applied research on PHC were recognized as having had a limited impact. Workshops had engendered interest but were not long enough to confer technical competence to participants. Of more immediate importance was the recognition that PHC had “profound unknowns and inadequately tested concepts, such as considerations as to the scope of duties that can reasonably be carried by a village health worker, how to remunerate them, how to give them clinical supervision and how to maintain a backup referral service and supply system” (7).

The second meeting of the regional study group on health systems research (HSR) was held in Brazzaville in February 1985. It shed further light on the difficulties experienced by participating countries. There was a “failure to understand the very concept of HSR in certain

countries in the Region”, as there was a “lack of clear national policies on HSR” and sufficiently qualified staff to properly conduct this type of research (8).

An intercountry workshop on health systems research held in Harare in July 1987 brought together decision-makers and researchers from the 10 Member States involved. The devised specific plans of action to be implemented with support from the joint programme.

By the end of the decade, substantial progress had been made in capability-strengthening. There were national centres in 25 Member States, and the target of developing six regional research training centres had been achieved. The composition of the regional Advisory Committee on Health Research was renewed and, along with other advisory committees, it came under the African Advisory Committee for Health Development, reporting to the Regional Director.

Region of the Americas

Research in this region had two main objectives: to develop and strengthen national capabilities for bringing research to bear on the country’s health problems; and to give a lead in developing those areas of research critical to achieving health for all. Special attention was given to health services research, with emphasis on the need to extend health services coverage. Following the regional Advisory Committee session in May 1978, working groups were formed to study methods of health services research. Meetings to promote the concept were held in Argentina, Bolivia, Brazil, Costa Rica, and Mexico, and a health services research programme was initiated, with an emphasis on strengthening local capabilities.

Meetings were held in all five subregions in preparation for a Pan American conference on research policy that would help countries set research priorities, focus research on problems encountered, establish reference systems, and formulate ethical codes for research involving human subjects. The Pan American Conference held in Caracas in April 1982 issued a *Declaration on Health Research Policies* that was signed by the participants. It stressed that research was essentially a tool for developing knowledge and technologies related to important health issues.

Research training grants and medical research grants were used to strengthen national research capabilities and to assist young scientists in their training and reintegration when they returned to their home institutions. Support was also given to enable scientists from developed countries conduct training programmes in, and for the benefit of, developing countries. Special emphasis was placed on including research and training programmes in the curricula of postgraduate studies in public health at universities in Brazil, Colombia, Costa Rica, Cuba, the Dominican Republic and Mexico.

Research in nutrition was carried out at the Institute of Nutrition of Central America and Panama and the Caribbean Food and Nutrition Institute; in zoonoses at the Pan American Foot-and-Mouth Disease Center (commonly known by its acronym, PANAFTOSA) and the Pan American Zoonoses Center (CEPANZO); in sanitary engineering, environmental health, and ecology at the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) and the Pan American Center for Human Ecology and Health (ECO); in epidemiology at the Caribbean Epidemiology Center (CAREC); and in perinatology at the Latin American Center for Perinatology and Human Development. The regional library, BIREME, expanded its information network and disseminated information on a considerable scale.

A survey revealed a general trend of sustained growth in health systems research in the region. The results were discussed at a workshop held in July 1984 in Cocoyoc, Mexico, where recommendations were made emphasizing the need to develop national policies on health systems research, to reorient trends towards fundamental issues relating to health needs and service delivery, and to build up administration at national, intersectoral, institutional and operational levels.

PAHO's Advisory Committee on Medical Research expanded its activities in 1984 to include priority health issues beyond those of a purely medical nature. At the same time, the Advisory Committee helped to mobilize national resources, exchange information, and develop networks for cooperation in research in priority health areas. It convened a study group to identify constraints and suggest remedies to the shortage of research workers and the problems of diffusing scientific information. The Advisory Committee stressed the urgent need to strengthen studies on technology transfer and evaluation, as well as the need to collect and disseminate information on health services and the use of auxiliary personnel. It also recommended that a multidisciplinary study on infant mortality be conducted.

Of the activities that had a positive influence on the health programmes of countries of the region, four were judged to warrant special mention. Two were related to initiatives of the global Advisory Committee on Health Research. The first was a workshop on priorities and strategies for health research held in Guatemala held in November 1986 for scientists and health professionals from the Dominican Republic and countries of the Central American isthmus. At the workshop, it was recommended that ministers of health in Central American countries and Panama should be encouraged to allocate resources to prepare plans recognizing research priorities at national and subregional level. The second was an international meeting on technical cooperation among countries in the field of health science and technology, held in Uruguay in November 1987 and attended by representatives from institutions that coordinated technical cooperation.

The other two activities warranting special mention were a workshop on health services research held in Trinidad and Tobago in April 1986 for participants from the Caribbean area, and a programme in Latin America for biotechnology applied to health – relying on technical cooperation among developing countries – which was approved by PAHO's Advisory Committee on Health Research and implemented in connection with proposals for research activities and developing diagnostic methods for HIV/AIDS, hepatitis, malaria and Chagas disease.

South-East Asia Region

The fourth and fifth sessions of the South-East Asia Advisory Committee on Medical Research were held in April 1978 and April 1979 in India and Thailand respectively. The Advisory Committee reviewed research progress, judging it to have progressively expanded to include almost all the priority areas it had pinpointed at its first session in 1976.

Following a Regional Committee decision to allocate 2.5% of the regional budget to research (a percentage that was matched with funds from the Director-General's Development Programme), research activities increased in 1978. This enabled the Regional Office to give further support to several research projects, training in research through structured courses, visits by scientists, and research training grants. The Regional Office also promoted concerted efforts in Member States to develop research policies, priorities, and plans, including training and institution-strengthening.

The regional research programme was reoriented at the beginning of the decade in support of national and regional strategies for achieving health for all. A group of scientists from Member countries built a framework for action-oriented services research, and projects in this context were initiated during the 1980–1981 biennium. Recognizing the need for a multisectoral approach to research, the Regional Office organized a meeting in 1979 of directors of medical research councils, analogous bodies, and research foci in ministries other than health. The group met again in 1981 to discuss progress and specific issues identified for inclusion by the Regional Office in the Seventh General Programme of Work.

Training in research management and methods was developed, with centres of excellence identified and networks of collaborating centres established to permit greater participation by national scientists and institutions in WHO programmes.

At its eighth session held in May 1982, the regional Advisory Committee endorsed two sets of guidelines prepared by its subcommittee on health services research, namely: *Research needs for HFA2000*; and *Concept of health services research*. Selected topics for promotion were discussed. They included the behavioural sciences, liver diseases and snake bites. The importance of health services research was stressed. A health services research information system was established, linked to the health literature, library and information services network. Support was given to research in communicable disease programmes, especially malaria, leprosy, diarrhoeal diseases, dengue haemorrhagic fever and acute respiratory infections.

A regional plan of action formulated for the period 1983–1985 sought to strengthen national institutional networks, promote collaborative research and create the necessary multidisciplinary and multisectoral basis for conducting such research. A booklet on the subject was prepared and widely circulated (9). One of the elements emphasized in the plan of action, health behaviour research, was the subject of a national workshop held in Nepal in January 1983. This was followed by a scientific working group that met in New Delhi in April 1983 to review the status of WHO activities in behavioural sciences in the region. A scientific working group on acute respiratory infections also met in 1983 to develop the service-cum-research programme in the region.

A mid-decade assessment of research identified the following impediments to countries conducting health services research: lack of methodology; failure of the health services to define clearly key problems for study; inadequate cooperation between the health services and researchers; and the lack of 'glamour' attached to a type of research often considered too mundane to be published in recognized journals. To further stimulate such research, the regional Advisory Committee devised a detailed workplan to promote health systems research through meetings at national level and courses on methodology. Directors of medical research councils or analogous bodies were to meet every two years to promote coordination between headquarters, the region and Member countries.

Interest in health behaviour research led to the publication of a booklet in which the concepts and methods of such research were reviewed. This was widely distributed to researchers, national policy-makers and health administrators (10). Health behaviour research in the context of health for all was outlined and, following a description of current trends (e.g. culture and clinicians, clinical bias and social sciences, behavioural models, and community participation), examples of such research were given from various programmes, along with methodologies and approaches. In its conclusions, several potential obstacles were described, including: the risk that concepts and approaches developed in the industrialized countries might be applied without due consideration being given to important social and cultural differences; lack of awareness on the part of health planners, PHC directors and other administrators of the "pivotal role

human behaviour has in the success or failure of projects”; the inexperience of social scientists in PHC; and the risk that such research might become an end in itself, given that “in the name of ‘quality research’, professional elitism can run rampant, along with increasing rivalries between the experts in both health and social science camps”. To avoid these obstacles it was essential to remember that “quality means reliability and advancement of knowledge. It is not measured by the mere volume of data generated or in terms of the elegance of the research design. Those concerns are only distractions. What we must strive for is research which meets the specific needs of the people at this time and that can lay the conceptual and practical groundwork for achieving health for all. Those are the only relevant criteria for a final judgement”.

The 12th session of South-East Asia Advisory Committee on Health Research, held in New Delhi in April 1986, reviewed progress. It felt there was a need to improve the quality of research proposals and strengthen national research capabilities by developing mechanisms and processes for training researchers and accelerating institution-strengthening. It recommended that greater attention be paid to clinical epidemiology, streamlining the dissemination of scientific and research information, and developing closer links between WHO collaborating centres, medical research councils and national centres of excellence. Other topics for research that were added towards the end of the decade included: evaluation methods for PHC; spiritual aspects of health; technology transfer; information and education for health; integrated disease control through PHC; and health economics.

European Region

The European Advisory Committee on Medical Research, which was established in 1977, signalled five priority areas for promotion and development: standardization of methods and measurements in biomedical and health services research; prevention, prophylaxis and early detection of diseases; evaluation of drugs and other therapeutic or diagnostic substances; problems of health-care delivery; and economic aspects of health care. Working groups were established for each. At its fourth session in October 1978, two additional priority subjects were proposed: hypertension, and the economic aspects of health development. Addressing the Executive Board in 1983, Dr Leo Kaprio, the Regional Director, noted that the regional Advisory Committee “had had to fight for years to gain recognition for health systems research”.

The Advisory Committee continued to liaise with other groups active in medical research, and cooperate with the European Medical Research Council. A group of European bodies concerned with the subregional coordination of health services research met in September 1979 and discussed the possibility of increased coordination of health services research and confirmed the need for active coordination and liaison.

To ensure that research was focussed on a major health problem in Europe, further initiatives were developed around the theme of hypertension as it related to health care. Information from 135 hypertension research studies in progress in the European Region was reviewed. Hypertension served as a useful model for a variety of reasons, including its links to other major chronic diseases in the region, such as diabetes, renal disease, ischaemic heart disease, atherosclerosis and stroke (see Chapter 15).

The Advisory Committee regularly reviewed specific topics, including: radiation protection; health protection at the workplace; drug policies; health technology assessment; and the social, psychological and ethical consequences of new technology, such as artificial insemination and

fertilization. The Committee's planning groups also conducted reviews, on such matters as: problems in health-care delivery; standardizing methods, measurements and terminology; and evaluating therapeutic and diagnostic substances.

At its sixth session, held in Copenhagen in September 1980, the regional Advisory Committee discussed the latest recommendations of its planning groups in five priority areas: health services research programmes (mental health, hypertension as related to health care, and health economics); national organization and management of health research, and development of information systems; participation of the Regional Office in the international programme on chemical safety; the role of WHO collaborating centres; and the need to develop research manpower by way of a training grants scheme. The Committee stressed the importance of drug-related problems in studies on self-care, and the need for more specific recommendations on research into the effect of drugs on the behaviour of drivers. It recommended that a study on the economic aspects of recent developments in PHC be given priority, and that studies on the economic aspects of health care of the eyes be continued. In mental health, it underlined the need for continuing research on etiology, and for further studies in child psychology and early prevention of disorders.

After reviewing the recommendations of the regional study group on health services research, the regional Advisory Committee, at its meeting in Mürren, Switzerland, in January 1983, directed the study group to continue to identify health services research targets relevant to the community needs to be met through the strategy for health for all. The Committee also discussed the new programme on social equity and health, which had started in 1982, focusing on vulnerable groups (initially, migrants and the unemployed), and stressed that equity in health was a research priority of increasing importance. A subcommittee on this programme met in October 1983 to review national experience in this field.

At its 10th session in February 1984, the European Advisory Committee reviewed the reports of two working groups, one on the management and structure of health policy research, the other on scientific analysis of health and health care: paradigms, methodologies and organization. The first working group emphasized that countries should analyse their own structures and arrangements for research careers, financing research and maintaining dialogue between health authorities, society and researchers, with WHO having a "particular role in the field of health services research, e.g. by identifying the most profitable fields for such research". The second report described how the concepts of present health research were often too narrow to be fully relevant to the goal of health for all. Concepts ought to be widened by including qualitative research methodologies, applying general systems theory, and having more input from social and behavioural sciences. There was insufficient research on such subjects as stress, coping, factors related to employment and unemployment, the influence of genetic make-up in states of ill health, and the contribution of community participation to PHC services.

In recognition of the important role of the social sciences in health systems research, a European society for medical sociology was established to focus on the social aspects of the health-for-all strategy. This role was similarly recognized in developing curricula for training in health systems research methodology. Learning material and exercises were prepared to be included in the first modules of a curriculum with a social science and epidemiology bias.

Guidelines were produced on procedures for designating or redesignating WHO collaborating centres, from the initial approaches and elaboration of the plan of work and terms of reference, to evaluation. As a result, several Member States expressed interest in having their own collaborating centres evaluated. The first evaluation took place in the USSR in June 1987.

At its 13th session in February 1987, the regional Advisory Committee completed its analysis of research priorities related to regional health-for-all targets by producing a document titled *Research for health for all*, which was presented to the Regional Committee at its 37th session, held in 1987. The regional Advisory Committee also emphasized the importance of ethical issues in research, a concern echoed by several Member States. A meeting on 'Bioethics in the 1990s' was held in Antwerp in 1987.

Eastern Mediterranean Region

The regional Advisory Committee on Medical Research held its third session in March 1978 and its fourth in September 1979. It reviewed progress in projects dealing with drug utilization, alternative approaches to rehydration, and traditional medicine. At the fourth session, regional plans for applied research in nutrition and for field research in malaria were also reviewed, together with the research component of the project to prevent and control water-associated diseases in the irrigation schemes of the Gezira Province, Sudan.

Health services research continued to receive high priority, as recommended by the regional Advisory Committee. An analysis of research manpower in some countries, however, revealed a paucity of full-time medical research workers (even with an adequate career structure), and a lack of comprehensive plans for developing such manpower. Orientation courses were held to familiarize health administrators and research workers with the part that health services research could play in decision-making. A training course in July 1980 at the Department of Community Health, University of Nottingham, United Kingdom, was attended by 18 nationals from five countries of the region. A quarterly newsletter, *The Health Services Researcher*, began publication during the 1980–1981 biennium.

On more specific aspects of the health services research strategy, research aimed at modifying behaviours was emphasized: smoking, alcohol consumption, bad eating habits and drug addiction, for example. The need for research on threats to health arising from war and mass population movements, including research on the health system's preparedness to cope with such situations, was also highlighted.

A consultation in September 1981 refined the regional research priorities in health services manpower development. Research proposals were outlined for further development into projects by selected institutions in the region. To build up national expertise in managing research programmes and research centres, a workshop in Islamabad in April 1981 was devoted to: organizing research at national and institutional level; planning research; evaluating research proposals and scientific activities; staff promotion and development; research information; and management techniques applicable to medical research. A manual was prepared as an aid for similar workshops at national level.

Following the regional Advisory Committee's recommendations that special emphasis be given to research into PHC, a task force, convened in October 1982, identified four related priority topics: PHC coverage; community mobilization for PHC; reorientation of health professionals towards PHC; and factors influencing the effectiveness and acceptability of PHC workers at the community level.

The regional Advisory Committee met in August 1982 and April 1983 to review ongoing activities and advise on future developments. It discussed research priorities in several programme areas, including cancer, cardiovascular diseases and mental health, and made

suggestions on how research expertise in these fields might be developed. It also reviewed the progress of research projects supported by the diarrhoeal diseases control programme and the Special Programme for Research and Training in Tropical Diseases.

To strengthen regional coordination and intercountry collaboration on research, regular meetings of the national officers responsible for medical research were convened, with participants briefed on WHO initiatives to promote research in different programme areas. The Organization continued to provide financial support for research grants and research training awards. Despite these efforts, however, by 1985 only a limited number of scientists had made use of this programme. One constraint appeared to be the inability to formulate scientifically acceptable research proposals.

A team of experts visited six countries in the region (Egypt, the Islamic Republic of Iran, Iraq, Kuwait, Sudan and Tunisia) to determine the impact of WHO-sponsored research since the regional Advisory Committee on Medical Research (now the Advisory Council on Health Research) had been established. A task force established to implement the regional research strategy at the national level visited Kuwait in 1986 and Jordan and Pakistan in 1987.

National officers responsible for health research met in Khartoum in November 1986 to discuss the role of national health research councils or analogous bodies in implementing the regional research strategy, promoting health systems research, and intersectoral collaboration. Following the workshop on health research management held in Sudan in 1985, training modules for health systems research methodology were prepared. They were used at a similar workshop held in Yemen in February 1987 and, after revision, were ready for use at other national workshops. Twelve research proposals received support, and five research training grants were awarded.

To meet the needs of Member States for information on health systems research, behavioural research and health manpower development, two regional publications were amalgamated into a new publication at the end of the decade to become the *Eastern Mediterranean Region Health Services Journal*. The journal aimed to publish results of health systems research studies, behavioural research and the development of human resources for health in the region.

Western Pacific Region

Strengthening national capabilities was already a priority of the regional Advisory Council on Medical Research at the beginning of the decade. Three institutes were selected for initial support: in Malaysia, for research on tropical diseases, in Papua New Guinea, for research on acute respiratory infections, and in the Republic of Korea, for research on parasitic diseases and health services.

A wider coverage of WHO collaborating centres was planned, and collaboration among centres encouraged. Meetings of the regional Advisory Committee and its various subsidiary bodies laid the foundation for a substantial regional research programme designed to supplement national efforts. At its third meeting, held in August 1978, the task force on health services research formulated a regional programme, and detailed strategies, tactics and methods for planning health services research at country level. One of the priorities identified was research in health manpower development, involving close collaboration between behavioural scientists, health research workers and health administrators to help policy-makers and programme managers make key decisions.

Following the recommendations of the regional Advisory Committee, several research subjects were promoted as part of WHO programmes of technical cooperation. They included research on clonorchiasis and paragonimiasis; an interdisciplinary programme in several countries on diarrhoeal disease control, with emphasis on the operational aspects of control measures; and intervention studies aimed at reducing the mortality and morbidity from acute respiratory infections by at least 50% by the year 2000. In addition, research was promoted on the application of modern immunological techniques; diabetes in Polynesian and Micronesian islands; the health hazards of working populations, especially when changing occupational environments; vector control measures; and the methodology and planning of health services research.

A working group was convened in Manila in February 1980 to encourage Member States to establish health research councils or national focal points in order to better manage research. Training in research methodology received increased attention, and a WHO-supported national workshop on the subject was conducted in China in May 1982.

The working group on national health research management met in February 1982 to review the status of national systems of health research management and to discuss ways to promote research programme planning. This was followed by an intercountry workshop in August that year on research design and methodology in biomedicine and health services research. At the country level, steps were taken in China and Viet Nam to identify ways to develop and strengthen health systems through research. A workshop on PHC research held in October 1983 brought together the staff of four WHO collaborating centres in China.

The regional Advisory Committee reached the following conclusions at its eighth session, held in April 1983: health services research should be given higher priority, particularly in information exchange and manpower development; integrating biomedical, health services and behavioural research should be encouraged when feasible; research on diarrhoeal diseases should continue to receive strong support; research on schistosomiasis should take advantage of the fact that mass chemotherapy using praziquantel was available as an intervention, and should also draw support from health services research; research on the behavioural sciences and mental health should continue to be part of the programmes supported by national health research councils; progress had been made in research on acute respiratory infections; research on hepatitis B should be accelerated; and the regional biomedical information network should be further strengthened.

The second session of the Sub-Committee on Health Services Research was held in April 1983. In his opening address, Dr Hiroshi Nakajima, who had replaced Dr Francisco J Dy as Regional Director in 1979, stressed the importance of Member States establishing a working environment that allowed health managers, researchers and educators to collaborate to: formulate country health policies; identify priority research needed to formulate and carry out such policies; conduct studies; and create mechanisms to enable people to absorb and apply technologies appropriate to their health and socioeconomic circumstances. After reviewing progress during the previous two years, the Sub-Committee recommended that WHO develop suitable training packages on health services research, and collaborate in developing national health services research inventories containing relevant information on national programmes, including priorities, funds available, manpower strengthening activities, published work and research in progress.

Countries were encouraged to establish national research councils or national focal points to better manage research, and to promote career structures in research. Expanding the network of collaborating centres in the region was seen to have facilitated information exchange and intercountry collaboration. Training in research methodology received increased attention. Research training grants, contracts for collaborative research and meetings continued to be

important tools in pursuing programme objectives. Regional programme managers were given increased responsibility for programming research as an integral part of health development activities, thereby aligning it to the quest to solve regional and national health problems.

At its ninth session, held in Manila in April 1984, the regional Advisory Committee made several key decisions and recommendations on: technology transfer (for which a subcommittee was established); promoting health systems research, with emphasis on manpower development; research on manpower development as a central area in PHC; research on behavioural science and mental health; and biomedical information system development, using appropriate telecommunication technology. The 10th session, held in Manila in April 1985, sharpened some of the priorities agreed upon earlier. In particular, in the field of health systems research it was decided maternal and child health and family planning should be considered areas of choice. In diarrhoeal diseases, applied research should enhance the role of rehydration therapy in reducing mortality. On schistosomiasis control, there should be a change of approach, with the focus on reducing morbidity rather than interrupting transmission.

Short courses on research methodology, technical cooperation in designing research protocols, and training grants continued to be used to strengthen national research capabilities. National workshops on research methodology were held in the Philippines in 1986 and in Viet Nam in 1987. A report on international cooperation in health research and technology transfer was prepared in 1986 and distributed to Member States (11).

Following circulation for comment and discussion of the global Advisory Committee on Health Research's subcommittee report on health research strategy for health for all, together with the comments of a small group of members of the regional Advisory Committee, research priorities were reviewed and updated in line with the regional strategy for health for all.

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General health protection and promotion

Women, health and development

The United Nations Conference on Women, held in Copenhagen in 1980, and the World Congress of Women, held in Prague the following year, highlighted that socioeconomic development, including health development, could not be achieved without significant changes in the condition of women, whose unequal status was seen as inhibiting and distorting development. While all WHO programmes could be considered as contributing to the aims of the United Nations Decade for Women (1976–1985), the Organization made a special effort to increase awareness of the health priorities of women, and their roles in health care, by defining the interrelationship between the status of women and health development. This was done by asking how the social, educational, employment, and political factors influencing the status of women affected, or were affected by, health; how women's involvement in health care could be made more equitable and more effective; how women's organizations could be mobilized to promote PHC; and what kinds of societal, community, and family action were needed to ensure equity for women as mothers, and a better balance of men's and women's responsibilities.

As part of WHO's cooperation with nongovernmental organizations to strengthen the health components of their intersectoral programmes for improving women's status, an international meeting was held in Geneva in 1981 that brought together women representing non-governmental organizations and women's groups at community level. They questioned the "male-dominated health establishments" and urged that women's views be considered more seriously when health programmes were being developed. A working group met in Geneva in 1983 to discuss WHO's support to women's organizations with regard to PHC. It considered the roles of women in health promotion and the problems inherent in health services that affected their ability to adequately meet women's needs.

In all WHO regions, women's organizations were identified as a major resource with which stronger links were to be made. In the African Region, an innovative and comprehensive programme to increase women's involvement in health development was launched in 1980. It used village women's organizations as entry-points for PHC at the community level. By the end of 1983, 26 such organizations in 17 countries were participating. Each village chose various health and development activities to be implemented by the community, with technical support from governments and WHO. Special leadership training courses for women from the villages were conducted at the WHO Regional Training Centre for Maternal and Child Health and Family Planning in Mauritius.

Mechanisms to promote and coordinate activities involving women, health and development were established at all levels of WHO. Focal points and working groups were appointed at regional and global levels, and proposals drafted for general approaches as well as specific action. In the

South-East Asia Region, for example, a group was organized to explore women, health and development in all countries in the region, resulting in a regional paper on the subject (1).

National focal points were identified in the South-East Asia Region and the Region of the Americas, and in the latter region, a special subcommittee of the Executive Committee met regularly to monitor progress on the five-year plan of action. Momentum was considerably strengthened in 1984 when all the regional committees included in their agendas an item on women, health and development, and resolutions were adopted.

WHO prepared a report on women, health and development at the conclusion of the United Nations Decade for Women and to coincide with the 1985 Conference to Review and Appraise the Achievement of the Decade (2). The report drew attention to the special health needs of women and the key roles women played in promoting health and development. Actions taken at various levels to improve women's health and enhance their participation in health and development were summarized, with emphasis on action at the country level.

Reporting on the status of women, however, was handicapped by the poor quality of data. For example, only 37 of the 120 countries that reported on health-for-all progress were able to provide data on the availability of trained personnel for attending during pregnancy and childbirth. Nevertheless, there was a sense that the gathering of certain types of information was improving as more governments reported studies on topics related to women's health, such as the prevalence of anaemia and other nutritional deficiency diseases, low pregnancy weight gain, and the distribution of food within the family and its effect on the nutritional status of women and girls. At the global level, information was gathered on a variety of specific topics, such as female mortality, and support was provided to some countries to strengthen their data base on women.

To share the information and use it to advocate action, meetings were held in all regions. In the Eastern Mediterranean Region, WHO held a seminar on traditional practices affecting the health of women and children. In the Western Pacific Region, a meeting was convened to discuss the role of women in health education. Two intercountry seminar/workshops on women, health and development were organized in the Region of the Americas, and at the national level, similar meetings took place in Colombia and Cuba, and a workshop was held in Mexico. In the European Region, a major conference on women and health, held in 1983, was attended by 150 participants from 30 countries. Village coordinators for women, health and development in 17 countries in the African Region met in Brazzaville to develop their plan of work.

When it came to promotional activities, a popular booklet, *Mandate for change: women, health and development in the Americas*, and a more detailed publication, *Women in health and development*, were published in the Region of the Americas. In the European Region, WHO collaborated with the Women's Health Information Centre in the United Kingdom, which served as a source of literature and information and organized meetings on women's health.

At the global level, a clearing house was established to collect and provide information and material for WHO programmes and women's organizations throughout the world. Publications were prepared that highlighted specific women's issues within a programme area; described women's health issues as a whole, combining existing information from all programme areas; and detailed certain health problems from a women's perspective. Other activities included preparing and distributing, in collaboration with the Joint United Nations Information Committee, an information kit on women, health and development, and contributions on the subject to several radio programmes and special issues of *World Health* magazine.

WHO collaborated with the International Labour Organization to prepare a publication on protecting working mothers, which summarized existing legislative provisions on maternity

benefits on a regional basis, and emphasized the need to extend the extent and coverage of such provisions to a wider population; more allocated time and better facilities for breastfeeding, for example. Other important pieces of legislation included: the minimum legal age for marriage; women's rights in marriage, and in divorce, rape and abortion; harmful traditional practices; access to credit; and basic constitutional guarantees of equality, including equal pay for equal work. Regional reviews and replies to the United Nations questionnaire to assess progress during the Decade for Women showed that several countries had enacted or changed such laws in recent years.

The Joint WHO/United Nations Children's Fund (UNICEF) Nutrition Support Programme was initiated in 1982 to support action by the health sector for improving the nutritional status of children and women. It aimed to promote activities to: increase women's income; improve their productivity; increase their access to adequate dietary information; and reverse negative social and cultural attitudes affecting their dietary patterns.

The Thirty-eighth World Health Assembly discussed the report on women, health and development (2) in May 1985 and unanimously supported its content and conclusions on forward-looking strategies, adopting resolution WHA38.27 to this effect. The Director-General was requested to continue to cooperate with and provide expertise to Member States to promote women's physical and mental health – this included informing and educating the public – and to assist more women participate in health and socioeconomic development, particularly as decision-makers. The Director-General was also asked to help Member States evaluate how health development programmes and social services had affected the situation of women generally and helped protect and promote their physical and mental health.

The World Conference to Review and Appraise the Achievements of the United Nations Decade for Women, held in Nairobi in July 1985, adopted the Nairobi Forward-looking Strategies for the Advancement of Women. In 1986, the Thirty-ninth World Health Assembly adopted resolution WHA39.18 on how these strategies were to be implemented. The Director-General established a steering committee at WHO headquarters to support the planning of activities as an integral part of various programmes and to coordinate and harmonize support to Member States and the WHO regional offices.

A consultation was held in Geneva in December 1986 to review country and regional plans of action and global and interregional programme activities. The Decade for Women had highlighted that “women were overworked and undervalued, and that the feminization of poverty was an important issue for concern ... Poverty breeds poor health and poor health limits people productivity and capacities, thus perpetuating poverty. Prevailing customs and attitudes that discriminate against women severely limit their educational and economic opportunities.” (3) The consultation aimed to be a “springboard to action” by incorporating women, health and development “systematically into WHO's Eighth General Programme of Work”. Each programme was reviewed with reference to the general and specific health needs of women; the potential contribution of women to achieving health for all; and women's health as a resource for development. Some of the subsequent proposals made by the consultation group are described below.

On health system development, collaboration with nongovernmental organizations and other agencies at country and regional levels should be promoted to obtain and disseminate morbidity and mortality data on women, including maternal morbidity and mortality and its causes; all mortality and morbidity data should be disaggregated by gender. Research on women's health problems and risks should also be promoted, and the capacity of women to carry out

health service research strengthened. Legislation was needed to improve the health and social status of women of all ages.

On human resources for health, intersectoral action was required to increase the enrolment of girls in primary and secondary schools, and to expand training possibilities to enable women to attain higher positions in health institutions. In the area of accident prevention, special attention should be given to domestic accidents, including those resulting from cooking and collecting water. Accidents among elderly women, those occurring in schools and playgrounds, and traffic accidents should also receive attention.

On tobacco and health, educational efforts aimed at women should be strengthened, including information on the relationship between smoking, low birth weight and intrauterine growth retardation, and the increased risk of thrombosis and myocardial infarction among female smokers who used oral contraceptives.

Human reproduction research should consider the medical, legal, ethical, physiological and social consequences of the new reproductive technologies in the developing and developed world. Worker health initiatives should promote the health of pregnant working women and working mothers, particularly those who were lone parents. The different determinants and patterns of alcohol use and abuse by females and males of all ages, and society's reaction to them, should be examined more closely so that appropriate measures could be developed to prevent and treat specific abuse-related problems.

National institutions should be encouraged to use WHO handbooks on essential surgical and medical procedures and anaesthesia, relevant to conditions encountered in district hospitals, in the basic training of nursing and midwifery personnel in addition to that of physicians. Further research on the possible adverse effects of drugs on pregnant and lactating women should be promoted. In the area of sexually transmitted diseases (including AIDS), sex education for girls should be reinforced, with emphasis on close collaboration between women's groups and schools to develop and implement strategies. Special programmes for women on smoking prevention should be developed.

The consultation emphasized that women, health and development was "not a vertical programme but rather an expression of attitudes, awareness and activities aimed at integrating women's aspects into all programmes". A steering committee or similar mechanism should be established in all regions. All regional offices and headquarters should have a full-time staff member working on women, health and development activities. Additional budgetary resources should be available. At country level, it was recommended that the WHO representative should give necessary support to the national focal point for women, health and development.

Another consultation, on leadership training for the women, health and development programme, held in Geneva in September 1987, recommended a plan of action that included approaches, processes and educational materials for Member States to adapt and use. Advocacy to create an awareness of women, health and development issues among decision-makers was furthered by a new global database on health and related issues that had special implications for the health of women of all ages and their participation in health development programmes.

An interregional meeting on the role of women's organizations in PHC, with special reference to maternal and child health/family planning, was held in Jakarta in November 1987. It was attended by 50 participants from 13 countries representing a variety of health and social disciplines, as well as by representatives of international organizations. The findings of three WHO-supported studies on the situations in Ghana, Mali and Mexico were reviewed. In Mali, the national women's organization was actively involved in promoting family planning, often in

conjunction with income-generating activities. In Ghana and Mexico, while women's organizations were active in many areas, their potential for engaging in PHC and family-planning activities had not been fully realized. They needed to have more information to be more effective.

At this meeting, plans were developed to: promote the reproductive health of women; pursue information, education and communication (IEC) activities for both women and men on their complementary roles; mobilize the mass media for IEC; promote intersectoral activities and mobilize resources; develop women's capabilities as leaders; create awareness among women of their legal rights; and encourage men and women to share equally family resources and responsibilities.

An issue of the *World Health Statistics Quarterly* was devoted to women and health. Subjects covered included patterns and causes of excess female mortality among children in developing countries; the reproductive health of adolescent girls; maternal mortality; hormonal contraceptives and the risk of cancer; women and mental health; women and cancer; and the health status and use of the health services among older women (4).

In the WHO regions, the emphasis on activities varied according to women's socioeconomic and cultural conditions. In the African Region, village women were encouraged to participate in health care through their involvement in socioeconomic development, using the PHC approach. Half of the Member States had established ministries or national committees for women's affairs by the end of the decade.

In the Region of the Americas, nearly all Member States had national focal points for women, health and development in either ministries of health or national women's bureaux. WHO sponsored national seminars and workshops in all countries to raise awareness of women, health and development issues. Reduced maternal mortality, the control of cervical cancer, and occupational health were addressed as priorities among women's health needs.

The strategy in the South-East Asia Region was to define special areas to support women, health and development within technical cooperation programmes and to intensify collaboration with national and other United Nations agencies. All Member States developed national plans of action for women, health and development, which included activities for income generation, producing and distributing smokeless stoves, promoting environmental health, improved nutrition and research on women's priority needs.

In the European Region, the emotional needs of women during pregnancy and childbirth received increased attention. In the Eastern Mediterranean Region, an emphasis on protecting the health of the mother and the child touched upon family planning, breastfeeding and appropriate weaning practices, and the control and management of communicable and endemic diseases.

In the Western Pacific Region, the emphasis was on improving the women, health and development database, achieving greater involvement of women's organizations, and formulating a system for monitoring the social and health status of women. Improved maternal health, particularly reduced maternal mortality, was chosen as the starting point for improving women's health.

Nutrition

The agencies of the United Nations system had established a subcommittee on nutrition of the Administrative Committee on Coordination, which included the United Nations, UNICEF, the United Nations Development Programme, the *Food and Agriculture Organization* of the United Nations (FAO), the International Fund for Agricultural Development, the World Food Council, the World Food Programme, the United Nations Educational, Scientific and Cultural

Organization, the World Bank and WHO. At its first meeting, in September 1977, it agreed on a programme of work, which included evaluating nutrition intervention programmes, nutrition surveillance, nutrition in national planning, action-oriented research, and analysing external resources for improving nutrition in developing countries.

Resolution WHA30.51, adopted by the Thirtieth World Health Assembly in May 1977, called on the Director-General to strengthen the WHO nutrition programme, specifically in the following areas: research capacity, education and training; identifying problem areas, such as interactions between malnutrition and infection and productive capacity, and integrating relevant programmes; determining the most vulnerable population groups; designing systems for nutrition surveillance; and assisting ministries of health to introduce nutrition objectives into national development plans and to design and implement multisectoral food and nutrition policies and programmes.

After its review of the Director-General's report on the role of the health sector in national and international food and nutrition policies (5), the Thirty-first WHA adopted Resolution WHA31.47, which recommended that Member States give the highest priority to: stimulating permanent multisectoral coordination of nutrition policies and programmes, and to prevent malnutrition in pregnant and lactating women, and infant and young children, by supporting and promoting breastfeeding through public education; legislative and social action to facilitate breastfeeding by working mothers; implementing the necessary promotional and facilitating measures in the health services; regulating sales promotion of infant foods that could be used to replace breast milk; ensuring timely supplementation and appropriate weaning with locally available foods wherever possible; conducting action-oriented research to support this approach; and training personnel to promote such an approach.

The Director-General was requested to develop, in cooperation with Member States, a programme of research and development in nutrition that addressed these priorities; take measures to coordinate international activities to promote breastfeeding, and to work in close collaboration with other United Nations agencies active in this field; cooperate with national institutions in their problem-solving research and training programmes to strengthen their capacity to combat malnutrition, and to stimulate technical cooperation among developing countries in this field; and to help mobilize scientific and financial resources in support of a global effort to eliminate malnutrition.

The objective of the research programme was to translate into operational activities the latest knowledge on improving nutritional status through community action. The emphasis was on meeting the needs of young children, including infants during the weaning period, through foods that were both nutritious and locally available. Nutritionists, health administrators and social scientists from countries in different regions met to help plan the programme, and sub-committees on nutrition were established by the global and regional advisory committees on medical research. In the African Region, investigations aimed to determine simple indicators of nutritional status, the most effective surveillance methods and post-weaning dietary regimes, and appropriate technology for storing foodstuffs. In the Region of the Americas, research into nutrition was conducted at the Institute of Nutrition of Central America and Panama and the Caribbean Food and Nutrition Institute, as already noted. In the South-East Asia Region, the evaluation of ongoing nutrition work in PHC programmes aimed to reinforce the nutrition component of such programmes. In several regions, there were studies on nutrition and feeding practices as they related to diarrhoea, and research into methods to prevent nutritional anaemia.

Various meetings helped shape the research priorities of the nutrition programme. Meeting in 1980 to discuss the role of the health sector in food and nutrition, an expert committee identified three types of nutrition research that it considered relevant to support health measures:

research on the health significance of nutritional status indicators; research on measures to control malnutrition; and health services research (6). On the latter, although there was sufficient technical knowledge available on which to base community intervention programmes, there was still a lack of evidence on the effectiveness of such measures, particularly in view of the constraints on manpower, financial resources and supporting infrastructure for delivering services. The Executive Board's discussion of this committee's report drew attention to problems in the acceptance of *Codex Alimentarius* standards (see Chapter 13). While the *Codex Alimentarius* Commission was encouraged by evidence of steady progress in the acceptance of standards by Member countries, it hoped there would be a further increase in efforts, and recommended that where a country was unable to indicate acceptance, it should consider distributing foods free of charge in conformity with *Codex* standards.

An international meeting held in Jakarta in October 1980 on controlling vitamin A deficiency and xerophthalmia listed the following research priorities: increasing vitamin A and provitamin A intake; epidemiological assessment of clinical diagnosis, vitamin A status, dietary factors, interrelationships of vitamin A deficiency, and malnutrition and measles; determining the impact of a programme; controlling the factors that impair vitamin A absorption and utilization; and controlling the ocular factors contributing to xerophthalmia (7).

WHO cooperated with Member States in the African, South-East Asia and Eastern Mediterranean Regions to consolidate national gains in preventing and controlling vitamin A deficiency. Following the example of the South-East Asia Region, work began in the African and Eastern Mediterranean Regions to prepare strategies to control iodine deficiency disorders. In the Region of the Americas, WHO and UNICEF collaborated with Bolivia, Ecuador and Peru to try to prevent and control endemic goitre and cretinism, while in the Eastern Mediterranean Region, WHO supported the Islamic Republic of Iran and Pakistan in developing iodine deficiency disorder control components to include in their national nutrition strategies.

In May 1986, the Thirty-ninth World Health Assembly adopted resolution WHA39.31 on preventing and controlling iodine deficiency disorders. WHO subsequently assisted the Administrative Committee on Coordination subcommittee on nutrition to prepare a combined global strategy and proposal for a multiagency 10-year programme of support to Member States in this effort. The Joint WHO/UNICEF Nutrition Support Programme prepared a guide for health administrators and managers on how to prevent and control iron deficiency anaemia, with emphasis on the contribution of PHC (8).

A meeting was jointly convened by WHO and UNICEF in Geneva in October 1979 on infant and young child feeding (9). About 150 participants, including representatives from the infant food industry, addressed five themes: encouraging and supporting breastfeeding; promoting and supporting appropriate weaning practices; information, education, communication and training; health and social status of women in relation to infant and young-child feeding; and appropriate marketing and distribution of breast-milk substitutes (10). A joint FAO/WHO/United Nations University expert consultation on energy and protein requirements, which met in Rome in October 1981, outlined two sets of problems, one consisting of those biological questions that needed to be answered most urgently to provide better numerical estimates of human requirements, the other concerning epidemiological studies to test the validity of the estimates in populations under different environmental and social conditions (11).

The 1979 meeting (9) made recommendations on encouraging and supporting breastfeeding; promoting and supporting appropriate and timely complementary feeding (weaning) practices by using local food resources; strengthening education, training and information on

infant and young-child feeding; developing support to improve the health and social status of women in relation to infant and young-child health and feeding; and appropriate marketing and distribution of infant formula and weaning foods. The marketing of breast-milk substitutes and weaning foods should be designed not to discourage breastfeeding. There should be no sales promotion, including advertising to the public products to be used as breast-milk substitutes or bottle-fed supplements and feeding bottles. Promotion to health personnel should be restricted to factual and ethical information. The meeting called for an international code on the marketing of infant formula and other products used in breast-milk substitutes. WHO and UNICEF were asked to help prepare the code.

Early in 1980, WHO and UNICEF prepared a draft of an international code and organized consultations with concerned parties. Following these consultations, a second draft was prepared and presented to the Thirty-third World Health Assembly in May 1980. This draft was sent to all Member States and concerned parties for their comments and suggestions. A new draft was prepared for presentation to the Executive Board in January 1981 and the Thirty-fourth World Health Assembly in May of that year. To support national workshops and other activities for health, and other workers involved in supporting and promoting breastfeeding and improved infant feeding, background information pertinent to all five themes was compiled in one document (10).

The adoption of the International Code of Marketing of Breast-Milk Substitutes by the Thirty-fourth World Health Assembly was recognized as a historic event, being the first code of its kind. More than 80 countries contributed to its drafting, along with organizations in the United Nations system, the scientific community, nongovernmental organizations, consumer advocate groups, and industry. The code was seen, however, as a threat to private enterprise in some circles. An article written for the conservative Heritage Foundation, for example, advised US policymakers to curb WHO's (and the UN's) international activism, while WHO was advised to return to a narrower technical role (12).

The expert committee that met in Geneva in October 1980 (see above) was also asked to reassess the contribution of the health sector to the fight against malnutrition, through its direct work and in collaboration with other sectors (6). It recognized that greater awareness of the magnitude and severity of the problem of malnutrition and of its health and social consequences had prompted a multidisciplinary, multisectoral approach, yet there remained the danger that urgent needs and individual sectoral responsibilities, particularly those of the health sector, would be neglected. With this in mind, the committee outlined what the role of the health sector should be in alleviating the immediate problems as well as contributing to the long-term development goals. The topics discussed included the administrative structure of nutrition services in the health sector; the provision of adequate manpower; and nutrition research to support health measures.

During the 1980–1981 biennium it was recognized that resources for WHO's nutrition programmes were insufficient to make an impact. While there had been a promising reorientation in approach, large-scale action at country level was required. A five-year plan was developed with UNICEF as a step towards meeting these needs. The plan aimed to reduce infant mortality and morbidity, promote child growth and development, and improve material nutrition. In 1982, a pledge of US\$ 85.3 million by the Government of Italy permitted the formal launch of this programme. That same year, projects were approved for three countries in Africa: Mali, Sudan, and the United Republic of Tanzania. The following year, projects were developed for nine other countries. By the end of the decade, the programme was operating in 17 Member States in four regions. During country reviews, it was found that most countries had made substantial progress in incorporating

improved nutritional status into national development policy, and in creating dynamic relationships among the health and other sectors for achieving the objective. In a few cases, however, programme activities were not fulfilling operational targets for reasons discussed below.

The legacy of 'vertical' or isolated nutrition programmes within the health services remained an obstacle. Also, health workers at all levels, but particularly at community level, were inadequately trained in nutrition. WHO's training, therefore, sought to emphasize the tasks the trainee would be required to carry out at a peripheral level. A model for training community health workers was developed in collaboration with national institutes and tested at courses attended by about 100 people from 40 countries. These courses were held in Hyderabad, India, in 1978; Ibadan, Nigeria, in 1979; and Zinder, Niger, in 1979. This model was in 1981 translated into guidelines for training community health workers in nutrition, and these also were tested in several training centres. Following suggestions from trainers from developed and developing countries, a second edition was published in 1986 (13). It contained nine modules: getting to know the community and its needs; measuring and monitoring the growth and nutrition of children; promoting breastfeeding; nutritional advice on feeding infants and young children; nutritional care of mothers; identifying, managing and preventing common nutritional deficiencies; nutritional care during diarrhoea and other common infections; conveying nutrition messages to the community; and solving nutritional problems in the community. Using these revised guidelines and social mobilization, the Joint WHO/UNICEF Nutrition Support Programme training initiative in the Iringa region of the United Republic of Tanzania achieved considerable success. About 170 rural communities organized regular growth monitoring and reporting, and other activities for improving nutritional status.

Training community health workers in nutrition required a change in the curricula of other health cadres, including nutritional specialists, physicians and nurses. Incorporating community aspects proved difficult while "stereotyped curricula mainly concerned with biochemistry and metabolism" remained. Such difficulty became "more marked when trying to incorporate into training the simplified and appropriate technology needed for primary health care". To introduce the necessary changes required the combined efforts of many ministries and disciplines, including the services of institutions concerned with health, agriculture, education, information, culture, and management; a practical, workable coordination mechanism between institutions and units concerned with training, research and implementing nutrition activities, geared to the needs of primary health care; and revised curricula at all units giving training in nutrition that addressed actual community problems using modern task-oriented methods of education and incorporating intersectoral perspectives. WHO should lead efforts to gather support from the Joint Nutrition Support Services, United Nations and non-United Nations agencies and appropriate foreign universities to assist in funding and in supplying technical support (14).

A document titled *Measurement of Nutritional Impact* was issued by WHO in 1979 for field use in supplementary feeding programmes, particularly those supported by the World Food Programme. It was revised in the light of experience gained in many countries and published for a wider audience in 1983 in the form of guidelines (15). The objectives of these guidelines were to assist countries receiving food aid identify the presence and/or absence of nutritional changes in selected population groups benefiting from food supplements (infants, preschool children, and primary-school children); and to enable recipient countries to modify, where necessary, the scope and organization of supplementary feeding programmes based on the measurements carried out in pursuit of the first objective.

An International Workshop on Nutritional Surveillance, held in Cali, Colombia, in July 1981, was sponsored and supported financially by the UN's Administrative Committee on Coordination subcommittee on nutrition, for which Dr Abraham Horwitz served as Chair as PAHO Director Emeritus from 1986 to 1995. The workshop was also supported by the Foundation for Higher Education of Colombia, the Agency for Technical Cooperation of the Federal Republic of Germany, the Kellogg Foundation, the Pan American Health Organization, the United States Agency for International Development, the University of Valle, and WHO. The background document prepared for this workshop was subsequently revised by a team led by the Cornell Nutritional Surveillance Program into a book that examined the role of nutritional surveillance; outlined a procedure for deciding the precise purpose of surveillance; set out the principles for all nutritional surveillance; and provided guidance specific to the organization and data requirements of national surveillance systems (16).

The wide dissemination of a report on nutritional surveillance helped stimulate interest in growth monitoring in several regions. An international seminar on nutrition was held in Malaysia in March 1982; and nutrition surveillance systems, most often including workshop training sessions and nutrition surveys, were organized or reviewed in China, Kiribati, Macao, Malaysia, Papua New Guinea, Vanuatu and Viet Nam. In the African Region, the development and application of a model for use by communities strengthened nutritional surveillance in 10 countries.

WHO, UNICEF and FAO agreed in 1987 to harmonize their approach to nutritional surveillance by combining experience and resources to ensure governments received appropriate and timely support. Such support would take the form of training in compiling, analysing, managing and applying information, and in establishing functional surveillance systems directly linked to action through nutrition policy-making, planning, and programme management. At the same time, they aimed to generate information on trends in the key human nutritional indicators that could be used internationally to promote awareness of the probable effect of economic adjustment policies on health and nutritional status.

Oral health

The WHO global oral history data bank, which included data on 112 Member States at the beginning of the decade, showed that while some industrialized countries were experiencing a reduction in at least one of the two main oral diseases, namely dental caries, oral disease problems had intensified in nearly all developing countries. For some of these countries, several sets of data made it possible to define a specific, measurable and practical goal: it related to dental caries, and was measured as a mean value at 12 years of age of the index labelled DMF, which stood for *decayed + missing + filled* teeth per person. The strategic point on that index was three DMF teeth per 12-year-old child, as this was the crude average in developing countries where dental caries were increasing, and also the level to which highly industrialized countries that had national prevention programmes had managed to reduce the disease.

This goal was largely accepted by the dental profession, WHO having proposed it to the International Dental Federation (IDF). National chief dental officers, meeting at the Federation's World Dental Congress in Paris in 1979, proposed that the 1980s be designated the decade of prevention for oral diseases. Four joint working groups were established with the IDF at the beginning of the decade, with specific measurable goals. Three of the groups aimed to improve

methodology in public health spheres; the fourth dealt with educational objectives and curriculum guides for all levels of dental manpower.

A position paper was presented to the Fortieth World Health Assembly in May 1987 outlining procedures for a partnership between WHO and the IDF, and the dental profession's response to the vast changes taking place in oral health status and needs. The paper also described the elements of basic oral health care and "health through oral health" that underscored all of WHO's oral health strategies, approaches, activities and projects. A blueprint was developed to guide the "partners for oral health" initiative; the training and services development projects supported by Arab Gulf Programme for United Nations Development Organizations; the research projects supported by the Swedish International Development Authority (now known as the Swedish International Development Cooperation Agency) and the Swedish Agency for Research Cooperation with Developing Countries; and developments in methodology and technology.

The two opposing trends – high prevalence in developing countries and low prevalence in developed countries – coupled with the existence of simple preventive measures that had been shown to reduce oral disease, stimulated a common strategy for Member States and WHO, in a supportive role, to pursue. The strategy was outlined to the Thirty-sixth World Health Assembly in resolution WHA36.14 (1983). While it was considered premature to declare 1984 a turning point for developing countries in their efforts to safeguard oral health, the signs were good; in that year, the DMF figure peaked at 2.53 before falling to 2.16 in 1986. In developed countries the downward trend continued: 4.53 (1980), 3.88 (1984) and 3.82 (1986).

WHO's role in this strategy was to help countries analyse their situation and establish policies and goals, along with measurable plans and programmes, and identify obstacles to their achievement; ensure the international collaborative oral health development programme could overcome those obstacles by emphasizing prevention, mediated through PHC structures; support the training of manpower, both dental and non-dental; and help develop alternative systems for community oral health care. These aspects of WHO's role were carried out globally in all regions.

An expert committee met in Geneva in September 1983 to address prevention methods and programmes for oral health. Talks centred on: established methods to prevent and control dental caries; methods available to prevent, but more especially, control gingivitis and periodontal diseases; the role of health education and health promotion in the prevention and control of oral diseases; and guidelines for setting priorities in planning and selecting procedures/regimens for preventing oral diseases (17). The committee concluded that "although not all the etiological factors were known with certainty, either for dental caries or for periodontal disease, enough was known today to bring about a dramatic reduction in both diseases, if not to eliminate them completely". WHO was advised to expedite the preparation of a manual on oral disease prevention programmes. Countries were advised to give high priority to health education and promotion, with oral health workers working alongside other health and community workers to encourage country policies and a political will favourable to preventive oral health programmes. Countries were urged also to make full use of the International Collaborative Oral Health Development Programme.

A planning manual had been prepared earlier (18) along with the *Guide to the Epidemiology and Diagnosis of Oral Mucosal Diseases*, and *Conditions and a Guide to Oral Health Epidemiological Investigations*. The new planning guide concentrated on planning and implementing preventive programmes (19). Five examples of planning were included, along with

eight annexes covering different aspects of prevention, including oral cancer, developmental defects of dental hard tissues, and dentofacial anomalies.

In several regions, there were plans to establish demonstration centres (with a strong extra-mural component) to advise on service delivery methods, prevention, manpower and epidemiology. The first such centre was opened in Thailand. Others followed in China and the Syrian Arab Republic. The centres were used to strengthen technical cooperation between countries at different levels of development and to disseminate standard methodology, both on integrated planning and for improving teaching and technology. They helped further international collaborative research, on the intake and metabolism of fluoride in different cultural and nutritional settings, for example, and to evaluate alternative health-care delivery systems. Useful material for these centres emerged from an international collaborative study of dental manpower systems, to which 11 countries contributed.

Although there was a delay in establishing a demonstration, training and research centre in the African Region, there was considerable activity in analysing the changing situation and, by using the PHC approach, in tackling the main threats to oral health in several Member States. Four country projects involving bilateral and multilateral aid drew on the international collaborative programme. Special attention was given to studying traditional methods in efforts to promote oral health. At the end of the decade, an intercountry centre for oral health was established at Jos in Nigeria.

In the Region of the Americas there was a strong preventive drive, especially in the area of salt fluoridation, although monitoring results was hampered by a lack of recent data on oral health status. To overcome this gap, improving information systems and developing appropriate oral health indicators were emphasized. Both the new data on oral health status and the preventive drive were supported by various studies on alternative delivery systems, developing educational and information materials and activities, and promoting simplified equipment and materials.

The demonstration centre in Chiang Mai, Thailand, became the Intercountry Centre for Oral Health in the South-East Asia Region. There, the performance logic approach was tested when training personnel and delivering oral health preventive and curative services. Performance logic was a system that sought to coordinate all aspects of a health-care process, including operator posture, operator/patient relationships, equipment and instrument design, operator training, and operator procedure, to ensure optimum efficiency and minimal operator stress. The simple apparatus produced by the centre for use in households to remove excess fluorides from drinking-water also helped promote oral health at the periphery. The work of this centre was strengthened by collaboration with the Sparkman Center for International Public Health Education (see Chapter 8).

By the end of the decade, the European Region could report that preventing dental caries was continuing to change the oral health situation in Europe. Salt fluoridation had brought further gains in prevention, notably in France. Both the quantity and quality of dental health education was improving in the region, though the pace of change could have been more rapid. The main thrust of regional activities was in the coordinated planning of oral health services, with emphasis on prevention, producing appropriate manpower and developing technology.

In the Eastern Mediterranean Region, Member States continued to consolidate their oral health programmes through situation analyses and subsequent planning. The work of the Demonstration, Training and Research Centre for Oral Health in Damascus was a leading example of how “health through oral health” was relevant to a wide range of situations and

settings. All categories of health personnel received training at the centre in broad preventive programmes, with oral health as the central theme. The centre applied the performance logic approach in its training of dental auxiliaries.

The Western Pacific Region was characterized by some of the biggest increases and decreases in oral disease in the world, with a spectacular reduction recorded in French Polynesia. A variety of approaches to dental health education, prevention and treatment were applied in countries and areas of the region.

The Chiang Mai centre hosted a WHO expert committee in late 1985 to discuss alternative systems of oral care delivery (20). Changes in disease prevalence, in demographics as a result of ageing and urbanized populations, and in relevant technology, required a revised framework for oral health care, one that emphasized PHC, starting with self-care, health education and health promotion, and complemented by restorative care. The committee was asked to explore the effectiveness of the alternative system of oral health care being tested in Chiang Mai, including the performance-logic training curricula and community care system.

The committee concluded that, although there were numerous ways to cover a population, the application of performance logic, as being tested in Chiang Mai, was an effective means of doing so as part of the common strategy for oral health. The committee reaffirmed the need to develop referral services to absorb the demand resulting from PHC activities. WHO should act as the focal point for distributing information to help develop a network of performance logic users.

Another expert committee met in Chiang Mai in December 1987 to discuss monitoring and evaluating oral health (21). In reviewing the WHO Oral Health Programme, the committee noted its “logic, breadth and innovatory approach, as well as its efforts to adapt to new situations and needs. The early emphasis of the Programme was on epidemiological methods and surveys, and on developing the Global Oral Data Bank, which served to indicate the direction in which the programme should go. Subsequent programme areas – measurable goals, data-based planning, recruitment and training, health services research, alternative systems of oral care delivery and specification of care settings – have responded to the challenges identified and have had a widespread effect in improving oral health and care. They have also led to the present emphasis on healthy lifestyles and quality of care and to a partnership with the International Dental Federation, thereby involving the whole dental profession in this broad range of initiatives.”

Accident prevention

During the 1982–1983 biennium, the accident prevention programme was expanded beyond the concern with motor vehicle accidents, which was its initial focus. Administrative responsibilities for the programme rested with the European Regional Office, where the road traffic accident programme was initiated in 1975. Work-related accidents remained the responsibility of the workers’ health programme. The activities of the accident prevention programme included: epidemiology and data collection; training; support for country policy and planning; and research.

The programme developed in accordance with the recommendations of a review group, which met in early 1986, to broaden the scope of the programme beyond road traffic accidents to encompass injuries and other sectors involved in accident and injury prevention. Domestic accidents were to be seen in their community context rather than restricted to the home.

In all regions, an assessment of the extent and characteristics of accidents confirmed that in industrialized countries, accidents remained a leading cause of death for more than half the span of human life beginning at birth, and that the situation was rapidly worsening in developing countries. Analysis of data in 59 countries showed few where accidents were not among the leading five causes of death, and the leading cause of death among young people. It was recognized that mortality figures were insufficient to adequately assess the situation, and that greater emphasis on recording morbidity and disability, and their consequences, was needed.

A survey in 41 developing countries, conducted early in the decade, provided epidemiological information on road traffic accidents. These were presented to an Interregional Conference on Road Traffic Accidents in Developing Countries held in Mexico City in November 1981 at which 50 countries met to formulate national strategies for prevention. The conference was the first worldwide review of accident prevention policies (22).

Following on from this conference, WHO collaborated with several countries, with a view to formulating policies and programmes for road traffic safety. Intersectoral seminars and workshops took place in the South-East Asia Region, in Bangladesh, Burma, India, Indonesia, Sri Lanka, and Thailand, and their conclusions were reviewed at an intercountry workshop in Dhaka in November 1983. Similar activities followed in the African Region, the Region of the Americas and the European Region.

WHO was closely involved in preparations for the First International Congress on Road Safety in Africa that was held in Nairobi, Kenya, in 1984 and organized by the Economic Commission for Africa in cooperation with the Finnish International Development Agency. Following a broad intersectoral exchange between transport and health interests, a plan of action was formulated that was used by WHO to support special training programmes in the African Region.

WHO's collaboration with the transport sector was strengthened through its involvement in a European Commission-sponsored forum on new policies for road safety. The forum was held in Aix-en-Provence in October 1986 and organized by the Government of France as part of the European Road Safety Year.

Road safety policies developed by several European countries were reviewed at a joint seminar organized by WHO and the United Nations Economic and Social Commission for Asia and the Pacific on road safety. This seminar was held in Bangkok in March 1987 to develop recommendations on decentralized road safety policies and establish networks of policy-makers and heads of national institutions in the field of road safety to facilitate information exchange and technical cooperation, particularly in research.

A WHO study group on new approaches to preventing road traffic injuries met in Geneva in December 1987 to analyse traffic safety policies in selected countries worldwide (23). Proposals were made for innovative approaches to traffic safety, particularly through improved intersectoral coordination and closer cooperation between transport and health sectors.

Pilot epidemiological surveys were initiated jointly by WHO and the International Children's Centre (ICC) in Benin, Brazil, Senegal and Turkey to document the problem of accidents in developing countries. The surveys were assessed by a working group that met in Ankara, Turkey, in November 1982. Various types of accidents common to many countries were examined, enabling preliminary guidelines on prevention to be prepared. The group also prepared a protocol for country surveys. Both the guidelines and the protocol were finalized at an interregional symposium, held in Manila in November 1983, which was organized jointly with the ICC and the International Paediatric Association (IPA).

Using the new protocol and following a WHO/IPA workshop on research development in child accidents that was held in Cuba 1984, coordinated research on child safety, involving departments of health and national paediatric associations, started in six Latin American countries. Following a meeting of investigators to assess the first phase of the project, the programme was extended to countries in the South-East Asia and European Regions.

In Cuba, activities in two districts were extended to the whole country, and a national committee on accident prevention was established. A WHO recommendation on preventing accidental injury in childhood and adolescence was endorsed by the IPA. It emphasized safety promotion within PHC, with community participation – families, children and adolescents – and that of nongovernmental and consumer organizations. In collaboration with the IPA, a manual for community maternal and child health teams was pilot-tested during the 1986–1987 biennium.

A WHO/ICC working group met in Paris in 1985 to review the problem of violent deaths and accidents among adolescents in the context of risk-taking behaviour in this age group. As a follow-up to this meeting, a manual on research development in this field was produced. The manual included models of protocols for epidemiological surveys, curricula for training various health professionals and guidelines for programme evaluation.

A working group organized jointly with the International Center of Social Gerontology met in Bordeaux, France, in June 1982. This group highlighted the increased risks for the aged as a result of rapid changes in their environment, such as type of habitat, and the use of new technologies in day-to-day life. Research on falls by the elderly was initiated in seven countries (Australia, Belgium, Canada, France, Sweden, Switzerland and the United States of America) based on a protocol established at a workshop held in Versailles in 1985 in cooperation with the International Centre of Gerontology and the Kellogg Foundation's International Scholarship Program on Health and Aging.

Following a broad review of the literature, a protocol for studying the epidemiology of burns was developed and pilot-tested in one burns centre in Denmark and eight in India, in collaboration with the Indian Burns Association. An interregional workshop held in New Delhi in 1985 assessed the pilot phase and established a plan to coordinate further research. New studies were initiated in Japan, Turkey and the USA. The Tokyo Women's Hospital was designated as a WHO collaborating centre on research and training in burn prevention and management.

A broad analysis of accidents in the community, especially in domestic settings, was initiated in 1985. This was followed by a comprehensive review of domestic safety programmes and legislation in Australia and countries of Europe and North America, as well as an analysis of domestic injuries – particularly their sociocultural and economic determinants – in India and several other developing countries. Two collaborating centres were designated: on domestic safety in Amsterdam, and on injury prevention at the Centers for Disease Control and Prevention in Atlanta, USA. Pilot programmes were undertaken during the 1986–1987 biennium in Cuba, Kenya, Nepal and Thailand, with a view to formulating principles to manage community safety. Work on developing community safety programmes was initiated with the International Organization of Consumers Unions and its member organizations, particularly in Asia, during this period.

The first interregional postgraduate course on injury prevention in developing countries was held in June 1983, in cooperation with the School of Public Health, Johns Hopkins University, Baltimore, USA. Seventeen countries from five WHO regions sent participants, mostly senior personnel holding administrative posts in government, major health agencies, or schools of public health. Training material was prepared so that similar courses could be organized in other parts of the world.

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Protection and promotion of the health of specific population groups

Maternal and child health, including family planning

The main thrusts of this programme were: technical support to countries to strengthen national capabilities for developing and delivering integrated care; developing and evaluating appropriate technologies for preventing and alleviating major maternal and child health problems; developing and evaluating training modules and materials in maternal and child health, including family planning, together with guidelines to be adapted to suit specific teacher-training and community needs; and support for research into how health system infrastructure, communities and families could best apply maternal and child health/family planning technologies, and to strengthen links with other elements of PHC.

In 1979, the International Year of the Child, a comprehensive report on maternal and child health was presented to the Thirty-second World Health Assembly, outlining the health status of mothers and children throughout the world, trends in developing relevant services, advances in technology, examples of action that could be taken by countries, and suggested activities to strengthen technical cooperation (1).

The subsequent Health Assembly resolution (WHA32.42) gave the Organization a strong mandate to further reorient its policies. Member States were urged to ensure appropriate national resources were available for maternal and child health work and to promote direct and massive action in line with the concept of PHC. This required the support of individuals, families and communities, facilitating intersectoral collaboration, and utilizing all community workers, including traditional birth attendants. Such an approach implied a radical change in the way most maternal and child health care was organized, since traditional services were geared to curative and rehabilitative care, with limited coverage.

The United Nations Children's Fund (UNICEF)/WHO Joint Committee on Health Policy met in January 1979 to review the programme of support for training health and other workers in socioeconomic development in maternal and child health/family planning. It outlined a new approach that was intended to promote national self-reliance and based on the use of health teams, extensive field training, and curricula that took into account the priorities of the community and were built from task analyses made at the local level.

Practical methods of problem definition and task analysis at the local level enabled PHC workers in maternal and child health/family planning to acquire their knowledge in real situations. Training centres were located in the rural communities with which they were directly involved. The emphasis was on improving the pre-service and in-service training of health workers, with a view to transferring responsibilities to the appropriate level and promoting the use of such resources as traditional birth attendants and community development workers.

Support was given to developing curricula suitable for community-oriented programmes and to producing teaching/training material.

International and regional teacher training ensured capabilities were more rapidly built. Support was given to regional training centres in Singapore and Mauritius, while numerous study tours and courses were organized. A workshop module was prepared for teaching members of local groups how to elaborate learning materials for non-literates. Particular attention was paid to the need for this type of material in the Eastern Mediterranean Region.

WHO support to maternal and perinatal health care and the care of the newborn was directed to improving pregnancy care, birth practices, and postpartum and neonatal care, particularly for births in developing countries that were not attended by trained personnel (estimated to be about 50% of the total). WHO provided such support to more than 90 countries or territories in all regions, either directly as executing agency, or together with other bodies, in the majority of cases in close cooperation with United Nations Population Fund (UNFPA). As a result, coverage provided by health services, training, and health services research was increased, and progress made in promoting community participation and intersectoral action. In several African, European, and Western Pacific Region countries, for example, women's bureaux and community groups were involved in the programmes. In the Eastern Mediterranean Region, many of the pilot projects were reformulated and expanded into nationwide programmes. In the Region of the Americas, links were strengthened with other sectors of socioeconomic development, such as education, agriculture and labour.

Two extensive literature reviews, several studies, an interregional meeting, and a monograph, all of which dealt with maternal mortality, bore witness to the great gap in PHC coverage for women, both during and between pregnancies. Cumulatively, this information suggested that the issue was not one merely of coverage, but related also to how services were organized for appropriate referral, quality of care and supervision, and how PHC was integrated with traditional community perceptions and attitudes towards pregnancy and delivery care.

An interregional meeting was convened by WHO in Geneva in November 1985 to highlight the magnitude of maternal mortality and morbidity, and to suggest ways to reduce them as part of the strategy for health for all. Participants, reporting on recently completed studies in more than a dozen countries, helped to precisely define the problem and analysed its magnitude and causes with a view to prevention. Participants concluded that significantly reducing maternal mortality would not be possible unless women had access and timely referral to basic obstetric services.

The International Conference on Safe Motherhood, held in Nairobi in February 1987 and cosponsored by WHO, UNFPA and the World Bank, with support from United Nations Development Programme and many bilateral development agencies and private foundations, was a landmark event in recognizing the prominence of maternal mortality among health problems and the need to reduce its prevalence as a matter of priority. A practical outcome of the conference was a fund to support operational research on safe motherhood, for which WHO was the executing agency. The Fortieth World Health Assembly, in May 1987, adopted resolution WHA40.27 calling for greater cooperation with Member States in maternal health and safe motherhood activities. Informal mechanisms were established for regular coordination and collaboration among the agencies and the organizations of the United Nations system, foundations and nongovernmental organizations to support regional and national action.

A critical annotated bibliography (2) on traditional pregnancy and delivery practices confirmed that there was a consistent cross-cultural pattern and that some traditional practices

were scientifically correct, such as an upright delivery position and the timing of cutting the umbilical cord.

The 1986 report of a working group on essential obstetric functions at first referral level filled a universally recognized information void in maternal care (3). It provided guidance on the skills, knowledge, equipment, supplies and facilities necessary for such essential obstetric tasks as caesarean section, vacuum extraction and blood replacement. Direct measurement of haemoglobin – developed by GTZ (German technical cooperation) in collaboration with WHO – and guidelines for the local production and distribution of a ‘10-cent’ clean umbilical cord-care delivery kit to reduce the risk of neonatal sepsis were undergoing field trials at the time.

Perinatal deaths accounted for the largest proportion of the persistent high rate of infant mortality and lack of continued progress after an initial lowering of infant mortality. These rates were closely linked to the mother’s poor health and nutritional status and to pregnancy and childbirth complications, in particular those resulting from unregulated fertility and the absence or poor quality of maternal health services. As the rates were also associated with low birth weight, WHO started a study of low birth weight in different parts of the world during the 1978–1979 biennium to determine the most important local factors, testing specific preventive measures and emphasizing the role of the community. Work was carried out initially in the Latin American countries through the Latin American Center for Perinatology and Human Development to develop appropriate technology for perinatal care at home and at the village level. WHO also initiated several studies in 1981 on the social correlates of infant mortality. Joint activities were undertaken with various organizations and institutes to explain vulnerability of children to certain situations of poverty, such as those related to child labour abuses, abandoned children, urban squatters, and the ‘fourth world’ pockets of destitution that exist even in affluent societies.

Among the technologies developed were simple risk profiles for use by traditional birth attendants, and delivery kits designed to ensure the ‘three cleans’: a clean delivery surface, clean hands, and clean cord-cutting and care. In addition, more than 20 institutions in all regions collaborated with WHO to develop simple weighing scales, or, where a substitute for weighing was required, a system of measuring arm and chest circumference. These studies demonstrated that measuring chest circumference was a reliable substitute for scales to distinguish low-birth-weight infants. The focus on weighing newborns was to identify low-birth-weight infants delivered by a trained traditional birth attendant, family members or by the mother alone, in order to identify infants potentially in need of closer monitoring, supervision or care.

One outcome of the studies on weighing was a computer software package for analysing and adapting different weight-chest circumference cut-off points. A simplified scoring system for estimating gestational age was studied and tested in a similar way. Weighing scales and weighing procedures were among the subjects that continued to be addressed by the WHO/UNICEF working group on appropriate technology in maternal and child health/family planning.

A collaborative study was undertaken by WHO to obtain a reliable picture of practices in infant feeding, in particular breastfeeding. The study, funded by UNFPA and the Swedish International Development Authority, had two phases. In the first, information was obtained from about 23 000 mother-and-child pairs in at least three groups: rural, urban poor and urban economically advantaged in nine countries. The second phase was an investigation of the volume and composition of breast milk. Results from the first phase showed that, contrary to what had hitherto been alleged, the decline in breastfeeding was greatest among the urban poor in developing countries, i.e., the population at highest risk; health services were deficient

in encouraging breastfeeding; and breastfeeding was compatible with the working and living patterns of modern society if suitable support was provided.

The steps that WHO and Member States were taking to encourage and support breast-feeding and appropriate weaning practices – providing training and information, improving the health and social status of women, taking action to ensure the appropriate marketing and distribution of breast-milk substitutes – were reported to the Thirty-seventh World Health Assembly in May 1984 (4). Following an international workshop in Harare in 1983, sponsored jointly with UNICEF and the Commonwealth Secretariat, a guide on implementing the International Code of Marketing of Breast-milk Substitutes was published (5).

Inappropriate health-care practices, which betrayed a lack of understanding among health workers about the physiology and psychosocial dimensions of breastfeeding, were among the major obstacles to promoting breastfeeding. In response, WHO prepared information and education materials to increase awareness among health workers. These included a brochure; a film and discussion guide on health-care practices and breastfeeding promotion, produced in collaboration with UNICEF; and a review of how low-birth-weight infants could be fed under varying physical and socioeconomic circumstances.

Throughout the decade, the Organization promoted home-based records of child growth as one way families could detect faltering growth in the early stages and seek help before the damage from malnutrition was done. Following a series of field tests, the Organization published in 1978 a growth chart (6) that could be used by the family (the mother) and the primary health worker. An updated chart, published eight years later, took into account the experiences of the countries in using the first (7). It placed a stronger emphasis on adapting the growth chart and home-based records to particular health situations and programme objectives, leaving the choice of design to programme managers and health planners.

WHO convened an informal consultation in 1984 to review the patterns of serious childhood diseases and disorders – meningitis, encephalitis, convulsions, neonatal jaundice, jaundice in older children, tuberculosis, swollen joints and bones, and asthma – in the African Region, the Region of the Americas, and the South-East Asia and Western Pacific Regions. The consultation identified priority areas for action, in addition to deficiencies in information, services, technology and training. To address these deficiencies, it recommended action at family, community and PHC levels, including the development of educational materials, guidelines for various levels of service delivery and types of health workers, and diagnostic and managerial techniques and tools. Guidelines were prepared for dealing with some of these serious diseases, such as meningitis, neonatal jaundice and seizures, while several Member States began to evaluate diagnostic tools for use in PHC, including devices and approaches for detecting these diseases.

A WHO interregional workshop on research methodology and techniques for action-oriented research on the health aspects of child labour, held in Bombay in May 1984, resulted in a training manual and workshop guidelines for such research. In September that year, WHO and the International Society for Prevention of Child Abuse and Neglect jointly sponsored a workshop in Montreal on the needs of urban squatter children. The plight of poor urban children in general was also discussed, including the relevance of day care to meeting their health and development needs, and serving as a focus for community mobilization and extending maternal and child health services. This work led to the health situation and needs of such children and opportunities for intersectoral action on their behalf being analysed (8), and a programme framework for promoting child health, nutrition and development through various

types of day-care arrangements. These were reviewed at an interregional meeting convened jointly with the International Children's Centre (ICC) in Paris in May 1986. The ICC, the Van Leer Foundation and WHO also collaborated on a programme to integrate child health and development activities with those having a bearing on social support for women and promoting female literacy.

As part of preparations for the International Youth Year: Participation, Development, Peace (1985), WHO convened a study group in June 1984 on young people and the Global Strategy for Health For All by the Year 2000 (9). The group reviewed adolescent and youth health and health-related issues, and analysed the relevance, resources, and service gaps of established health systems as they related to the specific needs of this age group. The study group emphasized the impact of developing healthy lifestyles during adolescence and the health effects later in life that might result from attitudes formed at this time to smoking, drinking, drugs and reproductive behaviour. It recommended adopting national programme strategies to meet more fully the health needs of this age group, and also to tap the group's idealism and creative energy to help achieve national health goals. A background paper on sex education laws and policies was published separately (10).

The Thirty-eighth World Health Assembly, in May 1985, drew attention to the disastrous worldwide health, educational, economic and social consequences of premature pregnancy in adolescents, in particular, the high risks of maternal morbidity and mortality, and low birth weight, with its attendant risks for infants. In resolution WHA38.22, on reaching maturity before childbearing and promoting responsible parenthood, the Health Assembly urged Member States to take immediate action in pursuit of these, and requested the Director-General increase the Organization's collaboration with them. Particular emphasis should be placed on promotive and preventive programmes for adolescents, including family life education and antenatal, delivery and postnatal care.

The Organization used workshops as a primary means to analyse the reproductive health needs of adolescents and to develop and implement action-oriented health systems research to meet them (11). Several workshops based on this methodology were held in 1985: one in Bangkok; one each for the English-speaking and French-speaking African countries, in Nairobi and Port Louis, respectively; and a national workshop in Havana.

WHO's technical support to national family-planning programmes focused on improving service coverage, efficiency and quality by disseminating information on new contraceptive methods, stressing the managerial and training needs for specific contraceptive methods, and strengthening evaluation within maternal and child-health/family-planning programmes. New or updated WHO technical guidelines were issued on specific contraceptive methods, including barrier methods and injectables, on vasectomy, on natural family-planning methods, and on the role of cytological screening in preventing cervical cancer.

WHO stressed the integration of population variables into overall health and development planning, where the challenge was to find practical methods for analysing existing population and health data, and for discerning trends and projecting them nationally. The Organization developed tools to aid such analysis and tested their suitability in international workshops held to investigate important variables that influence national decision-making in this area.

Family planning, as an integral part of the maternal and child-health component of PHC, figured prominently in the discussions, and in the conclusions and recommendations of the International Conference on Population held in Mexico City in August 1984. WHO contributed extensively to the preparations and to the conference itself, where it highlighted the

interrelationship of fertility and mortality, the role of family planning as health action, and the importance of maternal and child care as key elements of PHC.

International attention was focused on the integral relationship of family planning and women's development at the European Parliamentarians' Forum on Child Survival, Women and Population: Integrated Strategies, which was cosponsored by WHO/UNFPA/UNICEF and held at The Hague in February 1986. This forum addressed the need for action to satisfy unmet family-planning needs. As part of its advocacy role in the overall health aspects of family planning, WHO jointly sponsored, with the International Planned Parenthood Federation, the Population Council, UNFPA and UNICEF, an international conference in Nairobi in October 1987 on better health for women and children through family planning.

WHO's collaboration with nongovernmental organizations played a critical factor in changing the programmes of international and national congresses so that they took into account different aspects of PHC. One such example was provided by the joint WHO/International Federation of Gynecology and Obstetrics (FIGO) task force that led to the *International Journal of Gynaecology and Obstetrics* publishing special issues, one on fertility and lactation, and another on traditional birth attendants. A WHO/FIGO manual on human reproduction for use by university teachers, with emphasis on public health and social approaches in family planning and obstetrics and gynaecology, was also published.

One consequence of the reoriented policy developed at the beginning of the decade was the programme carrying out health services research using the risk approach, a managerial strategy to improve the coverage and quality of health services based on the measurement of individual and community risk. Methods of implementing this concept were tested in a few countries, and the results were published in 1978 (12). Preliminary results indicated that this approach was feasible on a large scale. The importance of the risk approach was also stressed by the subcommittee on health services research (maternal and child health) in its report to the 24th session of the global Advisory Committee on Medical Research in 1982.

Training activities in the risk approach were expanded in response to requests by Member States for support to strengthen national capacities for health services research. Support was provided for training workshops and seminars held at interregional, regional and national levels. On the basis of experience gained, the principles and applications of the risk approach were revised (13). An interregional task force was convened in Maastricht, the Netherlands, in October 1983 to develop a teaching guide for training PHC workers in the basic concepts and use of the risk approach. This was followed by a workbook on how to conduct risk-approach studies for use in two-week workshops (14), and a document for use in one-day promotional workshops (15).

By the end of the decade, national health authorities in all WHO regions had adopted the risk approach, and several countries in the Region of the Americas and one in the African Region had incorporated it into the curricula of their schools of public health. Beijing Medical University was in the process of being designated a WHO collaborating centre in the risk approach and health-systems research.

Human reproduction research

The Special Programme of Research, Development and Research Training in Human Reproduction was WHO's major resource for research in family planning, including infertility. It was almost fully financed by extrabudgetary resources. Donors included Australia,

China, Cuba, Denmark, Finland, the Federal Republic of Germany, India, the Netherlands, Nigeria, Norway, Sweden, Thailand, the United Kingdom, the USA, and UNFPA. In addition, substantial inputs were made by national authorities to collaborative research and institution-strengthening activities. Data collected on the extent of these contributions in 1982 showed they more than matched those of the Special Programme. There was a consensus among the donors that the Special Programme should not accept earmarked contributions owing to fears other areas might be neglected.

Through the Special Programme, governments and scientists were able to collaborate on research and institution-strengthening. They jointly identified priorities, devised strategy, conducted activities, assured quality, and disseminated results. By the end of the decade, 80 countries, including 54 developing ones, were participating in the Special Programme, and about 500 research projects were proceeding at 254 centres. In the last biennium of the decade, a total of 26 research training courses, symposia and workshops were held; 234 research training grants were awarded to scientists from 35 countries; and about 500 scientific publications emanated from research activities supported by the Special Programme. These developments were written up in a full report of programme activities published each year and widely disseminated.

Meetings of the collaborating centres were held annually until 1975, then at longer intervals. At their 1981 meeting, the directors agreed that the scientific and financial support to the centres “had led a number of them to help strengthen other institutions in their own country and had thus a multiplier effect. The tying-in of research and institution-strengthening in the network to the Task Force mechanism and participation in Steering Committees had, in itself, a strong institution-strengthening impact. Belonging to the network gave centres greater authoritativeness and had enabled them to make much better contributions to national meetings” (16).

The programme targets, outlined in the Seventh General Programme of Work, were to: determine the long-term safety of fertility regulation methods that came into use between 1970 and 1977, and assess the acceptability and side-effects in different populations of more recently developed methods introduced before 1985; complete, for use in family-planning programmes, at least six new methods being developed; reach an advanced stage of clinical testing with another three methods, including one for male users, and develop simplified methods to diagnose the causes of infertility; strengthen, to the point of self-reliance, at least one research facility in each of those developing countries that, by 1984, had national policies on and services for family planning; devise, through service and psychosocial research in as many of the countries that had requested collaboration, the means to integrate family planning into PHC in the manner most appropriate to local conditions; and clarify the etiology of certain common diseases of reproduction, such as trophoblastic diseases, and improve approaches to their therapy. Inadequate funding led to the latter target receiving a low priority, and finally, to its abandonment during the 1984–1985 biennium.

Resolution WHA31.37, adopted in 1978, urged the Director-General to intensify health service research under the Special Programme in order “to facilitate the complete integration of services for fertility regulation into primary health-care systems of the countries concerned”. Fears that such integration might dilute the former led to investigations to determine whether there was such a linkage. Studies were carried out in India, Kenya, Peru, the Republic of Korea and Sri Lanka. First results from Kenya, after 18 months of operation in four rural clinics providing integrated maternal and child health/family planning care, showed that about 21% of all sexually active women of reproductive age in the study area were using contraceptives. This was well above the national average of 5–7%, which was also the rate in the areas when the project

began. Results from other studies, while not as dramatic, demonstrated other benefits from integration. For example, in the Republic of Korea, while the acceptance of family planning was about the same in the study areas and in the control areas, the increase in coverage of prenatal care in the study area was greater, as was postpartum care. In the latter instance, in 1984, 66% of mothers and newborn babies were receiving postpartum care in the study area, compared with 32% in the control area.

On manpower for family planning, a key concern of the programme was to identify, train and supervise the wide range of staff that could contribute to motivation, education, providing family planning methods, and follow-up. Studies were conducted to determine the best ways to train and use lay workers, community leaders, traditional practitioners and health personnel. Educational material for training non-medical personnel in any culture to teach natural family planning methods was developed in the course of a three-year project and evaluated in six countries. The learning package dealt with two methods: the ovulation method and the symptothermal method. The package included simple visual aids that could be used without any equipment and were suitable for teaching individuals, couples, and groups.

Two pilot projects, in Thailand and Turkey, trained midwives and nurses to provide clinical family planning services previously the preserve of physicians. In Thailand, the pilot project showed that operating-room nurses could be trained to perform postpartum tubal ligations as competently as surgeons, and with equally low morbidity rates.

The safety and efficacy in developing countries of fertility regulation methods were investigated at the request of national authorities concerned at having to use birth control methods that had been tested only in developed countries. For some methods, such as pills and intrauterine devices, guidance was requested on which preparation or device best suited particular populations. In other instances, controversy in developed countries over the safety of certain products – the injectable depot-medroxyprogesterone acetate, for example – spilled over into developing countries, which turned to the Special Programme for analysis and further research. The possible long-term effects, such as cancer, of some birth-control methods remained of concern in both developed and developing countries. Investigations were conducted mainly through the network of WHO collaborating centres, using common protocols, so that data of immediate local relevance could be obtained, interpopulation comparisons made, and sufficiently large numbers of subjects accumulated to find rapid answers to problems.

The Special Programme, recognizing the need for research leading to easier access to and better choice of fertility regulating methods, created a task force on behavioural and social determinants of fertility regulation. WHO's research plan focused on the processes by which individuals or couples adopted and used fertility regulation methods. Priority was given to studies on: the continuance of contraception; choice of contraceptive methods; issues affecting the introduction of new methods into programmes; the role of communities; the roles of women and men and the influence of those roles on reproductive behaviour; and the perceived costs and benefits of fertility regulation. About 30 research projects in developing countries were supported and monitored by the Special Programme. Research was also conducted to explore human resources for family planning and the integration of family planning within health services.

Governments sought guidance from the Special Programme on the safety of contraceptives. Injectable contraceptives, for example, had become a subject of worldwide controversy, so the Special Programme reviewed all available animal and human data in 1981 and distributed the conclusions to national authorities (17). Many countries changed their laws on family planning as a result of local studies showing the effect on mortality and morbidity, and the ensuing cost

to health services, when access to family planning services was poor or populations failed to use them. For example, studies on illegal abortion in Ankara, Ibadan and Kuala Lumpur, and in Caracas and Valencia in Venezuela, showed that the cost of providing hospital beds, drugs, blood transfusions and other scarce services for cases of illegally induced abortion was enormous, amounting to more than US\$ 1 million a year for the two cities in Venezuela alone.

The 1984 United Nations Conference on Population had stressed the urgent need to update the official requirements for assessing new fertility regulating agents. An important event in this regard was the Symposium on Improving Safety Requirements for Contraceptive Steroids, which brought together in February 1987 about 100 participants, including toxicologists, epidemiologists, clinicians and other biomedical scientists, together with representatives of drug regulatory and registration agencies, the pharmaceutical industry and consumer groups (18).

Research on several new improved methods of fertility regulation, appropriate for introduction into family-planning programmes, was nearly complete by the end of the decade. Two once-a-month injectables, HRP102 and HRP112, were expected to be available in 1988, and a levonorgestrel-releasing vaginal ring – effective for three months, it could be inserted and removed by the user – by 1990. It was thought a progesterone-releasing vaginal ring for use in lactating women would be available possibly in 1992. Other products expected to be ready for release by the early 1990s included a new two- or three-monthly injectable that was effective in much smaller doses than existing products; a new biodegradable implant that did not need to be removed at the end of its span of effectiveness; an anti-progesterone prostaglandin combination for use as a simple oral method of terminating pregnancy early; antifertility vaccine; and a possible long-acting male hormonal product.

Aware that many valuable drugs were derived from plants whose medicinal value had long been known to indigenous populations, including those that were believed to have fertility-regulating properties, a network of WHO collaborating centres, predominantly in developing countries, collected, extracted and evaluated about 300 species of plants with putative antifertility effects, selected over the course of the decade by means of an intensive search of the literature. Several new chemical entities, resulting from these studies, were shown to possess antifertility activity in rodents. These were isolated and subsequently synthesized for subhuman primate studies. Further development depended on the outcome of their preclinical safety assessments, which were still in progress in 1987.

When the Special Programme was established, it was anticipated that, after clinical research had been successfully completed, commercial companies would take over the products and use their expertise to manufacture and market the new methods. By the end of the decade, however, the pharmaceutical industry began, for various reasons, to reduce or cease its involvement in the field of fertility regulation. This imposed on the Special Programme the burden of introducing the new methods and of seeking the necessary funding.

Research on infertility was of particular importance to countries in the African Region. A simplified questionnaire was prepared to obtain a reasonable estimate of the prevalence of primary and secondary infertility, pregnancy loss, and infant and child mortality. The questionnaire, to be answered by community samples of 300–500 couples, was developed, pretested, and modified after field-testing in rural areas of Cameroon, Nigeria and Sudan. In the surveys of primary and secondary infertility, some high rates of infertility were found; 40% of women aged 30–44 in a Sudanese population, for example, showed primary infertility. Wide variation was also found in different population groups in the same country.

The Special Programme combined its institution-strengthening and research mandates by making fundamental the principle and practice of using research to strengthen institutions. Collaboration involved, from the outset, developing a research plan, assisting in the elaboration of research projects, introducing the required research training and buying equipment, and helping to establish methods and implement projects by regular visits to the institution. At the same time, scientists from the institution took part in collaborative research by task forces and in the planning and reviewing tasks of steering committees.

To ensure comparability of results in multicentre trials and other collaborative studies, a major effort was made to standardize and control the quality of laboratory procedures. This also helped strengthen institutions: providing well-validated methodologies, reagents, and the means to assess assay performance enabled many investigators to pursue otherwise difficult research projects.

Other strategies used by the Special Programme to strengthen the research capability of developing countries included the following:

- grants to institution staff, including for short workshops on specific subjects;
- training staff in charge of research at collaborating institutions in modern managerial techniques;
- establishing postgraduate training programmes leading to a Master's degree, mainly at the institutions that had been supported for long periods. Initially, these programmes focused on field-oriented disciplines, such as the social sciences and epidemiology.

In addition to providing guidelines, responding to numerous requests for information and issuing manuals, the Special Programme undertook a variety of activities to disseminate information to policy-makers, programme administrators, providers of services, scientists and the general public. Symposia and seminars were organized to discuss advances in research on fertility regulation and the results of studies in specific areas, such as: female sterilization; regulation of male fertility; plant-derived products; prostaglandins; immunological approaches to fertility regulation; pregnancy termination; synthesis of new compounds; psychosocial aspects of family planning; and infertility. The main way to disseminate the results of studies supported by the programme to the scientific community was through articles in professional journals.

Workers' health

The United Nations Environment Programme convened three meetings during the 1978–1979 biennium with the aim of instituting a global programme to be carried out by International Labour Organization (ILO), the United Nations Industrial Development Organization, WHO and other specialized agencies to improve the working environment. This led to WHO and the ILO reviewing and revising their Memorandum of Understanding, which dated back to 1954, and intensifying their cooperation in occupational health matters. In 1979, the Health Assembly (resolution WHA32.14) requested that the Director-General prepare a programme of action that would embody the new orientation of WHO's programme for workers' health in the coming years. It emphasized the need to strengthen coordination with other organizations in the United Nations system, particularly the ILO, and for effective technical collaboration with Member States in setting occupational health standards and guidelines. The meeting of a working group in November 1979 was the first step in elaborating such a programme.

The revised programme was presented to the Thirty-third World Health Assembly, which, through resolution WHA33.31, endorsed the programme of action on workers' health for the years 1979–1984; urged Member States to pay special attention to providing health care to working populations, particularly “underserved” workers; and requested that the Director-General “support the developing countries in ensuring safe working conditions and effective protective measures for workers' health in agriculture, mining and industrial enterprises by using experience available in this field”. This resolution was followed by intensified efforts to identify the major occupational health problems of underserved working populations in developing countries; initiate country projects in occupational health services and training; and develop occupational health knowledge and technology in cooperation with WHO collaborating centres in various parts of the world. A cooperative agreement with the National Institute for Occupational Safety and Health in the USA provided WHO with funds and personnel to help implement many programme activities that otherwise might not have been possible.

With the adoption of the Seventh General Programme of Work, the Organization's activities during the latter part of the decade concentrated on: developing workers' health programmes within the health services infrastructure and PHC in an increasing number of countries; augmenting the number of WHO collaborating centres to strengthen the international exchange of information; and developing a series of guidelines on health surveillance in workplaces, occupational exposure limits, control measures, and early detection and appropriate care of occupational and work-related diseases among various groups of workers.

WHO collaborated with Member States in field surveys to identify occupational health problems and develop practical methods to detect, evaluate and control various occupational health risks. Cross-sectional studies of workers' health problems in agriculture and small industries were made in Burma, Egypt, the Philippines, Sudan, the United Republic of Tanzania and several other countries. Miners' health problems, particularly pneumoconiosis, were investigated in Bahrain, Botswana, and the Republic of Korea. A research programme to monitor occupational exposure to chemical and physical hazards – and the effects on health – was carried out in Brazil, Bulgaria, Czechoslovakia, Poland, Switzerland and the USSR. An epidemiological study correlating various working conditions, workload and the health of workers was undertaken in the German Democratic Republic.

With the cooperation of more than 60 scientists and 25 collaborating centres, and on the basis of work carried out by a scientific group that met in October 1982, WHO finalized a draft of the first comprehensive guidelines for the early diagnosis, prevention and treatment of occupational diseases classified by causative factors and organ systems.

Work-related diseases, as distinct from specific occupational diseases, were the subject of a consultation convened by WHO in September 1982 to produce a tentative definition and review of such diseases. Following consultations with more than 100 scientists, a WHO expert committee was convened in November 1983 to discuss identifying and controlling work-related diseases (19). This committee proposed a working definition, reviewed existing knowledge and epidemiological data, and recommended preventive measures and further action to be taken by WHO.

The growing recognition of the importance of the psychological work environment led WHO to convene meetings on: psychosocial factors in injury prevention (July 1982); monitoring the psychosocial work environment and workers' health (November 1982); and methodology for monitoring psychosocial, environmental and health factors at work (October 1983).

About 20 international specialists collaborated on a book on psychosocial factors at work and their effects on health (20).

To help Member States develop health care for agricultural workers, who constitute the major sector of working manpower in developing countries, WHO convened an expert committee on the health of workers in agriculture in April 1983 and a consultation on the prevention of agricultural accidents in October that year. In May 1986, the Organization supported an interregional workshop in agricultural health at the Institute of Hygiene and Occupational Health in Sofia, and the following March, in San José, Costa Rica, a subregional seminar on the health of agriculture workers for participants from Central America. At the 10th Congress of the International Association of Agricultural Medicine and Rural Health, held in Pécs, Hungary, in August 1987, 40% of the scientific papers related to PHC; WHO presented a review of the health of agricultural workers in different parts of the world. An expert study on the health of miners was prepared for the Organization and used at a workshop on miners' health in Andean countries that was held in Lima, Peru, in October 1987. The Institute of Maritime and Tropical Medicine in Gdynia, Poland, was strengthened, with United Nations Development Programme support, to serve as a WHO collaborating centre. That same year, a second, updated edition of an international medical guide for ships was completed for publication. With regard to miners' health, the ILO and WHO cosponsored an international conference on pneumoconiosis in Bochum in the Federal Republic of Germany in September 1983. The Organization also collaborated on projects to control silicosis in mines in Bolivia, where there was also a project for dust control financed by the Inter-American Development Bank.

Drawing on the experience gained from field studies and other activities, a series of guidelines was produced to meet workers' health needs in developing and industrialized countries. Objectives were developed by the WHO study group on training and education in occupational health. A WHO expert committee on health promotion in the work setting met in Geneva in June 1987 and stressed that health promotion must be a part of occupational health care, that training in occupational health should include guidance on preparing health promotion programmes, and that work is in itself a potent contributor to health and well-being (21).

Work in occupational exposure to heavy metals had commenced several years before the start of the decade, and sufficient data had been gathered for the first study group to meet to discuss this subject in 1979. It recommended health-based permissible limits for the commonly encountered heavy metals – cadmium, lead, manganese and mercury – that constituted serious occupational risks (22). The aim of these efforts was to harmonize the varying standards set by institutions in different countries. This programme was carried out with the cooperation of the National Institute for Occupational Safety and Health in the USA.

A programme to develop methods for the early detection of health impairments from occupational exposure to health hazards had begun in 1976; in 1979, following various scientific meetings, a document was compiled on early detection of exposure to selected organic solvents and metals, such as benzene, carbon tetrachloride, lead, manganese and mercury. The document summarized the knowledge on the early signs of occupational disease caused by these substances and the corresponding diagnostic procedures.

Information on direct-reading instruments for airborne contaminants in the working environment, of special relevance to PHC and occupational health workers in developing countries, was collated and issued. Two guidelines on control technology – one for the iron and steel industry, and another for the ceramics industry – were being prepared at the end of the decade.

A WHO manual on the epidemiology of occupational health was published in 1986 (23). Preparatory work on this manual was undertaken in Paris in June 1982 when a group of 20 epidemiologists from various parts of the world met to revise material and devise the final structure of the manual.

The Joint ILO/WHO Committee on Occupational Health, at its 10th session in Geneva in September 1987, discussed the epidemiology of work-related diseases and accidents (24). It recommended a uniform system for investigating and reporting work-related diseases and injuries, and suggested modern methods to develop the system. At a WHO meeting on smoking as an occupational health risk, held at the New York Institute of Technology in July 1987, guiding principles were elaborated for controlling smoking at the work-place.

The effects of occupational health hazards on reproductive function was reviewed in 1986, together with proposals to establish national registers of congenital abnormality and occupational history as a source of sound epidemiological information on exposures at work. A scientific monograph published in 1987 provided guidance on the proper organization of work with visual display terminals (25).

Health of the elderly

At the beginning of the decade, health care for the elderly was associated with the disability prevention programme in the European Region. An interregional planning and coordinating committee met in 1979 to discuss the global programme, for which the European Regional Office was designated focal point. The Organization's preparation for and participation in the United Nations World Assembly in Vienna in 1982 helped stimulate this programme, as did the decision by the Thirty-fifth World Health Assembly (resolution WHA35.28) calling for the elderly to be included in national strategies for health for all.

In its statement to the World Assembly on ageing, WHO proposed that policies be based on 10 principles. The first, *equality*, aimed to ensure that elders shared the benefits of development. The second, *individuality*, required respect for differences in capability, which can increase with age. The following principles emphasized that special measures were needed to maintain *independence*. Too often, decisions were made for the elderly without any *choice* being offered; moreover *home care* and *accessibility of services* had particular significance for health in old age. The seventh principle, *cohesion between generations*, called for shared responsibilities in the life of the community. Special measures were necessary to help old people retain their *mobility*. Their *productivity* should be encouraged. And the aim in applying the last principle, promoting *self-care and family care*, should be prevention of disability. The International Plan of Action on Aging, together with the Declaration of Alma-Ata, was seen as providing a common framework for collective action by ordinary people, professionals, volunteers and governments to secure a healthier and happier old age for the world's senior citizens.

The programme budget for the financial period 1982–1983 included, for the first time, a global programme for health of the elderly, its three main elements being to deliver health and social services, appropriate technology, and information coordination and exchange.

Planners, service providers and academics from five regions attended the first international course on the epidemiology of ageing, which was jointly organized during the 1984–1985 biennium by WHO, the London School of Hygiene and Tropical medicine, and the Department of Health and Social Security of the United Kingdom. These annual courses were designed to

help Member States, and WHO itself, reconceptualize policies and programmes and devise imaginative and innovative strategies to promote the well-being of the elderly. *The wellbeing of the elderly: approaches in multidimensional assessment*, published in 1984, reviewed measures of established validity for assessing the functioning of the elderly within defined populations (26).

To provide an information base upon which countries could develop national policies, existing international data sources were exploited to compile national demographic and health profiles of the elderly for some 50 countries in four regions early in the decade. During the 1986–1987 biennium, efforts were initiated to integrate the demographic and health profiles on ageing prepared for Member States by WHO with the data derived from three other international programmes; that of the United Nations Statistical Office, the Aging World project of the United States Bureau of the Census, and the International Collaborative Effort on Aging of the United States National Centre for Health Statistics. This information included projections to the year 2000 and beyond, and was intended to make governments aware that the age structure of the population was changing and that this had social and public health consequences. At a WHO meeting on map-linked databases, held in Geneva in January 1987, illustrative data were presented in the form of maps, an interdisciplinary activity that allowed experience to be exchanged among health and other sectors in using geographical systems of information.

An early initiative of a collaborative group of WHO and nongovernmental organizations on ageing was to hold an interregional workshop, in Copenhagen in August 1983, on self-care and health promotion among the elderly. The aim was to help participants from all regions produce self-care manuals for the elderly and their families. To stimulate the application of existing knowledge, a review of work in protecting the health of the elderly – carried out through the Regional Office for Europe – was published in 1983 (27).

In January 1984, both the International Centre of Social Gerontology and the International Federation on Ageing were admitted into official relations with WHO. The International Centre set up a database to handle information on social gerontology, especially that related to developing countries, and, with WHO's support, organized a course in both French and Spanish (Annecy, France, June 1987) similar to that developed at the London School of Hygiene and Tropical Medicine mentioned above. The International Federation acted as a repository on a global scale for personal health-care material, and developed a guide for establishing day centres.

The WHO guide for teachers of health care for the elderly, prepared in 1983, was updated during a joint WHO/International Association of Gerontology and Geriatrics (IAGG) inter-regional meeting on education in health care of the elderly, held in conjunction with the Association's quadrennial congress in New York in 1985. The congress paid particular attention to the care of the elderly in developing countries. These two meetings provided the first opportunity for all those responsible for WHO regional programmes to gather to discuss current and future activities.

Technical guides were prepared on drug use, cardiovascular care, nutrition and mental disorders of the elderly, lifestyles leading to physical, mental and social well-being in old age, and the implications of ageing for nursing. These were reviewed by international experts to ensure global appropriateness. Technical guides on quality assurance in long-term care were published by the International Centre of Social Gerontology, and guides on hearing problems and falls by the Kellogg Foundation. A monograph on physical therapy was prepared jointly with the World Confederation for Physical Therapy.

In 1983, WHO undertook a study into two practical problems associated with ageing. The first was an intractable problem that causes widespread suffering, namely senile dementia. A

WHO scientific group met in Paris in August and September 1983 to review past and current biomedical and health services research on senile brain disorders. Its report contained an integrated plan for collaborative research that was submitted to the global Advisory Committee on Medical Research in October 1983. The second problem was the consequences for health of longevity. This question was discussed in Geneva in January 1983 by a WHO scientific group on the epidemiology of ageing. The group recommended epidemiological investigations directed to the maintenance of function (28).

Two scientific meetings – one on nutrition in the elderly, held in Washington, DC, in April 1985, and another on perspectives for immunological and neurobiological research in ageing, held in Geneva in May 1985 – made proposals to internationalize research on ageing, drawing attention to the potential to develop a preventive medicine of old age. The first major development following the recommendations made in 1983 by the WHO scientific group on senile dementia (29) was a WHO-supported conference, organized jointly with Alzheimer disease International and the WHO Collaborating Centre on Research and Training in Psychosocial and Psychobiological Factors and Health. The conference was held in Louvain, Belgium.

In June 1987 – on the recommendation of the Advisory Committee on Health Research – a special programme for research was established at the United States National Institute on Aging. Steering committees in the areas of epidemiology, mental health, osteoporosis and immune function drafted a five-year programme. Surveys on the needs of the elderly formed the regional contribution to this special programme.

A WHO expert committee that met in Geneva in November 1987 was the first to discuss the health of the elderly since 1974 (30). Progress in specific areas was reviewed, along with guidance on providing health care; personnel, education and information dissemination; and the balance between improving pension income and providing services. Recommendations were made on planning services; primary care; the family; long-term care; health promotion, disease prevention, disability postponement; education; environmental design; resource allocation; information dissemination; and research. Annexed to the report were descriptions of the role of indigenous health workers and policies for care of the elderly in Thailand, and the organization of health care for the elderly in the Soviet Union.

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Protection and promotion of mental health

Although mental health was addressed from the earliest years of WHO's existence under the leadership of Dr Brock Chisholm – WHO's first Director-General trained in psychiatry – only in 1977 did it become a Division, thus gaining the status of a major programme. During the previous decade, the Organization had established groups at national, regional and global levels capable of providing coordination for planning and implementing the programme, a development the Executive Board (resolution EB61.R28) found to be “an effective approach, contributing, *inter alia*, to multisectoral and multidisciplinary collaboration which is of particular importance in the field of mental health”.

The scope of the programme was considerably expanded to cover not only prevention and control of psychiatric disorders – the traditional concern of the mental health professions – but several new areas of work, including:

- programmes concerned with neurological and psychosomatic disorders, and with alcohol and drug dependence;
- the application of mental health knowledge in general health care;
- a new approach to the psychosocial aspects of health in general, which entailed not only the psychological side-effects of rapid socioeconomic change, but also a partnership between mental health workers and those working in disciplines or social sectors other than health, such as welfare, labour and education.

Some countries included mental health in their national strategies for achieving health for all by the year 2000. In seven of those (Brazil, Colombia, Egypt, India, the Philippines, Senegal, and Sudan) there was a collaborative study to: determine the feasibility of introducing basic mental health care for priority conditions into the health services; develop methods of priority selection for interventions; develop and evaluate methods of task-oriented training; evaluate the effectiveness of alternative, low-cost methods of mental health care introduced into basic health services; and develop and evaluate ways to stimulate the community's understanding of and response to mental disorders.

Preliminary results indicated that it was possible to define priority conditions according to predetermined criteria, to specify appropriate technology to manage those conditions in primary-care settings, and to define the tasks to be performed by health workers and community members. Methods of training and educational materials were developed for all health workers in the abovementioned study areas. Most health workers responded positively to the training; this was reflected in appreciable changes in their attitudes and knowledge. In all of the study areas in which neurotic disorders and situational reactions were recognized as priority problems in primary health care and for which data were available, a striking increase was observed in the diagnostic sensitivity of the health staff concerned. Careful monitoring showed that

drug utilization by primary-health workers was appropriate and in accordance with accepted practice. The interventions led to a rise in the number of individuals receiving effective mental health care; from practically zero (prior to the intervention phase) to levels of undoubted public health significance. In one area, 20 persons per 1000 population had made contact with mental health care services during the first three years of the intervention programme.

Based on the results of this study the study group on mental health care in developing countries that met in Geneva in September 1981 (1) concluded the following.

- The need for mental health services is as great in rural areas as in urban areas.
- Decentralized mental health services can be operated at the primary health care level in rural and urban areas in developing countries, and the methods of treatment provided are effective and seem acceptable to the community.
- Mental health care can be provided by general physicians and by health auxiliaries, including community health workers, after they have had limited psychiatric training; this approach has been adopted in many centres, which have produced training manuals in local languages.
- Some mental health skills should be taught to all medical staff, not just to enable them to help the mentally disturbed, but also to improve their delivery of all forms of medical care.
- The behavioural science skills of mental health workers can be used at times to help formulate and implement community development programmes, which also promote the health of the community, including mental health.

The study group stressed the need for each country to formulate its own mental health policy and programme built on the recognition that sufficient accumulated experience and scientific evidence indicated modern psychiatric treatment could and should be provided as an integral part of the general health-care system. The study group identified several priority subjects for research, including: psychosocial factors affecting health care; managing common disorders; protecting and promoting mental life; and evaluating the general health services' contribution to mental health care. The study group also made recommendations on the role WHO could play in developments at country level. The information gained through the study was widely disseminated through publications, national seminars and professional contacts.

A project of technical cooperation was initiated in 1977 at the request of the five countries forming the African Mental Health Action Group (Botswana, Rwanda, Swaziland, the United Republic of Tanzania and Zambia). This project pinpointed problems that other developing countries were also facing: the psychosocial effects of populations being uprooted and moving; disrupted family life; urbanization; delinquency; alcohol and drug abuse; and mental retardation in children. Since the main constraint to dealing with these problems was the lack of trained personnel at all levels, WHO concentrated on postbasic training: preparing an analytic report on selection criteria for the intake of nurse trainees and on the status of training institutes; and preparing training manuals, including flow charts, for the diagnosis and management of common mental disorders.

In the course of a major project undertaken by WHO in collaboration with the Alcohol, Drug Abuse and Mental Health Administration in the USA, 162 mental health experts from 45 countries and all six WHO regions gathered for the International Conference on Diagnosis and Classification of Mental Disorders and Alcohol- and Drug-related Problems, which was held in Copenhagen in April 1982. The aim was to review the general state of mental health research, particularly research dealing with the diagnosis of mental problems, their classification and

the terminology necessary for effective communication between different categories of health workers, planners and the public.

The conference emphasized the need to develop simple and reliable diagnostic procedures and guidelines for the epidemiological surveillance, classification and management of mental health problems in the context of primary health care, and to develop methods appropriate and acceptable to communities with different socioeconomic and cultural characteristics. Several task forces were formed to devise new tools for the mental health worker, the researcher and the planner. One such tool was the composite international diagnostic instrument, a standardized interview for community surveys that could elicit a lifetime history and diagnosis of mental health problems, including those related to alcohol and drugs, and be administered reliably by a lay interviewer with modest training. Other practical tools produced included a structured interview guide for the detailed clinical assessment of problems by specialists; an instrument to assess the nature and severity of social disabilities related to mental health problems; and simple diagnostic algorithms and charts that permitted mental health problems to be analysed and classified in accordance with concepts and schemes customary in different national systems of mental health care delivery. The first part of a comprehensive dictionary of common mental health terms was also prepared to improve communication and reduce terminological diversity (2).

Mental health coordinating groups were found to be an effective mechanism for formulating, implementing and evaluating policy at national and international levels. They brought together representatives of different disciplines (public health administration, health manpower development, health education, behavioural sciences, psychiatry, neurosciences), and different sectors (welfare, education, labour). WHO advised on the methodology for establishing such groups to provide a platform for the exchange of information and experience between countries.

WHO was instrumental in organizing intercountry workshops in Kenya, Rwanda and Swaziland, each devoted to incorporating mental health components in national health programmes. It also acted as a catalyst in mobilizing funds from the Government of Belgium, and from the African Development Bank, the Arab Gulf Program for Development, the Canadian International Development Agency, the Danish International Development Agency and the Norwegian Agency for Development Cooperation. Member countries of the African Mental Health Action Group regularly updated their national programmes. In the Region of the Americas, national mental health coordinating groups met and programmes were formulated in Argentina, Costa Rica, Nicaragua, Panama and Uruguay. The Organization also collaborated on evaluating mental health services for the state of Rio de Janeiro in Brazil; in designing national psychiatric services for Dominica; and in developing a psychiatric care programme for Grenada. In the European Region, mental health components were included in the medium-term country health programmes for Bulgaria, Greece, Israel, Portugal and Spain, while the final report of the study of mental health services in the region was published in 1987 (3). In the South-East Asia Region, mental health programmes were formulated in Bangladesh, Nepal and Thailand. In the Eastern Mediterranean Region, national mental health programmes were prepared in Democratic Yemen, Egypt, the Islamic Republic of Iran, Pakistan, Somalia and Yemen, while in the Western Pacific Region, such programmes were developed in China, the Philippines, the Republic of Korea and Viet Nam.

Information requirements for programming and management had changed significantly with the redefinition of mental health strategies in many countries during the previous decades. In response to government requests, WHO coordinated research on indicators of health and

mental well-being, emphasizing the psychosocial factors affecting health and the organization of health services. In an interregional activity, health planners and decision makers, representing countries in all WHO regions, agreed on core criteria for selecting indicators suitable for assessing, evaluating and monitoring national health strategies.

A review of the needs and programmes in all WHO regions, carried out during the 1986–1987 biennium, revealed a considerable increase in countries' awareness of mental health issues. This was also reflected in an increase in the number of countries in each region that had formulated national mental health programmes. Leadership skills remained scarce in mental health, however, particularly in developing countries, prompting WHO to organize mental health leadership courses. It was also noted that mental health programmes still suffered from insufficient information support. A core set of indicators of mental health and well-being, recommended by key decision-makers from eight countries, was disseminated for use in national health programmes monitoring and evaluation.

To make the network of WHO collaborating centres in the field of mental health more efficient and active, eight centres were disestablished and nine designated during the 1986–1987 biennium, resulting in such institutions being located in 60 Member States.

Psychosocial factors in the promotion of health and human development

At the start of the decade, 24 centres in 20 countries were collaborating in a series of epidemiological and behavioural studies on such matters as: the incidence of severe psychoses in different cultures; depressive disorders in various communities; new approaches to preventing social impairment and disability; the influence of stressful life events on mental health and human behaviour; the role of the family as a protective factor in maintaining mental health; and the relationship between mental and physical disease. Collaborative research also focused on assessing the psychosocial aspects of public health measures and programmes to improve the quality of life of the family and the community. Research findings were published in monographs and in scientific journals.

An interregional workshop on information transfer in mental health and the role of clearing houses was organized by the WHO collaborating centre on psychosocial factors and health in Louvain, Belgium, in February 1982. At this workshop, it was suggested that WHO should develop an international network of information centres on well-defined subjects of mental health concern (e.g., psychiatric epidemiology, alcohol abuse, drug dependence, the mental health of the elderly, mental retardation, suicide, psychosocial factors in health, and computerized information systems for mental health). Teams from specialized university departments, research institutions and government agencies in seven countries were invited to undertake this task and to prepare periodic reports on the world situation in their specific areas of concern, as well as appropriate bibliographies.

In October 1982, the global Advisory Committee on Medical Research, recognizing the magnitude of psychosocial and mental health problems and the importance of utilizing knowledge from biobehavioural sciences in health care, endorsed the following proposals of its scientific planning group: that a definitive, detailed programme be prepared in three priority fields (adaptation to rapid societal and technological change; alcohol problems, with special reference to prevention in adolescence; and promotion of child and family health by applying

biobehavioural principles in primary health care); that a series of publications be developed, including a monograph on behaviour and health in developing countries; and that a network of centres be established to strengthen the research and training infrastructure for the programme.

To fulfil the first of these tasks, two workshops were held, one in Washington, DC, in August–September 1983, and one in New Delhi in December that year. The Washington workshop, which brought together participants from 18 countries, made a series of specific proposals for research on the biobehavioural and mental health aspects of primary health care, emphasizing maternal and child health. The second workshop reviewed research possibilities and needs related to the impact of social and technical changes on mental health. That same year, PAHO published *Dimensiones sociales de la salud mental* (*Social dimensions of mental health*) and the Spanish version of *Depressive Disorders in Different Cultures*, originally drafted by WHO.

WHO coordinated activities to promote the mental health and psychosocial development of children in several countries. Action-oriented research on the identification and monitoring of milestones in psychosocial development in childhood was carried out in China, India, Pakistan, Senegal, Sri Lanka and Thailand. Linked to these efforts was the testing of methods to identify those families at risk of providing a home environment unfavourable to psychosocial development in children, with a view to focusing promotive and preventive efforts on families most in need. These studies led to the development of a home-risk card that helped to identify families in which children were at high risk of psychological and other health problems that might delay psychosocial development. Countrywide use of the card was supported in Sri Lanka, and adapted for use in India and Indonesia. In Pakistan, WHO collaborated with teachers to actively promote mental health and health programmes in schools.

A set of criteria to assess the psychosocial aspects and quality of day care was developed and tested in Greece, Nigeria and the Philippines. An annotated bibliography on child welfare legislation in a broad spread of countries was produced, with a view to drafting guidelines for Member States on how to ensure the mental health needs of children were adequately met. Studies on this question were undertaken in Colombia, India, and Papua New Guinea.

Information on priorities for research and collaboration was distributed to principal centres for research and training in child psychiatry in Europe. The results of a survey on current patterns of training in child mental health and on psychosocial development for primary health care workers in Europe became available in 1987.

In Geneva in July 1986, WHO convened a consultation of experts, who agreed on the protocol for a project to promote healthy behaviour in adolescence, when life-long patterns of behaviour were established. At the end of the decade, centres in each WHO region were carrying out pilot work on this project.

There was increasing evidence that behaviour patterns ranked high among the risk factors for widespread chronic noncommunicable diseases, and that the central nervous system mediated in specific ways the action of various environmental and intra-organism pathogenic causes. In light of this, WHO initiated a series of consultations with behavioural and neurophysiologists to seek bridges between the approaches of these disciplines and to propose interventions for prevention programmes. One such consultation, convened jointly with the Collegium Internationale Activitatis Nervosae Superioris, took place in Moscow in May 1985 and dealt specifically with the behavioural and psychosociological aspects of cardiovascular diseases. The first WHO collaborating centre for training and research in methods of assessing the quality of life of patients with chronic diseases was designated, in Amsterdam, in April 1987.

A review of the literature revealed a considerable number of studies that documented the deleterious effects on health of some psychosocial problems mainly prevalent in old age, such as bereavement, the need for social support, and relocation. A multicentre project was designed to evaluate interventions to mitigate the impact of such psychosocial problems on the health of the aged. In the first phase of the project to determine the impact of a major stress (bereavement) on the health of the elderly, a community intervention was evaluated. This was completed in 1986. A second phase, to evaluate the effectiveness of psychosocial support, was under way at the end of the decade.

Prevention and control of alcohol and drug abuse

In 1979, the Thirty-second World Health Assembly recognized that problems related to alcohol, in particular, to its excessive consumption, ranked among the world's major public health problems (resolution WHA32.40). It stressed the urgent need to strengthen national and international programmes. A WHO expert committee on this subject gathered in Geneva in November 1979 and emphasized that problems related to alcohol consumption could no longer be considered merely medical or moral problems of the individual, with repercussions on the welfare of his family; these problems were "now affecting the health, welfare and safety of total populations and, according to reports from some countries, even national development" (4). Careful consideration had to be given to the most appropriate local, national and international strategies for prevention and management to reach the sizeable populations concerned and to halt rising trends in alcohol problems.

The committee noted the steps WHO had already taken that would provide a firm basis for the further expansion of its activities, e.g. preparing, with the help of contributors from more than 80 countries, an international review of measures to prevent harmful alcohol-related activities (5). Another important project, which was undertaken in collaboration with study teams in Mexico, the United Kingdom and Zambia, investigated: the nature and extent of the physical, mental and social repercussions of alcohol consumption in urban and rural communities; existing resources or measures for dealing with such repercussions; and ways to improve the community response. It aimed to stimulate detailed research into alcohol problems and to help develop plans for an improved response. The committee felt that a network of centres and collaborators for research and training in alcohol-related problems should be established, starting with the research teams and centres involved in this project. It identified specific topics that would be suitable for international reviews, recommendations and guidelines:

- determinants, organization and consequences of international trade in alcoholic beverages;
- influence of licensing controls and pricing on alcohol consumption and alcohol-related problems;
- influence of rapid socioeconomic change on alcohol consumption and alcohol-related problems;
- alcohol problems among specific segments of the population, such as young persons and women;
- health education and training techniques and experience related to alcohol problems;
- assessment of the treatment and management of the alcohol-dependence syndrome;
- experience of prevention and management of alcohol problems in industrial and other occupational settings.

Although aware that the resources currently available to WHO in this area were limited (a situation that was soon ameliorated by financial support from the Nordic countries), the committee outlined a wide-ranging programme for WHO, which included: promoting the development and use of effective programmes of information and health education in cooperation with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and nongovernmental organizations; taking further steps to establish international criteria for collecting statistical and other information on the production, trade in and consumption of alcoholic beverages and on consequent problems; identifying, with the International Labour Organization, what initiatives could be taken to address the heavy costs to industry of problems, both human and economic, attributable to alcohol consumption, and the potential of programmes within the occupational milieu to prevent and manage these problems; and giving close attention, in collaboration with other international organizations, to existing and future trade policies and agreements that might potentially affect the availability of alcoholic beverages, including tax-free sales. Given that alcohol-related problems were a worldwide concern and the potential contribution of various governmental and nongovernmental organizations in the search for solutions, the committee recommended a mechanism be established to ensure collaboration between these bodies in implementing its recommendations. It considered WHO to be “the most suitable organization to initiate the development of such a mechanism”.

In February 1983, a workshop was held in Edinburgh, United Kingdom, to review the results of the interregional study on community and national responses to alcohol-related problems and to discuss the implementation of a programme in the European Region on the prevention of alcohol dependence as part of the Seventh General Programme of Work starting in 1984. In addition, a symposium on the control of alcohol consumption, held in Paris in June 1983, provided an opportunity for the synthesis of several recent activities by WHO to prevent and control alcohol abuse. To help community health workers and their trainers deal with alcohol and drug problems within the framework of general health and social care, the manual that had been pilot-tested during the 1984–1985 biennium was published in Arabic, English, French and Spanish, and translated into several other languages (6).

By mid-decade, four developing countries were collaborating on a study to test the relative effectiveness of various preventive strategies. To raise awareness among Pacific nations of the problems associated with excessive alcohol consumption, a joint South Pacific Commission/WHO conference on alcohol-related problems was convened in Nouméa, New Caledonia, in September 1985. Conference delegates discussed the range and magnitude of those problems in Pacific countries, and explored the determinants of excessive consumption patterns. It also formulated practical proposals for prevention and control.

Building upon previous activities in all WHO regions, particularly Europe, and upon a series of intercountry and national workshops in the African Region, experience was gathered on a range of approaches to policy development and implementation. These were brought together in a review of national policy measures that presented data on the current and potential impact of different strategies (7).

The first phase of a WHO collaborative study on how to identify and treat persons with harmful levels of alcohol consumption was completed in 1986 with the development of a valid cross-cultural screening instrument suitable for use in primary health settings. This was used to assess the relative effectiveness of simple treatment interventions, the results of which were applied directly to developing training approaches for a range of health and social service personnel.

The results of a comparative study of relevant legislation were published in 1986 (8), together with guidelines for assessing how legislation functioned and alternative approaches to developing and reviewing national legislation in this field (9).

Resolution WHA32.40 called for a stronger WHO capacity to respond to requests from governments to support their efforts in dealing with alcohol-related problems, and for WHO to encourage collaboration in “reviewing existing trade practices and agreements relating to alcohol”. On the latter point, the WHO Regional Office for Europe had already directed attention to this subject when helping to prepare for publication *Alcohol control policies in public health perspective* (10).

Detailed work on the public health aspects of international production and trade in alcoholic beverages became part of the WHO global programme on alcohol-related problems in 1981. Several working papers were prepared and preliminary case studies undertaken. Based on these and the further gathering of data on the production and consumption of alcoholic beverages, WHO was able to publish a report titled, *Public health implications of alcohol production and trade* (11). This study discussed the disturbing implications of the rapid growth of alcohol consumption in developing countries, a growth that was likely to be followed after a time by an increase in alcohol-related problems that would impose a severe strain on scarce economic and social resources. Non-commercial alcohol production in developing countries was identified as an area deserving further investigation. Information on that topic was unobtainable, although “anecdotal evidence of its importance abounds”. Further research could help to establish the importance of non-commercial production and to explore the public health implications of substituting commercial for traditional alcoholic beverages.

The study demonstrated the usefulness, from a public health viewpoint, of data on the production and consumption of alcoholic beverages, and pointed to the need for international agencies to improve the quality of data and to disseminate relevant information to those involved in national health planning and development. A clearer view of international trends would help WHO more effectively identify alcohol-related public health problems and work with countries to alleviate them.

Drug dependence is a state, psychic and sometimes also physical, resulting from the interaction between a living organism and a drug, characterized by behavioural and other responses that always include a compulsion to take the drug on a continuous or periodic basis to experience its psychic effects, and sometimes to avoid the discomfort of its absence (12). Much of WHO’s activity on the prevention and treatment of drug dependence was based on its responsibilities defined under the Single Convention on Narcotic Drugs, 1961 (modified by the 1972 Protocol) and the Convention on Psychotropic Substances, 1971. The 1971 convention required that the therapeutic value of psychotropic substances be balanced against the risk to public health and social well-being from their use. On the basis of such evaluation, recommendations were formulated and forwarded to the Secretary-General of the United Nations and subsequently debated at its Commission on Narcotic Drugs.

An expert committee on drug dependence met in Geneva in September and October 1977 to recommend ways to improve and hasten data collection for decision-making in the light of the different needs of Member States and of the WHO policy of technical cooperation with and between countries (13). The committee summarized the experimental procedures in animals and humans that could be useful in providing data to assess dependence and central nervous system alterations. The committee recommended WHO strengthen mechanisms that would give it timely access to data relevant to assessing those drugs likely to be covered by the Convention,

and that, on request, WHO should assist all parties to the Convention in their efforts to develop relevant data-collection methods by providing expertise and helping to train personnel. Also, on request, WHO should advise and assist parties to the Convention to conduct transcultural studies that would allow information on drug abuse to be collected in a more uniform manner.

The Executive Board in 1979 (resolution EB63.R29) urged parties “to pay due attention to the development of suitable instruments and measures to monitor the untoward consequences of drug dependence and abuse for public health and for society in general”. A review of data on the extent of drug abuse throughout the world was undertaken in collaboration with the network of collaborating centres for research and training in drug dependence, which at that time comprised five institutes, in Canada, Malaysia, Mexico, Thailand and the United States of America; two of those institutes also had programmes on alcohol-related problems. Projects aiming to strengthen the capacity of national authorities to prevent and treat drug dependence and to develop models for training primary health-care workers were underway in nine countries.

An expert committee on the implementation of the convention on psychotropic substances was convened in Geneva in September 1980 (14). It reviewed the technology for assessing the extent of such substance use, techniques for assessing drug-related health problems, and techniques for assessing drug-related social problems. The committee’s review led it to suggest how the quantity and quality of data that might be useful for assessing health and social problems could be improved, and how WHO should encourage and support longitudinal studies of high-risk populations, using appropriate control groups. Also, given that it was not feasible for developing countries to obtain the range of data available in industrialized countries, the expert committee recommended that efforts be made to determine what types of indicators would be most useful. The committee also urged WHO to help collect uniform and valid data from national agencies in cooperation with many agencies within the UN charged with summarizing reports.

Six review groups met between September 1980 and September 1983 to look at specific drugs. In many instances, recommendations were made for research into a particular drug. Recognizing the “enormity of the task of reviewing drugs and its increased complexity due in part to the number of drugs that required consideration”, the review groups recommended that a formal review of the process itself be conducted (15).

A working group on the prevention and control of drug dependence met in Manila in June–July 1983 to review the nature, extent and trend of major problems relating to narcotics and psychotropic drugs, and to examine reporting systems, restrictive measures and monitoring systems in use for cases of drug abuse. It also discussed management and treatment techniques being used for acute and chronic diseases, and formulated ways and means to improve the exchange of information and experience on controlling drug abuse.

The new procedures for reviewing drugs were outlined to the Executive Board in January 1984. They included the convening of an annual expert committee on drug dependence and a working group on programme planning; they also allowed for closer collaboration with sources of information, in particular the International Federation of Pharmaceutical Manufacturers and Associations and the pharmaceutical companies concerned. The new Guidelines for the WHO Review of Dependence-producing Psychoactive Substances for International Control (16) were formally endorsed by the Executive Board in January 1986 in decision EB77(3).

The project on epidemiological research and reporting of drug dependence tested operational tools that could meet the data-collecting needs of planners in developing countries where

drug dependence was a serious problem. Methodologies were established for surveying drug use in young people and in the general population, and for organizing reporting systems, including case registers. These were published in a series of WHO offset publications during the 1980–1981 biennium (17–20). A working group on the use of laboratory methods in the surveillance and epidemiology of drug dependence met in Manila in November 1978 and underlined the need to define national objectives in epidemiological research and subsequent measures, to select carefully the laboratory methods required, and to train staff in laboratory techniques for drug abuse programmes.

A study on the sociocultural aspects of drug problems in 15 countries analysed the epidemiology of the drug problem, patterns of drug abuse, health-care approaches, treatment and prevention. Based on 40 case studies of different forms of drug dependence in widely differing settings, it emphasized the importance of sociocultural considerations in selecting the approach to be adopted and demonstrated the practical implications of that approach for policy and programme formulation (21).

A project was undertaken to define the role of primary health care in preventing and managing drug dependence, particularly in rural areas of developing countries, and to develop a model for activities in this field within the existing primary health-care and basic health-care programmes. Participants from eight countries collaborating in this project took part in a WHO advisory group meeting on the subject in New Delhi in May 1983, and a manual for primary health-care workers on preventing and treating drug and alcohol abuse was prepared (22).

In collaboration with the United Nations Fund for Drug Abuse Control, and with its financial support, WHO continued to execute the health component of the integrated multisectoral programmes for controlling drug abuse in Burma, Egypt, Pakistan and Thailand. In all these programmes, developing effective treatment and prevention within the framework of existing social and health-care systems, using operational research to optimize resources, was emphasized. To increase their effectiveness, activities to control drug dependence were, as a rule, integrated into primary health care and social services.

During the 1982–1983 biennium, 35 countries and the WHO regional offices and collaborating centres took part in a project to compile descriptions of promising preventive strategies applied in different parts of the world. This led to the preparation of guidelines for national policy formulation, implementation and evaluation, which were revised for final publication in 1987 (23). In addition to providing guidelines, the review provided an overview of the major components of national drug abuse control policies in selected WHO Member States. Such components included: law enforcement; drug education and other preventive measures; facilities to analyse drugs; drug abuse information systems; monitoring drug utilization and adverse reactions; crop substitution programmes; the role of nongovernmental organizations; and mobilizing community resources and community participation.

During 1983, 22 investigators from 20 countries collaborated with WHO in a project to assess the role and effectiveness of methadone to treat and manage drug dependence, and to ascertain the relevant indicators and contra-indications, particularly in developing countries. A WHO advisory group that met in Minneapolis, USA, in December 1983 reviewed and endorsed the project report. This project was implemented in collaboration with the United Nations Fund for Drug Abuse Control, the United Nations Division of Narcotic Drugs, and WHO collaborating centres.

The United Nations Commission on Narcotic Drugs, in resolution 3 (S-VI) adopted in 1980, recommended that governments obtain information from WHO on the hazards of indiscriminately prescribing methadone to treat opiate dependence. In accordance with resolution 32/124

of the United Nations General Assembly, WHO requested that 20 countries summarize their experience with the use of methadone. Its role in these countries was analysed and a pertinent document finalized.

The chemical and pharmacological characteristics of controlled substance analogues, or designer drugs, were discussed at a meeting in Geneva in August 1986. Participants recommended that WHO continue to provide material to help countries manage the hazards of designer drugs. By the end of the decade, WHO had recommended five such drugs for international control. The chemical and pharmacological characteristics of these drugs were discussed at a meeting on the technical aspects of drug control held in Rabat in September 1987 and organized in collaboration with the United States Drug Enforcement Administration and the Government of Morocco.

A summary of WHO policy, strategies and programme activities was presented at a conference on narcotic and psychotropic drug misuse attended by health ministers in London in March 1986. The conference noted there was evidence of countries not utilizing the instruments that international agencies had established (24). For its part, WHO would continue to support the efforts of its Member States to develop appropriate technology, by improving the transfer of relevant information about policy and programme development, and by monitoring problems and working on solutions.

Prevention and treatment of mental and neurological disorders

At the start of the decade, there were 38 centres in 28 countries collaborating on 17 WHO-coordinated projects on the search for primary preventive measures to control mental disorders of major public health importance. Several important findings resulted from these studies. For example, collaborative research on the biological basis of mental disorders led to the tentative identification of new biological markers for schizophrenia and affective psychoses that could be used in studying high-risk groups.

Three major epidemiological studies, involving the collaboration of scientists and mental health workers in 18 countries, were completed during the 1982–1983 biennium. The aim of the first was to determine the incidence of schizophrenic illnesses in defined geographical areas in culturally and socioeconomically contrasting countries in all six WHO regions. More than 1800 men and women who had experienced an initial episode of a potentially serious and disabling psychotic disorder were examined and followed closely for two years in the search for etiological and prognostic indicators that might help to improve the treatment, care and support of such patients, as well as refine methods of diagnosis and clinical assessment. Closely linked in its aims, but taking a different approach, was the second of these studies, on assessing and preventing disabilities in schizophrenic patients. A system of interrelated instruments was developed for the early detection and monitoring of such disabilities and applied in a prospective investigation of about 600 patients in seven countries. The third study examined in detail the clinical and social characteristics of more than 550 patients with depressive disorders in four countries; a five-year follow-up of these patients was also completed.

The largest comparative study on the incidence, manifestations and course of schizophrenia was completed, and a preliminary report was published in 1986 (25). The study showed a remarkable and surprising similarity in incidence rates for schizophrenia in different cultures

and environments, and confirmed the findings of the WHO international pilot study on schizophrenia with regard to the difference in cause and outcome of mental disorders in developed and developing countries.

The Minimal List of Drugs for the Treatment of Neuropsychiatric Disorders was circulated and used in various centres for administrative and managerial purposes. A global project on the effects of various dosages of psychotropic drugs in different populations, in which 12 countries collaborated, helped clarify the efficacy of widely used antidepressant and antipsychotic drugs accepted as 'essential' drugs on the Minimal List. Studies in various countries investigated the efficacy and safety of psychotropic drugs and their optimal dosages, taking into account climatic, cultural and nutritional conditions. The results of these studies were published in the *Psychopharmacology Bulletin*.

The first issue of a WHO newsletter, *Biological approaches to mental health* appeared in March 1983 in English and French in *Progress in neuro-psychopharmacology and biological psychiatry*. This newsletter, which was published biannually, contained information on recent scientific findings, reports from WHO collaborating centres, research protocols of studies in progress, and information on forthcoming events. It was designed to stimulate interest in biological research and treatment methods, provide researchers with up-to-date practical information, and help establish international collaborative activities.

With the increasing shift of mental health care away from custodial institutions and into primary health-care settings, the need for improved diagnostic tools and new classificatory concepts was more acutely felt, especially by mental health workers in developing countries. A conference, cosponsored by the Government of Indonesia, WHO and the governments of other ASEAN countries was held in Jakarta in February 1984. Here, a range of proposals were made to revise and update such tools and concepts, to emphasize their usefulness to planners and providers of mental health care in developing countries, and to take into account recent advances in the understanding and management of mental disorders. The proposals provided the impetus for panels of experts in 35 countries, coordinated by WHO, to design explicit diagnostic criteria for the 40–50 mental and behavioural disorders that together accounted for more than three quarters of the total mental health morbidity of populations. The process of developing and field-testing such criteria and new classificatory concepts for worldwide use at the various levels of the health care system was timed to coincide with the Tenth Revision of the International Classification of diseases (see Chapter 5).

Closely linked with the development of mental care in primary health settings was the development of new diagnostic technology to provide mental health workers with standardized interview designs and decision trees to identify specific mental disorders and psychosocial problems, a prerequisite for the rational choice of intervention. Two such instruments, the Composite International Diagnostic Instrument (CIDI) and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN), passed in 1985 from the drawing board to the field, where they underwent validity and reliability testing before being released for use. As noted above, CIDI was designed for field use by lay workers conducting community surveys of mental health problems; SCAN was primarily for use in research or clinical settings.

Other materials produced for training general and primary health-care workers included, in 1986, flow charts to identify and manage mental health problems, such as depression, in Colombia, Lesotho, Switzerland, and the United Kingdom, and in 1987, audiovisual training aids for general practitioners.

In view of the public health importance of senile dementias in both developed and developing countries, WHO convened a meeting of experts in Geneva in March 1987 to review the state of knowledge of Alzheimer disease, other forms of dementia, and the normal ageing of the brain. The potential of modern technology in diagnosis and research was considered. WHO also supported work on the epidemiology of senile dementia and other mental health problems of the elderly in Argentina, Chile, China and Cuba.

In the field of biological psychiatry and psychopharmacology, efforts to improve techniques for treating mental disorders continued. The results of multicentre psychopharmacological studies, carried out at 13 research centres in 10 Member States, became available during the 1986–1987 biennium. Findings of the WHO multicentre biological studies on mental disorders were reviewed at a symposium in San Juan, Puerto Rico, in December 1986, and a series of articles were published (26).

A protocol for a proposed research study on the utilization of health and social services by the mentally ill was finalized at a meeting of the participating investigators in Geneva in September 1987. The aim of the research was to develop methods for national health authorities to monitor and evaluate their community mental health programmes.

The report of the study group on the application of advances in neurosciences for the control of neurological disorders (27) was presented to the Executive Board in January 1979. The discussion of the Board prompted the Secretariat to note that a series of consultations with country authorities on neurosciences had indicated a lack of commitment on the part of countries themselves, and that extrabudgetary funds were necessary to “take the programme into orbit”. The best approach would be to tackle one problem at a time, beginning with epilepsy. It was also suggested that pilot studies be launched to determine whether it was practical to establish a community control programme, and whether such a programme would be beneficial, efficient and effective. Field work would concentrate on defining and implementing appropriate intervention measures and rely in large measure on the nine WHO collaborating centres for research and training in neurosciences.

A protocol for international studies on the incidence and prevalence of neurological disorders was prepared in 1980 and a pilot study conducted in China and Nigeria. Field research centres were selected in several African countries, and in China, Italy, Mexico, and Spain. A series of courses on clinical and basic neurology was organized in conjunction with these studies. During this same biennium, a protocol was prepared for an international collaborative study to find safe and efficacious pharmacological means to control epilepsy.

The protocol for an international study on the effect of anticonvulsant drugs in different populations was developed with the epilepsy branch of the WHO collaborating centre for research and training in neurosciences, (the National Institutes of Health, US Department of Health and Human Services, Bethesda, USA), and was tested at the centre in Bethesda and at the WHO collaborating centre in Mexico City. Extensions of the study soon followed in China, Nigeria and Italy (in Sicily). Data from these studies were presented at international meetings and the results published in relevant international journals. This study provided information to health planners on the incidence and distribution of neurological disorders, facilitating the design of appropriate action programmes. Results also contributed to the development of a protocol for a study on the community control of epilepsy; pilot studies were carried out in China, Ecuador, India and Nigeria. A task force for further development in this area was established with the International League Against Epilepsy and the International Bureau for Epilepsy.

Three informal consultations were held in Geneva, in May and September 1984, and in January 1985, to consider the classification of diseases of the nervous system with regard to the Ninth Revision of the International Classification of Diseases and the preparation of the Tenth Revision. In order to maintain worldwide compatibility of morbidity and mortality statistics, an application of the International Classification of Diseases to neurology was prepared. The detailed classification, for use in morbidity statistics, hospital record indexing and research, was published on a trial basis. Cooperation with nongovernmental organizations, including the International Brain Research Organization, the International Federation of Multiple Sclerosis Societies, the International League Against Epilepsy, the World Federation of Neurology, and the World Federation of Neurological Societies, was reviewed during the 1986–1987 biennium to define major areas of work for the future. These included the development of the above-mentioned classification; jointly sponsored or organized meetings on topics of major public health interest; the exchange of information about resources in the field of neurosciences; and training activities.

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Promotion of environmental health

Priority for environmental health was enshrined in the Constitution of the Organization and its programme from the outset, but not until the United Nations Conference on the Human Environment held in Stockholm in June 1972 was the need to safeguard the quality of the environment for the benefit of present and future generations recognized. The conference also called for the careful planning and management of the Earth's environment. The United Nations Environment Programme (UNEP) and the Environment Fund were established as instruments to stimulate action by governments and the international community. A wide spectrum of objectives was put forth for action, including the promotion and the protection of human health in relation to the environment. WHO was asked to strengthen its traditional programmes on environmental health, and address the newly emerging health problem of environmental pollution; the spectre of toxic chemicals reaching man through air, water and food; and environmental health in human settlements and at the workplace.

The Stockholm Conference was instrumental in raising the level of understanding and response to a growing number of global environmental threats. It did not, however, propose that new programmes be initiated, or new organizational structures be developed; rather, it sought new arrangements for coordinated action, and cooperation and collaboration among an array of national and international actors. For WHO, the challenge was to reassess priorities in environmental health across sectoral lines at local, national, regional and global levels.

The World Health Assembly had already reviewed the Organization's programme with a view to laying the ground for the post-Stockholm period (resolutions WHA24.47 and WHA25.58). Following the Stockholm Conference, resolutions WHA27.49 and 50 called for further action by Member States and the Director-General. Amid concern that the lack of coordination at the national level often prevented environmental health activities from becoming part of balanced public health programmes, Member States were called upon to make health-oriented environmental action an essential part of all relevant major national programmes for social and economic development, and that health agencies fully participate in planning and implementing such programmes. The Director-General was asked to emphasize a comprehensive approach to environmental problems by integrating programme activities to improve basic sanitation, the quality of air, water and food, conditions of work, housing and urbanization, giving priority to those conditions that were known to have an adverse effect on community health and the health of groups at special risk.

In 1976, the Twenty-ninth World Health Assembly (resolution WHA29.45) considered that progress in environmental health had been "too slow". It requested the Director-General continue collaboration and coordination within the United Nations system, especially with UNEP, with a view to maintaining WHO's leading role in promoting human health; increasing the availability of resources in addition to the regular budget of the Organization; and making the Organization's contribution to environmental programmes as effective as possible. Member

States were urged to make environmental health programmes an integral part of their national health and development efforts and to allocate adequate resources to environmental health.

The establishment of environmental protection agencies in many countries created a need for technical cooperation in formulating policies to meet new types of environmental objectives. A study, involving 21 countries at various stages of development in all six WHO regions, found that while government leaders recognized the need for intersectoral coordination, various obstacles made such coordination problematic. For example, in all but two of the countries, the problem framework was perceived as that of the 'environment', subsuming environmental health within that subject. As environmental concerns touched on many other sectoral concerns (e.g. agriculture, housing, economic policy and commerce), achieving effective intersectoral coordination required more than just establishing structures and processes; it necessitated "the definition of environmental values and their integration into all parts of the public administration and the social system it serves. Promulgating laws and designating responsible officials would not suffice; sectoral bureaucracies had to be brought under a considerable degree of control and given clear, consistent, and persistent policy direction if coordination schemes were not to flounder", an observation which put considerable responsibility on the national public health agencies during the years following the Stockholm Conference (1).

One advance in bringing environmental health into the mainstream of health systems development was the inclusion of water supply and sanitation as an essential element of primary health care. Thus, the call for community participation in all stages of projects, intersectoral action and the application of affordable and appropriate technology – themes basic to the primary health care approach – applied also to water supply and sanitation, a traditional priority in environmental health. The UNICEF/WHO Joint Committee on Health Policy had decided in 1977 to conduct a study on community water supply and sanitation, the results of which were presented to its 1979 session (2). One major conclusion of the study was that the "overwhelming problems involved in supplying water and sanitation for rural areas could only be solved by using the primary health care approach" (3). WHO and the United Nations Children's Fund (UNICEF) were seen as having a "catalysing role" to ensure the rational use of water for the improvement of health. In this regard, it was important to increase financial contributions to strengthen the capabilities of international and bilateral agencies cooperating with governments to extend community water supply and sanitation.

The Joint Committee's review of progress in early 1981 added to the challenges facing WHO and its partners. The review found that the health impact of many of the water supply programmes in which WHO and UNICEF had long cooperated had been "doubtful although [the] social benefit in terms of creating more convenient water sources" was significant. One of the reasons for the diminished impact on health was that the complementary development of environmental sanitation had been "largely neglected" (4). The United Nations International Drinking Water Supply and Sanitation Decade, 1981–1990, was seen as an opportunity to improve health-related actions.

The international programme on chemical safety, initiated in 1979, provided WHO with another broad platform to develop technical cooperation with Member States in order to promote national environmental health policies, engage ministries of health in environmental affairs, and strengthen their capacity to do so.

The Bhopal disaster in December 1984 and the Chernobyl accident in 1986 illustrated how profoundly the environment affected the health of people. While these preventable incidents and

others were dramatic manifestations of environmental health hazards, the real problem remained the chronic effects on health of exposure to pollutants at low levels over a long period of time.

New sources of contamination were also found to be affecting food; the use of veterinary drugs, for instance. Accordingly, the *Codex Alimentarius* Commission, which implements the Food Standards Programme (a joint initiative of WHO and the Food and Agriculture Organization of the United Nations), decided to establish a new mechanism to protect human health against the residues of such drugs in food, with WHO called upon to strengthen its scientific evaluation capacity in this field.

These trends in environmental health were paralleled by trends affecting the human environment more generally, leading the United Nations to establish an independent World Commission on Environment and Development to appraise the situation and contribute to the study of the environmental perspective to the year 2000 and beyond, a study in which WHO cooperated. The major chemical and nuclear accidents during the 1986–1987 biennium led the World Commission to make an urgent appeal to the international community to promote sustainable development by integrating environmental concerns into development activities.

Compared with the resources spent on the basic problems of food, water supply and sanitation, considerably less was being invested in measures to meet the rapidly increasing threat to health and the environment from an array of hazards that might have acute or chronic effects on human health. Recognizing the need to strengthen Member States' ability to determine environmental hazards and take precautionary or abatement measures, WHO developed a comprehensive strategy in 1987 to establish regular technical cooperation with Member States to that end.

Community water supply and sanitation

The United Nations Water Conference held at Mar del Plata in Argentina in March 1977 adopted an action plan that recommended 1981–1990 be designated the International Drinking Water Supply and Sanitation Decade (IDWSS). The United Nations General Assembly (resolution 32/158) approved this recommendation, as did the Economic and Social Council of the United Nations, the United Nations Development Programme (UNDP), and WHO (resolution WHA32.11). Furthermore, the United Nations General Assembly (resolution 34/191) decided to hold a special one-day meeting during its 35th session formally to launch the Decade. The Director-General of WHO, the Executive Director of UNICEF and the Administrator of UNDP addressed the session and stressed the opportunity offered to make major strides in ameliorating the deplorable conditions of community water supplies facing more than a billion people around the globe.

Preparations had led the Organization to realign its activities in basic sanitation: providing basic sanitary measures was now viewed in the light of the Decade, as designated by the Mar del Plata Conference. The task of assessing Member States' water supplies and sanitation sectors was carried out with the cooperation of WHO and the World Bank. It entailed a country-by-country review to evaluate information that was readily available: the preparedness of countries to accelerate the development of basic sanitation; the action required to formulate national plans during the preparatory phase (1978–1980); and the need for international cooperation in preparing development plans for the Decade.

Governments responded positively and in 1978 rapid assessments were carried out in 104 countries. Different methods were adopted in the WHO regions. The African Region used a

training approach, with national representatives attending workshops in Ouagadougou and Nairobi. In the Region of the Americas, national activities were supported in individual countries. For assessments in other regions, national experts, consultants and staff from field offices, regional offices and headquarters (including staff of the World Bank/WHO cooperative programme) were relied on.

Consultations took place between the organizations most directly concerned within the United Nations system: the United Nations itself, UNDP, UNICEF, the International Labour Organization, the Food and Agriculture Organization of the United Nations (FAO), WHO and the World Bank, with the aim of improving coordination within countries and establishing regular consultations among the governments, intergovernmental organizations and nongovernmental organizations involved. The UNDP resident representatives assumed a key role in coordinating contributions by the agencies in the United Nations system.

A steering committee, comprising agencies of the United Nations system, was formed to review and develop policy, create a coordinated approach to managing individual programmes, and prepare for consultative meetings with representatives of governments able to offer technical and financial cooperation. WHO provided the secretariat for the steering committee.

The launch of the Decade stimulated wide interest in national planning to extend and improve water supply and sanitation services. Some 60 countries formed national action committees, and national plans were prepared in many countries. Increasing attention was given to projects to benefit underserved rural and urban fringe populations. WHO helped countries in their planning for the Decade, using its own resources as well as those from UNDP, GTZ (German technical cooperation), and the Swedish International Development Authority (now known as the Swedish International Development Cooperation Agency). The World Bank/WHO cooperative programme played an important part in this work. WHO organized national planning workshops, during which national officials clarified issues, agreed on urgent measures and formulated a policy for Decade planning. WHO also published guidelines on how to apply the principles of the Decade when preparing national plans (5).

In May 1981, the Thirty-fourth World Health Assembly (resolution WHA34.25) emphasized safe drinking-water and adequate sanitation as basic elements of primary health care and listed the principles by which the Decade would contribute to the improvement of health as part of the Global Strategy for Health For All by the Year 2000. The wide acceptance by Member States of the International Drinking Water Supply and Sanitation Decade offered “a new incentive to provide people with these essential services; and that maximum use should be made of all opportunities afforded by the Decade to promote the attainment of health for all”. The Organization was called upon to further develop and implement its strategy of support for the Decade.

WHO paid greater attention to developing infrastructures and strengthening manpower at the community level. It supported national sector agencies, national action committees and UNDP to identify and formulate projects, solve institutional problems and design equipment. It devoted increasing resources to developing, in cooperation with other organizations in the United Nations system and nongovernmental organizations, methods and models to strengthen national, institutional, financial and human resources; creating systems for the exchange of information on Decade technology, financial and technical resources, and projects in need of external support; and devising global and national evaluation mechanisms for assessing the impact of Decade efforts, especially on human health.

The Steering Committee for Cooperative Action for the Decade grouped 11 members (the United Nations, the United Nations Centre for Human Settlements, the United Nations

International Research and Training Institution for the Advancement of Women, UNDP, UNEP, UNICEF, ILO, FAO, UNESCO, the World Bank, and WHO), under the chairmanship of UNDP. It established several interagency task forces, including one on women and the Decade. During the 1982–1983 biennium, a strategy was developed to increase women's contribution to community and socioeconomic development, not only in sanitation and water supply, and maintenance activities as such, but also in other development activities, depending on the availability of these facilities, throughout the Decade and beyond.

A high-level consultation held in Geneva in June–July 1984 noted the constraints placed on Decade development by the lack of adequate or appropriate institutional arrangements. In order to enhance the performance of institutions, WHO developed a methodology for maximizing benefits to health that was intended to enable sector management to ensure, through appropriate project selection, optimum utilization of the scarce and limited resources available for health improvement. Closely related to this development was a methodology for quantifying the health impact of improved services, which was prepared with the WHO collaborating centres for environmental and epidemiological aspects of diarrhoeal diseases at the London School of Hygiene and Tropical Medicine in the United Kingdom, and for community water supply and wastes disposal at the University of North Carolina in the USA. These were field-tested during the 1984–1985 biennium in Malawi, the Philippines and Rwanda.

A European consultation of bilateral funding (donor) agencies was convened with WHO's cooperation in Königswinter in the Federal Republic of Germany in October 1984. Attended by participants from 11 European countries, as well as from UNDP, UNICEF and the World Bank, and by observers from the Canadian International Development Agency and the United States Agency for International Development, the consultation reached general agreement on how external support to countries' Decade programmes could be made more effective. As a direct follow-up, WHO participated with UNDP, the World Bank and the International Reference Centre for Community Water Supply and Sanitation, in a meeting of the Development Assistance Committee (DAC) at the Organisation for Economic Co-operation and Development (OECD) in Paris in May 1985. The meeting was the first time this committee had addressed water supply and sanitation as key elements of development. It concluded that donor agencies should improve their coordination and recipients should develop and adhere to effective national strategies. Major sectoral issues, including institutional development, education in hygiene, human resources development, community participation and full cost recovery in the long term, and the complementary development of water supply and sanitation, should be emphasized.

A lack of adequately trained personnel remained in most regions a major constraint on Decade progress. As a result, WHO gave high priority to this problem. Activities, including national workshops, case studies on institutions involved in the programme, seminars and country visits, were implemented, where possible, within the context of technical cooperation among developing countries. At the global level a handbook on human resources development was issued in 1984 (6), and a series of short briefing seminars on the subject were then conducted for participants from bilateral support agencies.

In October 1984, the Programme Committee of the Executive Board reviewed the Organization's programme and evaluated progress towards adequate water supply and sanitation in relation to the goal of health for all through primary health care. Three key questions were posed in the background paper prepared by the Secretariat (7) for this review: were the strategy and policy for WHO's community water supplies programme compatible with primary health care, and relevant and adequate to the goal of health for all by the year 2000; what

progress had been made in implementing international coordination at national and international levels; and were WHO's resources being used efficiently and effectively? In general, a positive picture was painted, but certain weaknesses were noted: monitoring the capabilities of national agencies responsible for water supply and sanitation required strengthening; national health administrators and WHO programme coordinators needed to increase their efforts to bring the Organization's policy and strategy to the attention of national decision-makers and all agencies concerned with water supply and sanitation; the participation of national health authorities in intersectoral coordination at the country level was lagging; and WHO should strengthen its relationships with governments and continue to provide suitable management information with a view to helping national health authorities use WHO resources at the country level for community water supplies activities in pursuit of primary health care.

The Programme Committee concluded that the Organization should continue the Decade promotion within the mainstream of action for health for all, stressing universal accessibility, community involvement, appropriate technology and intersectoral cooperation, and take new initiatives to promote more integrated approaches to health development, practical health systems research, mobilization and rational use of resources, and information transfer. Intensified action was needed for using community water supplies as an entry point for primary health care. WHO, together with national authorities, should seek to identify opportunities to implement practical linkages between programmes.

Recognizing that community participation had an important role to play in institutional development, guidelines for planning community participation in water supply and sanitation projects were produced and widely disseminated (8). They were also extensively used as background notes for an interregional meeting on community involvement in health development that was held in Brioni, Yugoslavia, in June 1985 (see Chapter 6).

A WHO study group on technology for water supply and sanitation in developing countries met in Geneva in April 1986 and reviewed significant advances in the light of these countries' specific needs (9). The group concluded that while appropriate water supply and sanitation technology was available to satisfy community needs, in some places sociocultural factors were restricting programmes from being implemented. It was believed some of these obstacles could be overcome through carefully planned educational, informational and motivational interventions, particularly if these led to increased community involvement.

The group noted that the provision of sanitation was not receiving a reasonable level of investment, in spite of the availability of low-cost systems. The slow progress in programme implementation was mainly the result of a lack of public awareness and the absence of health education. Available technology needed to be adapted to suit local conditions and requirements, to reduce costs, and to take advantage of local resources. In an effort to make better use of available low-cost technologies, governments should be encouraged to review their existing systems and investments in information transfer. They should also be invited to take advantage of the facilities available through the WHO reference centres and national collaborating centres, as well as the facilities of the WHO regional environmental health centres: the Pan American Center for Sanitary Engineering and Environmental Sciences, and the Pan American Center for Human Ecology and Health in the Region of the Americas; the Centre for the Promotion of Environmental Planning and Applied Studies in the Western Pacific Region; and the Centre for Environmental Health Activities in the Eastern Mediterranean Region.

A document was prepared in 1987 on the community partnership in the Decade to promote the concept of self-reliance (10). In WHO's continuing efforts with external support agencies to

evaluate projects and programmes, it emphasized cooperation to ensure sustainability rather than supplying materials. WHO cooperated with such agencies to develop methodology or make evaluations in Ethiopia, Indonesia, Nepal, Nigeria, Sri Lanka, Thailand, and the United Republic of Tanzania. This work was supported by UNICEF, UNDP, the Danish International Development Agency and the Swedish International Development Authority with the aim of providing guidance on how to further the involvement of women in water supply and sanitation and related health education.

With the support of UNEP and the collaboration of the World Bank, FAO and WHO collaborating centres, the health aspects of the reuse of wastewater for irrigation and water resources development were reviewed. UNDP/WHO-supported field experiments on the safe use of human wastes in agriculture and aquaculture were undertaken in Tunisia, and experience from many countries in the Americas, South-East Asia, European and the Eastern Mediterranean regions was used in the field stages of preparing guidelines on measures for public health protection. As a follow-up, the WHO Scientific Group on the Health Aspects of Use of Treated Wastewater for Agriculture and Aquaculture, which met in Geneva in November 1987, reviewed and updated the WHO guidelines issued in 1973 (11).

The yearly support to the sector from external sources amounted to US\$ 2400 million. Of this amount, bilateral support, mostly in the form of grants, accounted for more than US\$ 800 million, the United Nations system contributed US\$ 150 million and nongovernmental organizations US\$ 150 million; US\$ 1300 million came from development banks and funds in the form of loans, about US\$ 700 million of this from the World Bank. From the start of the Decade, the lack of resources, or their ineffective utilization, was a major constraint to progress. WHO, as part of its Country External Support Information System, known as CESI, continued to promote funding of the sector and the better use of the funds provided by participating in meetings of external support agencies, through contact with individual agencies, and disseminating information. In consequence, bilateral development agencies formulated strategies, policies and guidelines for their cooperation programmes. Information collected from individual donors and funding agencies on their policies and Decade activities was incorporated in a catalogue of external support (12), the first issue of which helped to increase the flow of external funds to the sector and reorient resources towards health.

Data on the number of people with access to water supply and sanitation services at the end of 1985, the mid-point of the Decade, were collected and analysed during 1986; 114 of WHO's Member States, representing 90% of the population of the world's developing countries, excluding China, provided information, the results of which were presented to the Thirty-ninth World Health Assembly in 1986 (13). Water supply service coverage was established at 75% and 42% in urban and rural areas respectively, while corresponding sanitation coverage was 59% and 16%. In spite of these increases, population coverage had not significantly improved by mid-Decade (more than 1100 million and 1700 million without water supply and sanitation respectively) as the expansion of water supply and sanitation services had hardly kept up with world population growth.

Environmental health in rural and urban development and housing

WHO intensified its efforts to promote environmental health under the Seventh General Programme of Work, recognizing the potential to minimize the hazards of development in rural and urban communities. A working party of experts in rural and urban development met in Geneva in November 1983 to assist the Organization increase its contribution towards enhancing the environmental health element in economic planning and development programmes. WHO established a new programme, rural and urban development, which aimed to ensure that environmental health was adequately considered in planning and implementing development projects, and to promote improved living conditions (habitat) for the mutual benefit of improved health, increased productivity and viable socioeconomic development. Certain elements of urban health, such as solid waste disposal and clean air, continued to be given priority.

With the cooperation of UNEP, a technical panel on the environmental health aspects of housing and urban planning was established in 1984. The panel identified four priority areas: community-based actions to assess and meet the environmental health needs of children; upgrading community environment for health – guidelines for a survey methodology for slum and squatter settlements; community intervention to control insects and rodents; and health criteria for urban and indoor environmental quality.

The initial strategy of the new programme was to assemble relevant information in a form readily useable by architects, urban planners and others engaged in the development process, and to help Member States build their organizational and technical capacity to emphasize environmental health measures through the development process. Activities included arranging country and intercountry meetings to exchange information between health authorities and other sectors and disciplines concerned with socioeconomic development and housing; conducting comprehensive community assessments; developing legislation and standards; upgrading the community environment for health in slum and squatter settlements; managing urban solid waste; and developing appropriate technology for basic sanitation in urban fringe areas. One outcome of the joint UNEP/WHO initiative was developing a community-based approach to identifying needs and priorities to improve environmental health conditions in low-income settlements (14).

Technical cooperation for solid-waste management was provided in several countries and cities in the Region of the Americas. This took the form of helping to identify priority projects; organizing a meeting on hazardous wastes; establishing a technical cooperation among developing countries network on public cleansing; training; and publishing a computerized index. National personnel received current technical information and reviewed approaches for improved environmental health programmes during workshops, including a European Region workshop, held in Ankara in May 1985, on housing hygiene and environmental health problems in urban fringes; in the South-East Asia Region, a national workshop was held in Rangoon in September 1985 following an assessment of disease patterns related to poor environmental sanitation.

Activities concerned with environmental health in development projects were undertaken in the African Region, where a study was set up on human ecology and health in Senegal; in the South-East Asia Region, where environmental health planning was incorporated into the Lumbini development project in Nepal; and in the Eastern Mediterranean Region, where a regional course to assess the environmental health impact of development projects was convened in Sudan, using the Blue Nile project as a case-study.

Seven case studies of health in housing (in Rio de Janeiro, Addis Ababa, Manila, Lima, Madras, Kwaso, in Ghana, and Colombo) were carried out in preparation for the WHO Interregional Consultation on 'Housing – the implications for health' that was held in Geneva in June 1987. These case-studies ranged from broad programmes to highly specific interventions. The case-studies in Addis Ababa and Madras were community development programmes in which improved housing was just one of a range of activities; in Lima, the focus was on chlorinating the water supply, and, in Rio de Janeiro, on preventing hillside collapses. Based on a review of the global situation, including the seven case-studies, the Interregional Consultation highlighted widespread and serious health risks arising from inadequate and inappropriate housing, and noted that the plight of the poor was grave and worsening.

The International Year of Shelter and the Homeless in 1987 had brought progress towards more enlightened policies in some countries. From these experiences, 11 'health principles of housing' were framed, covering ways in which adequate housing could protect health and promote people's social and psychological development. They included measures by which all those involved in planning, designing, building and managing housing and community services could maximize the health benefits of their activities. Six specific 'action lines' were identified for immediate action by Member States, including: supporting community organizations that promoted health and the housing sector; rethinking and reorganizing the training of professional, para-professionals and practitioners with responsibility for housing and/or health; and action-oriented research.

A brochure, *Housing and health: an agenda for action*, was disseminated to promote timely follow-up of the consultation and the principles and lines of action. WHO's other contributions to the International Year of Shelter and the Homeless, many of which were carried out in collaboration with the United Nations Centre for Human Settlements (Habitat) and UNEP, included a regional meeting on health in housing in Madras, India, in September 1986, a sub-regional seminar on health and habitat in Salta, Argentina, in November 1986, and a special issue of *World Health* on shelter for the homeless in July 1987.

A survey of 70 Member States examined conditions related to the health aspects of housing and socioeconomic development (15). Instructions for data collection were prepared in 1986 for use mainly by WHO field staff. The survey looked at health-related needs in housing and development; the state and preparedness of government and community infrastructure to respond to needs; and the role and capabilities of national health authorities for such responses.

Few countries were found to be responding strongly to the many inadequacies identified. Less was done by governments to improve housing than to meet other social needs, and social improvement was found to lag behind economic development activity. Little action by nongovernmental entities was reported. Community organization was weak or absent in two thirds of the countries. More community activity was reported in rural areas than in urban areas, but it was weakest among disadvantaged housing populations.

A series of suggestions on how WHO might respond to national needs was outlined. This included the further development of international networks for information exchange, policy promotion, and technical support by international, multilateral and bilateral organizations; providing practical guidance for national activities, such as using health systems research methods to organize information from 'natural' and sponsored experiments; and supporting the preparation of human resources in countries, including the collation, synthesis and development of materials useful in technical training, such as planning methods, curricula, texts and handbooks, and instruments useful in field operations.

Control of environmental health hazards

The WHO programme on the recognition and control of environmental hazards developed along two main lines: the evaluation and assessment of the health risks of exposure to chemicals and other agents in the environment; and the development of national programmes of people's health against environmental pollution.

The United Nations Conference on the Human Environment in Stockholm in 1972 and the Thirtieth World Health Assembly in May 1977 (resolution WHA30.47) recognized the need for an international response to the challenges posed to health and the environment by the global use of chemicals. In order to complement and strengthen existing WHO activities and to provide this response, the Thirty-first World Health Assembly in May 1978 (resolution WHA31.28) endorsed a proposal to implement an international programme. The Executive Board, in January 1980, endorsed the plan of action for implementing the International Programme on Chemical Safety (IPCS). In 1980, the executive heads of UNEP, the International Labour Organization and WHO decided to make the Programme a cooperative one.

The IPCS had as its objectives: (i) to evaluate and disseminate the effects of chemicals on human health and the environment; (ii) to develop guidelines on exposure limits; (iii) to develop appropriate methods for toxicity testing, epidemiological and clinical studies, and risk and hazard evaluations; (iv) to coordinate laboratory testing and epidemiological studies where an international approach was appropriate, and to promote research; (v) to provide information on coping with chemical accidents and promote effective international cooperation to control toxic substances in Member States; and (vi) to promote the training and development of manpower.

In 1979, details were negotiated with 10 Member States to designate national institutions and on financial contributions to the programme. A WHO central unit was established and a programme advisory committee formed. The International Agency for Research on Cancer agreed to assume the role of leading institution for chemical carcinogenesis. UNEP established an international register to collect, retrieve and disseminate information on potentially toxic chemicals. An interregional research unit was established at the National Institute of Environmental Health Sciences in North Carolina, USA, one of the 27 research institutes and centres that comprise the National Institutes of Health and the Department of Health and Human Services. Another research unit was subsequently established at the United States Environmental Protection Agency in Washington, DC.

The programme advisory committee established four priorities: evaluating the effects of pesticides, food additives, household chemicals, and selected industrial chemicals; disseminating information; training toxicologists; and developing methodologies, especially for monitoring exposure from various sources and for validating tests for the detection of mutagenicity, carcinogenicity and teratogenicity. The committee developed guidelines for designating lead institutions and ensuring that the work they performed corresponded to the international character of the programme. It also dealt with the question of unpublished proprietary data and the participation of nongovernmental organizations in the programme.

Preparing environmental health criteria documents on chemicals was an important part of the programme. Each document addressed a different pollutant, or group of pollutants, and each contained an assessment by an international task group of toxicological and epidemiological research findings and its evaluation of the health risks of exposure to the particular pollutant. Under the programme's new arrangements, the lead institutions took responsibility for preparing the criteria documents under the guidance of the central unit. The drafts were sent

to countries for review and comments, and the revised draft was finally reviewed by a group of international experts. Guidelines on preparing the criteria documents were written. Work on methodology focused on: principles and methods for evaluating the toxicity of chemicals; general principles in epidemiological methods for environmental health studies; assessing the effects of chemicals on reproductive function; short-term tests to predict the mutagenic and carcinogenic potential of chemicals; the integrated evaluation of acute and chronic prenatal toxicity of chemicals; and evaluating of neurobehavioral toxicity.

Particular needs in developing countries were reviewed by the chemical safety programme advisory committee in June 1982; the committee concluded that there was a close link with primary health care because providing sanitation, pure food, clean air, and pure water implied that these should all be free of harmful chemical contamination.

About 100 institutions in 19 Member States took part in the first phase of an international collaborative study on short-term tests for genotoxicity and carcinogenicity. The study, which dealt with in vitro tests, was completed in 1983. The Scientific Group on Methodologies for the Safety Evaluation of Chemicals, established by WHO jointly with the Scientific Committee on Problems of the Environment of the International Council of Scientific Unions, published methods in reproductive toxicology, and a methodology for the quantitative estimation of risk to human health from chemicals, including methods for estimating, predicting and interpreting the health effects of simultaneous or sequential exposure to several chemicals. In collaboration with other organizations and agencies, the International Programme on Chemical Safety (IPCS) sponsored scientific meetings that dealt with specific chemical compounds, including the monitoring of human exposure to carcinogenic and mutagenic agents.

WHO's Executive Board examined progress in implementing the IPCS at its seventy-third session in January 1984 and decided to modify its structure and operation. Collaboration with the ILO and UNEP was renewed for a further three years, and Australia, India, Norway, the Philippines and Thailand became active members, bringing to 20 the number of countries that had signed memoranda of understanding to collaborate in the programme. The OECD also signed an agreement that covered its collaboration. In addition, national IPCS focal points were set up in 21 countries.

The IPCS programme advisory committee met at the United Nations Development Programme (UNDP) headquarters in Nairobi in October 1984, and provided guidance on priority chemicals for evaluation, new work on methodologies, activities relating to emergency responses to chemical releases, and manpower development. It was agreed that the environmental aspects of chemical safety in IPCS activities would be emphasized further. This led to a more concise format for the published evaluations in the *Environmental Health Criteria* that allowed for fuller treatment of the environmental effects of chemicals. Supplements, providing practical advice for decision-makers, were also issued. A survey among environmental, health and labour authorities, as well as scientific research institutions, showed that the quality, usefulness and impact of the *Environmental Health Criteria* were highly appreciated. Work also began, in collaboration with the UNEP International Register of Potentially Toxic Chemicals, on the computerized listing of chemicals being tested for toxicological effects.

Guidelines were developed for the study of genetic effects in human populations. These covered approaches and methodologies for data collection, and epidemiological and cell mutation studies in detecting and quantifying these effects (16).

The programme advisory committee also called for an increased use of the regional structures of cooperating organizations. Two regions, Europe and the Americas, already had

well-established chemical safety activities. The other regions were in different stages of developing such activities. The African Region anticipated introducing a chemical safety component into its programme budget proposals for 1988–1989. In the Eastern Mediterranean Region, the Council of Ministers of Health of the Arab Gulf States decided to perform integrated studies of national programmes and needs on chemical safety, with a view to more active participation by the ICPS. The Regional Committee for South-East Asia recommended that Member States establish national focal points for IPCS and identify appropriate national institutions to cooperate; UNDP agreed to finance a regional project on chemical safety. The Western Pacific Region developed activities on chemical safety through the Western Pacific Centre for the Promotion of Environmental Planning and Applied Studies.

In cooperation with the World Federation of Associations of Clinical Toxicology Centers and Poison Control Centers, WHO assisted developing countries not only to establish facilities for managing medical emergencies arising from acute intoxication by chemicals, but also to respond to chemical hazards, for which purpose, chemical safety data sheets were prepared for a broad range of chemical substances used in these countries. These data sheets summarized information on the composition of these substances and their physical, chemical and toxicological properties; first aid, measures to protect the environment, and explosion and fire hazards; and safety, storage and transport precautions, plus spillage and disposal procedures. Supplementary sheets on clinical toxicology and how to treat poisonings were prepared for certain substances.

Two important conferences on chemical accidents were held in 1987, in New Delhi in January and in Rome in July, driven by the worst-ever chemical accident in Bhopal, India, in December 1984. A survey of poison control programmes and related toxicological services in Member States was undertaken in cooperation with the World Federation of Associations of Clinical Toxicology Centers and Poison Control Centers. This was followed by the preparation of guiding principles for poison control programmes, a poison information package, monographs on antidotes, and a handbook for paramedical and non-clinical toxicologists on how to treat poisonings.

To help decision-makers and administrators use the risk evaluations contained in the *Environmental Health Criteria* series, the Organization began publishing *Health and Safety Guides* as companion volumes during the 1986–1987 biennium. These guides contained a summary in simple, non-technical language of the evaluations and conclusions published in the series and provided practical advice on matters related to chemical safety.

In parallel with the IPCS programme, WHO monitored air and water quality, and developed safety standards for radiation protection. Water and air monitoring was undertaken within the context of UNEP's Global Environmental Monitoring System (GEMS), which also involved UNESCO and the World Meteorological Organization. The latter had established a global background air pollution monitoring network in the early 1970s, while WHO had begun to monitor air quality in selected urban and industrial areas in 1972. A group of experts was convened in Geneva in June 1976 to consider the principles for designing urban air monitoring networks, including meteorological aspects. The resulting publication (17) provided guidance on how to design air quality monitoring programmes for urban and industrial areas. This covered the initial assessment of conditions, enforcing control regulations, evaluating the effectiveness of abatement programmes, and developing new control measures. By the end of 1978, there were 170 monitoring stations in 46 countries, including stations established during the 1978–1979 biennium in 15 major cities with no previous monitoring capability. Data collected during the period 1973–1980 was analysed in depth with the assistance of the WHO-supported Monitoring and Assessment Research Centre in London (18).

New approaches were developed and tested to improve the information base for assessing the impact of air pollution on human health. Pilot projects were initiated for this purpose. These were used to study human exposure to selected air pollutants; sulfur dioxide and nitrogen dioxide in Toronto, for example, carbon monoxide in Zagreb, and suspended particulate matter in both of these cities.

Water quality was monitored with the support of UNEP and within the context of GEMS. A network of about 330 stations in nearly 70 Member States was established at the start of the decade when data began to be collected and analysed. Standard samples of water were distributed to more than 220 laboratories for calibration, and water quality data from rivers, lakes and groundwater supplies were collected and included in a publication (19). New methods for sampling were introduced (20) and additional countries in Africa, Latin America and the Eastern Mediterranean joined the global network.

After almost 10 years of GEMS-related monitoring of environmental quality, an assessment of global pollution was compiled (21). While in a good number of cities in industrialized countries there was a trend towards improved air quality, water quality was found to not be improving, especially in developing countries, because of the continuous increase in municipal and industrial discharges that were inadequately pre-treated or not treated at all.

A relatively simple and rapid method (22) was developed and tested over several years to identify and assess air, water and land pollution sources in a given city, region, or even country. Its use was promoted through national workshops and regional courses, and cooperative activities for intercountry training, such as at the Pan American Center for Human Ecology and Health in Mexico. In preparation for and as a result of these workshops, national experts drew up pollution source inventories in several countries. In the European Region, courses on environmental health impact assessment were held in Aberdeen, United Kingdom, in July each year, with participants coming from several regions. Environmental health impact assessment, a basic tool in pollution prevention, was increasingly promoted by WHO in regional and national programmes. The rapid assessment guidelines were being updated at the end of the decade, with the revised version published in 1989.

Environmental pollution control in relation to development was considered by a WHO expert committee that met in Geneva in November 1983. It reviewed the environmental pollution problems associated with various agrochemicals, urbanization and industrial operations, such as the adverse effects of pesticides, automobile traffic in urban areas, mining and smelting, and chemical manufacturing, and made recommendations on prevention and control measures. The committee noted that many international programmes provided information on pollutants, but were not well known to general administrators in the development community; INFOTERRA, the global environmental information exchange network of UNEP, and the International Register of Potentially Toxic Chemicals were two such examples. A comprehensive list of publications and sources of information should be made more widely available, and WHO, UNDP and UNEP were invited to jointly prepare one. It was also recommended that WHO advocate more forcefully the need to consider environmental health when planning development projects in which international organizations such as UNDP and the United Nations Industrial Development Organization were involved, and that WHO support such efforts by providing information and data to those agencies and interested governments.

Epidemiological surveillance of the effects of environmental hazards in developing countries remained a major concern. Following the publication in 1983 of guidelines for studies in

environmental epidemiology, manuals were prepared to guide epidemiological investigations of diseases possibly caused by environmental chemicals and the monitoring of their health effects.

As evidence mounted that traditional environmental monitoring did not yield sufficient data to accurately assess human exposures to pollutants, particularly when they occurred in more than one medium, a new project was developed during the 1984–1985 biennium for in-depth studies of human exposures to priority pollutants in different settings, under the acronym of HEALs (human exposure assessment locations). These studies were initiated in Japan, Sweden, the USA and Yugoslavia, in the first instance, followed by Brazil, China and India. At the end of the decade, work was being carried out on exposure to DDT (dichlorodiphenyltrichloroethane), hexachloro-benzene, lead, cadmium, and nitrogen oxides.

In addition to its work on chemical hazards, WHO was involved in various activities to assess exposure to ionizing radiation. These activities grew in importance following the Chernobyl nuclear accident in April 1986.

Food safety

During the decade, the work of the Organization led to a gradual change in the public health community's position on food safety: slowly but surely it was recognized that contaminated foods were important contributors to high mortality and morbidity. One of the most common clinical symptoms of foodborne illness caused by microbiologically contaminated food is diarrhoea, which can lead to widespread dehydration, malnutrition, many other diseases, and death. But for reasons that were not quite understood, this link had not been made to infant diarrhoea. Strategies to prevent infant diarrhoea still did not include appropriate food safety measures. Consequently, WHO started to promote this concept strongly during the decade.

Food contamination with chemicals constitutes another risk. Some chemicals are deliberately added to food to improve its appearance or shelf life (food additives), while others, such as agricultural chemicals and other contaminants, find their way into the food chain. Exposure to some of these chemicals may be harmful to human health.

Recognizing the serious public health consequences of contaminated food, the World Health Assembly in 1980 adopted resolution WHA31.49, requesting that the Director General establish a Food Safety Programme. Consequently, many of the different food safety activities of WHO that had been implemented in different parts of the Organization were pulled together and implemented in a more coordinated, cohesive fashion. In addition, the terminology was clarified to promote a better understanding of food safety.

The programme aimed to foster national and international action to encourage Member States adopting policies, strategies and technologies to ensure the safety of food to reduce foodborne morbidity and food losses, and to improve nutritional and hygienic quality. Several approaches were adopted, including: technical cooperation with Member States in preparing specific health programmes for strengthening food safety; ensuring norms and standards for food safety, developed under its aegis by experts in the field, were used; and coordinating and collaborating with the Food and Agriculture Organization of the United Nations (FAO) in the Codex Alimentarius Commission, as well as with the International Atomic Energy Agency, FAO and other interested bodies in assessing new technology for food preservation and the value of irradiation of foodstuffs.

To promote the further development of national infrastructures, the Organization cooperated to identify specific needs of individual Member States in the Americas, South-East Asia and the Eastern Mediterranean. In the Western Pacific Region, WHO collaborated with China and the Republic of Korea to organize food safety management. Technical cooperation to strengthen programmes monitoring the chemical contamination of foods was provided to China, Indonesia, Jordan and Thailand. China and Indonesia, in the province of Palau, as well as Papua New Guinea and Sierra Leone, used inspector's manuals developed during workshops on food inspection procedures.

Jointly with FAO, WHO continued to support the sessions of the regional Coordinating Committees of the Codex Alimentarius Commission for Africa, Latin America and the Caribbean, Asia and Europe, which developed into important forums for advocating the need to strengthen national food safety capabilities and, thereby, to reduce mortality and morbidity from foodborne diseases and avoidable food loss.

The third and fourth sessions of the Coordinating Committee for Latin America and the Caribbean, held in Havana in March 1984 and April 1985, were preceded by intercountry workshops on food standards and health, sponsored by the Organization; these workshops examined technical advances relating to chemical and biological food contaminants, administrative aspects of food safety services and food quality assurance. Also in the Americas, the Inter-American Conference on Food Protection was held in Washington, DC, in August 1985, sponsored by the United States Food and Drug Administration and organized and convened by the National Research Council, with the Government of Canada, the FAO, the United States Department of Agriculture, the United States Environmental Protection Agency and the Pan American Health Organization (PAHO) providing additional sponsorship; this conference proposed a five-year action plan to improve food safety in the region.

National and international food safety seminars and training courses in several countries provided an opportunity to bring together, often for the first time, representatives of government departments and agencies, the food industry, nongovernmental organizations and universities. A Western Pacific regional working group that met in Kuala Lumpur in August 1987 recommended national and intercountry food safety activities.

Work on food standards continued through the FAO/WHO Codex Alimentarius Commission, whose membership grew to 130 countries by the end of 1987. Publication of the first edition of the Codex Alimentarius, which consisted of a collection in loose-leaf form of the Codex standards and codes of practice, was a major event. The book included 180 commodity standards, 30 codes of hygienic or technological practice, standards and guidelines for labelling food as well as provision for food additives, and the maximum limits for the residues of 120 pesticides in a wide variety of foods.

A Joint UNEP/FAO/WHO Food Contamination Monitoring Programme was launched in 1976 as an integral part of the GEMS initiative to collect data on the levels of certain chemicals in individual foods and in the diet, and to evaluate this data, review trends and disseminate summaries. Another objective was to obtain estimates of the intake via food of chemical contaminants, with a view to combining this data with that on exposure from other sources. Activities included visits by FAO/WHO staff and consultants to developing countries to explain the goals of the Programme and to enlist their participation. FAO/WHO guidelines and manuals covering different aspects of food control and food safety were disseminated. These covered topics such as developing food control systems, food inspection, export inspection, food control laboratories, food analysis, preventing mycotoxins contamination and surveillance of

mycotoxins; distribution of Environmental Health Criteria documents published by WHO's International Programme on Chemical Safety; and distribution of relevant publications of the International Agency for Research on Cancer.

The cooperation of 37 FAO/WHO collaborating centres, with participating institutions active in 34 countries, was a key feature of the GEMS/Food programme. Beginning in 1980, dietary intake data were collected in a systematic fashion. The data indicated that in some countries, exposure to certain organochlorine pesticides could constitute a significant portion of the average daily intake. As dietary intake data was limited mostly to developed countries, a meeting of the technical advisory committee, composed of officers of present or prospective collaborating centres and participating institutions, met in Geneva in September 1985 and called for a concerted effort to enlist more developing countries to participate in GEMS/Food.

Following the 1980 meeting of the joint FAO/International Atomic Energy Agency/WHO Expert Committee on the Wholesomeness of Irradiated Food, held in 1980, WHO took several steps to advance the acceptance of food irradiation as an appropriate technology to help increase the supply of safe food. These included obtaining confirmation from a meeting with the International Committee on Food Microbiology and Hygiene in Copenhagen in December 1982 that irradiating food up to an overall average dose of 10 kGy did not pose any special microbiological problem, and that food irradiation could be regarded as an important addition to existing methods for controlling foodborne pathogens and preventing food spoilage.

Given irradiation's capacity to increase food safety and reduce food losses, the Directors-General of FAO, the International Atomic Energy Agency and WHO invited their respective Member States to form an international consultative group on food irradiation to evaluate global developments in this field and to be a focal point for advice to Member States and the organizations on the application of radiation in food technology. This group was formed in May 1984 and by the end of decade there were 57 Member States participating in the programme. Under the aegis of the consultative group, a task force was convened in Vienna in July 1986 to assess the possible use of irradiation to improve the hygienic quality of food, and to encourage national authorities to use this technology to decontaminate food. This was followed by meeting of the working group in Munich in November 1986, when methods to irradiate foods were reviewed and proposals made for further research in this field. Because the Organization was concerned that unwarranted criticism of this technology might hamper its application in countries that could benefit most, WHO, jointly with FAO, set up an editorial board to prepare the book *Food irradiation – a technique for preserving and improving the safety of food* that was published in 1988.

The potential health hazards associated with chemicals in food called for sustained effort. Accordingly, the FAO panel of experts on pesticide residues in food and the environment and the WHO expert group on pesticide residues, met jointly annually and provided toxicological evaluations on acceptable daily intakes and maximum residue limits in food of pesticides used extensively in agriculture and public health. Toxicological evaluation of chemicals used as food additives and contaminants was undertaken by the joint FAO/WHO expert committee on food additives, which also met annually. At each meeting, the committee evaluated or re-evaluated food additives and contaminants, establishing acceptable daily intakes for these substances on each occasion. The results of the two FAO/WHO committees were channelled into the two Codex committees that dealt with pesticide residues and food additives.

The growing application of veterinary drugs in raising food animals caused public health concerns about the potential hazards of residues of such drugs in food. Consequently, the Codex

Alimentarius Commission decided at its 16th session in 1985 to form the Codex committee on residues of veterinary drugs in food, which met for the first time in 1986. This committee received its independent scientific advice from the Joint FAO/WHO expert committee on food additives, its terms of reference having been expanded by the Directors-General of FAO and WHO to include veterinary drug residues in edible animal tissues.

To address the role of microbiologically contaminated food in the epidemiology of acute enteric infections and intoxications, in particular infant diarrhoea, the Food Safety Programme, jointly with the Programme on Diarrhoeal Diseases Control, convened a consultation in 1983, for which a background paper on the subject was prepared (23). This consultation noted that in 1980 alone there were more than 1000 million cases of acute diarrhoea in children under the age of five in the developing world, excluding China. Of these, five million died. A substantial number of cases of acute diarrhoea were caused by microbiologically contaminated food, and the resulting malabsorption reduced the nutritional status, an especially serious consequence in the case of already malnourished persons.

A joint FAO/WHO expert committee on food safety met in Geneva in June 1983 to deal with all aspects of food safety; those aspects covered by past and ongoing activities were too specialized, particularly with regard to the vital area of diarrhoeal disease (24). A lack of awareness of the health and economic consequences of contaminated food was believed responsible for the limited resources allocated to food safety in many countries. The committee was asked to review food safety measures and evaluate their impact on health promotion and disease prevention, and to consider ways of transforming food safety standards and know-how into practical measures to provide Member States with valid information on health systems, research findings and technology.

In its discussions, the committee concentrated on a hazard evaluation designed to explain the causes of foodborne disease. It devoted particular attention to the cultural practices and economic pressures that lead to increasing hazards associated with food. To help establish programmes, the committee proposed several strategies based on gathering information (including research and technology) and interventions and evaluations. The committee also recommended that each country try to develop at least one laboratory that could identify most, if not all, the known etiological agents (including chemical agents) of diarrhoea and other foodborne diseases. It recognized that a multiplicity of persons had to be educated about the hazardous situations to which foods were exposed and about food safety measures, and it made specific recommendations on training health workers and public education. In order to assist governments evaluate their food safety systems, WHO prepared guiding principles on evaluating programmes to ensure food safety (25).

The Director-General used the occasion of the Board's review of the expert committee's report in January 1985 to stress the need for Member States to make use of the considerable amount of information generated by WHO. The information needed to be distributed adequately and translated into local languages. National seminars should be organized and health systems research conducted to see how the information could be best applied and how it could influence national policy on, for example, food safety.

The hazard analysis and critical control point (HACCP) approach, a sequential investigative control activity, was seen as a necessary complement to control options already in place, such as routine inspection or microbiological sampling and testing of raw meat. Local, regional and national administrative staff, plus laboratory and field personnel, would need to be trained in this approach. After further experience in applying the HACCP system, FAO and WHO started

the process to revise and internationally harmonize HACCP with a view to proposing it to Codex for adoption. The adoption finally took place in 1993.

When AIDS was recognized as major public health problem, it was asked whether infected food handlers could play a role in transmitting the disease. Consequently, the WHO programmes on Food Safety and AIDS Control organized a consultation on health surveillance and management procedures for food-handling personnel (26). There was no evidence that infected food handlers played any role in transmitting this disease.

In the 1980s, as a consequence of urbanisation, industrialisation and tourism, there was a substantial increase in the number of people eating at least once a day in a mass-catering establishment. Numerous massive outbreaks of foodborne illness were reported from various parts of the world. WHO published appropriate guidance to address this problem (27,28).

As it became apparent that WHO alone could not shoulder the huge task of improving the safety of food supply globally, and to reduce the enormous health and economic burden caused by foodborne diseases, the Organization was forced to look for appropriate partners. Such an endeavour also aimed to improve the chances of developing countries participating in the global food trade. In the consumer sphere, several regional and international nongovernmental organizations offered themselves as partners, but in the industrial sphere, none were forthcoming. WHO's rules and regulations did not allow it, for obvious reasons, to collaborate with individual companies. In light of this situation, several visionary industry leaders decided to join WHO in its efforts to improve food safety by forming the Industry Council of Development (ICD). In this way, a platform for public-private partnership was established that gave all food industries the opportunity to contribute. Early in the 1990s, ICD was accepted by the Executive Board to be in official relations with WHO.

Several WHO programmes, including those covering food safety, health education, nutrition, maternal and child health, community water supply, and diarrhoeal disease control, jointly sponsored a consultation on health education in food safety that was held in Geneva in April 1987 and aimed to identify the elements that should comprise a national health education programme on food safety (29). The consultation drew specialists from a broad spectrum of backgrounds, including food microbiologists, social and behavioural scientists, social marketers, health educators, anthropologists, representative of the food industry, and consumer unions. The two main objectives of the consultation were: to provide a means to focus the attention of policy-makers on the still underemphasized problem of food contamination and foodborne disease, and the role that health education should play in their solution; and to establish a plan of action for health education in food safety at the country level that could be adopted for use in any part of the world. The results of the consultation were issued as a provisional edition to allow further review by selected reviewers and to improve what was believed to be an important public health document.

Following this consultation, WHO, with the support of GTZ (German technical cooperation) and the ICD, initiated pilot projects in the Dominican Republic and Pakistan to implement a programme on health education in food safety, based on identifying factors responsible for the contamination, growth and survival of foodborne pathogens.

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Diagnostic, therapeutic and rehabilitative technology

Clinical technology

Clinical technology became a separate programme element after the programme of essential surgical care was established in early 1981. The programme widened during the 1982–1983 biennium to cover medical and surgical problems encountered at the first level of referral in the areas of clinical medicine, obstetrics and gynaecology, and paediatrics, with the aim of ensuring that by 1989, most countries had standards for clinical, diagnostic and treatment methods to support primary and intermediate levels of the health-care system. In July 1985, a global programme for appropriate health care technology, monitored by a global management committee, was established at the Danish Hospital Institute in Copenhagen, a WHO collaborating centre.

WHO liaised with nongovernmental organizations in the fields of surgery, surgical specialties, anaesthesia, nursing and first-aid care, and also made contact with surgical societies in Member States through the International Federation of Surgical Colleges and the International College of Surgeons. Informal consultations held with the World Federation of Societies of Anaesthetologists led to a joint review of anaesthetic literature, equipment and drugs. Collaboration with these nongovernmental organizations, and the International Federation of Gynecology and Obstetrics and the International Society of Orthopaedic Surgery and Traumatology, led to handbooks being prepared on surgery and anaesthesia at the district hospital. At the end of the decade, two other handbooks, on general surgery and on obstetrics, were being prepared (*1*). These were intended primarily for physicians working in 50–100 bed hospitals, serving populations of 50 000–100 000. A list of the necessary basic surgical instruments, equipment and materials was included, care having been taken to ensure conformity with lists of drugs or recommended radiodiagnostic and laboratory procedures already published by WHO.

In the African Region, a conference was held in Harare in September 1983 on raising living standards in rural Africa through improved technology. It stressed the role of self-reliant clinical technology, including basic radiological systems and laboratory technology.

The European Region set up a health technology assessment network in collaboration with the International Federation for Medical and Biological Engineering, the European Federation of Organizations for Medical Physics, and the Advisory Centre for Medical Technology of the Institute of Medical Physics, Utrecht, Netherlands. The work included collaborative studies on the insulin infusion pump; studies of variations in clinical practice and the use of technologies in some Member States; diffusion of technology; and diagnosis-related group financing, with the assistance of the European Health Policy Forum.

The Regional Office for the Americas instituted a mechanism to analyse the import and export of health technology, the manufacture of medical equipment, and legislation relating to health technology. A health technology information network was established to improve contacts, information exchange, and collaboration between research groups and countries, with priority given to maternal and child health and perinatal care.

Health laboratory technology

WHO collaborated with countries in the different regions to develop their health laboratory infrastructure by strengthening central reference laboratories and expanding the national network to meet the needs of primary health care. The public health aspects of laboratory activities and support for communicable diseases surveillance programmes were emphasized. Particular attention was also paid to increasing the efficiency of the national laboratory system and improving logistic support and supervision.

Cooperation with countries differed, depending on their specific needs. In countries of the South-East Asia Region, for example, priority was given to developing expertise in disease surveillance, and the laboratory diagnosis of dengue, Japanese encephalitis, diarrhoeal diseases, malaria, and filariasis was emphasized. In eight countries, WHO collaborated to seek the best way to organize peripheral laboratories, in order to integrate all laboratory services at the peripheral level to control all major diseases. With the aid of the Danish International Development Agency and the United States Centers for Disease Control, WHO organized a laboratory management course to strengthen the managerial capabilities of central and intermediate-level laboratory directors. The course attached great importance to low-cost supervision and organizing supplies to prevent demoralizing shortages.

Guidelines on how to organize and operate peripheral health laboratory services were published to support more effective rural health care for both the community and the individual. These were field-tested in several countries, beginning with Algeria. Further technical guidelines were developed for collecting specimens and dispatching them to immediate referral laboratories, maintaining and repairing equipment, and training staff (2). In collaboration with the League of Red Cross Societies, two documents were prepared, one on organizing blood transfusion services at the peripheral level, and another on producing blood-grouping reagents.

The need to improve the reliability of health laboratory results was clearly demonstrated by a worldwide laboratory proficiency testing programme organized by WHO during the 1980–1981 biennium. The Organization accordingly intensified its training programme in laboratory techniques, and its cooperation with countries in developing national quality control schemes. Seminars and workshops were organized on laboratory safety, particularly in the field of microbiology; local production and controlling biological reagents; and hospital cross-infection. Courses were held in the main laboratory disciplines, including: managing services; preventive maintenance, repair and control of equipment; and standardization, preparation and production of reagents. All courses emphasized simplified, inexpensive methodology and quality control.

WHO intensified its international proficiency testing programme in clinical chemistry, haematology, and bacteriology, with the technical support of collaborating centres in Belgium and the United Kingdom. One of the major reasons for the unacceptable quality of many laboratory results was the poor quality of the reagents used. Reference material, with assigned values

for some of the essential components, was prepared with the aid of collaborating centres in the United Kingdom and the United States of America and widely distributed. A protocol for evaluating reagent kits was developed and field-tested to allow national central laboratories to prepare national reference material and assess local methods and equipment. National production of reagents was promoted by visiting experts and training courses, especially in the African and South-East Asia Regions. A network of collaborating centres from Argentina, Brazil, Chile, Cuba and Mexico was established in the Region of the Americas. These laboratories distributed reagents to 11 other countries at a price that developing countries could afford.

On the basis of a survey carried out in collaboration with the International Federation of Clinical Chemistry, a preliminary list was prepared of the 20 chemical and haematological tests that were clinically the most relevant in the intermediate laboratory. A working group discussed the clinical value and relevance of these tests with a view to producing a manual offering a rational approach to selecting these tests and interpreting them. A manual recommending methods for essential clinical chemical and haematological tests for intermediate hospital laboratories was issued (3), as well as a set of guidelines on laboratory services at the primary health care level, based on field operational studies conducted in six Member States (4). Lists of essential reagents were included in both documents.

Although the number of laboratories participating in international external quality assessment schemes grew as the decade progressed, there remained a lack of understanding, both at government level and in the laboratory, about the essential role of quality assessment. The managerial component of quality improvement was critically reviewed during the 1982–1983 biennium at a meeting of directors from collaborating centres in Belgium, Denmark and the United Kingdom in order to identify more effective ways of helping participating countries improve laboratory performance. Several countries established national external quality assessment schemes, but progress was slower than expected owing to a lack of funding.

It was estimated that there were US\$ 6–8 billion worth of biomedical equipment in developing countries. Most of this equipment, however, was not adapted to withstand the prevailing environmental conditions. In some countries, up to 60% of the equipment lay idle because of the lack of maintenance and repair facilities. With the help of a group of experts, a programme to better utilize laboratory equipment was established, and guidelines for establishing a national maintenance and repair service were prepared (5).

To make simple, sturdy and low-cost laboratory equipment available, WHO cooperated with developing countries to evaluate locally produced equipment. Technical information was also provided to local industry to improve its equipment. This initiative benefited from the aid of the laboratory equipment research sections of the Clinical Research Centre and the Centers for Disease Control.

A feasibility study on developing an international medical laboratory information system concluded in 1986, having accumulated data on equipment, methods and specifications from nearly 300 other studies. This study was done by professional bodies and groups of scientists to establish criteria for standardization, and to demonstrate the value of compiling such data in a single database.

Radiation medicine

This programme aimed to improve population coverage with radiodiagnostic, radiotherapy, nuclear medicine and radiation protection services, including methods for investigating quality control and the efficacy of widely used procedures.

Of the three levels of required radiodiagnostic services (basic services at first referral level; general-purpose services at second referral level; and specialized services at the level of special institutions), the first was judged to be completely lacking or scarce in most developing countries. The concept of a basic radiological system was promoted by WHO to strengthen diagnostic ability at first referral level and reinforce primary health care services. It included a specially designed X-ray machine, along with a training package for machine operators and for those interpreting the film. Four prototype machines were produced, two of which were tested under clinical conditions in Copenhagen and Lund, Sweden. The results served to improve the design of the tube cassette holder. These machines were designed for use in places without electrical power supply, were easy to maintain, and produced consistently good radiographs in the hands of a locally recruited operator after a short period of training.

Field-testing of machines for WHO's basic radiological system started during the third biennium in Burma, Colombia, Cyprus, Indonesia and Nepal. The Regional Office for the Eastern Mediterranean committed substantial funds to projects for basic radiological systems in several countries.

In the African Region, a study group on improving radiological services met in Harare in May 1986 and recommended the adoption of the basic radiological system for district hospitals. WHO supplied 50 units to 12 Member States of the Eastern Mediterranean Region during the 1986–1987 biennium and their performance was carefully assessed as part of a global evaluation of the system.

By the end of the decade, 400–500 of these system machines were operating throughout the world. Intensive efforts continued to disseminate information about the basic radiological system to policy-makers and health professionals. Three illustrative manuals, audiovisual material and information packs, and an explanatory booklet, were prepared. Despite the scope of the promotional campaign, however, reports continued to be received of senior health officials being unaware of the concept. Equally disappointing, some Member States were still placing large orders for X-ray equipment that was unsuitable in design or in power for installation in areas where the basic radiological system would have been ideal.

Two WHO consultations on radiology were held, one in Africa, in Nairobi in November 1980, the other in Europe, in Copenhagen in December 1980, to discuss basic radiological services, problems related to radiotherapy, and the comprehensive development of radiological services at country level. The advisory group on basic radiological systems finalized a manual on radiographic interpretation during the 1982–1983 biennium. This was followed by manuals that dealt with radiographic interpretation for general practitioners, and darkroom and radiographic techniques for operators.

In collaboration with the Government of Zimbabwe and the International Society of Radiographers and Radiological Technicians, WHO organized a course on quality assurance in diagnostic radiology for radiographers in Harare in January 1983. This course was attended by 34 participants from 10 African countries. A training programme for diagnostic radiology, sponsored by WHO and the International Society of Radiology, was established at the University of Nairobi. Efforts were made through the society and the Italian Department for

Development Cooperation to ensure the continuous presence of visiting professors to teach and help develop the programme. A regional course on modern diagnostic radiotherapy held in Tokyo in November 1986 was cosponsored by WHO and the Japan Association of Radiological Technologists.

A meeting on the efficacy and efficiency of the diagnostic application of radiation and radio-nuclides was held in Munich-Neuherberg in the Federal Republic of Germany in December 1979, with a view to limiting the excessive use of diagnostic radiology and the risks and costs involved. The meeting, held with the financial support of the Federal Republic, recommended methods for efficacy/efficiency studies that could be used by either developing or economically developed countries. A similar meeting was held in November 1981 to review study results and to prepare national referral criteria.

A WHO scientific group met in November 1982 to consider the indications for and limitations of major X-ray diagnostic investigations. The group was asked to provide guidelines for using the more frequent diagnostic radiological examinations, with the aim of limiting their clinically unproductive use; i.e. examinations that produce little, if any, clinically useful information. The group reviewed chest, skeletal and abdominal examinations, providing advice for each specific condition. In drafting their recommendations, the group recognized that for only a limited number of radiological examinations were sufficient valid data available to objectively evaluate their usefulness. More needed to be learnt about the effect of diagnostic radiology on patient care; the relative role of conventional radiology compared with new diagnostic procedures; the utility of taking multiple views; the role of serial radiological examinations in the follow-up for particular diseases; and the inherent technical and perceptive limitations of specific radiological procedures (6).

Joint *International Atomic Energy Agency/WHO* newsletters were issued on quality assurance. The first two, issued in 1982, addressed diagnostic radiology and nuclear medicine. The third, published in 1988, addressed quality assurance in radiotherapy. Preparation of this issue began at a workshop in Schloss Reisenburg in the Federal Republic of Germany in December 1984, during which 35 participants from 15 countries reviewed a draft of the clinical and physical aspects of quality assurance in radiotherapy. These newsletters were presented at national and international seminars and made available at all training courses in which the Organization participated.

The availability of high-energy radiotherapy machines to different populations varied widely, with 30% of the world's population having one machine for more than 20 million people, while 17% had one machine for less than one million people. Since about 50% of cancer patients need radiotherapy at some stage of their disease, the extent to which such patients are diagnosed and treated in a given community has a direct effect on the availability of radiotherapy machines in that community. As utilization of such equipment was far from optimal, a meeting of investigators was convened in Cambridge, the United Kingdom, in 1978 to recommend ways of improving the situation, particularly in developing countries (7).

A scientific group met in Geneva in September-October 1984 to consider the future use of new imaging technologies in developing countries. It made recommendations on the clinical use of ultrasonic and computer tomography, and specified the technical parameters and conditions for the use of such diagnostic technologies in developing countries (8).

Less than 60% of Member States were judged at the beginning of the decade to have nuclear medicine services at the central level of the health-care system, and only a few countries, such as Japan and the United States and certain countries in Europe, could provide adequate

population coverage. In close collaboration with the *International Atomic Energy Agency*, an international symposium on medical radionuclide imaging, held in Heidelberg, the Federal Republic of Germany, in September 1980, included a panel on quality assurance, which led to an internationally coordinated study to evaluate the performance of nuclear medicine imaging devices, starting in September 1981. The study was undertaken in collaboration with College of American Pathologists, and the physics department at Westminster Hospital in London.

As a result of this study, more than 500 nuclear medicine imaging devices in 28 countries in the Americas, South-East Asia, Europe, the Eastern Mediterranean and the Western Pacific regions were tested. Significant differences in images among countries pointed to poor instrument maintenance. The results were communicated to participants in the study, together with recommendations on how to improve instrument quality assurance. Plans were made during the 1986–1987 biennium to expand the study, both in scope and content, and to publish its methodology and findings in order to facilitate similar national studies. Close collaboration continued with scientific institutions in developing appropriate technology for the quality testing of imaging devices.

To improve clinical dosimetry, the *International Atomic Energy Agency*/WHO postal inter-comparison service, based on the use of thermo-luminescent dosimeters, was continued and its results followed up. Two of the secondary standard dosimetry laboratories, in Bombay and Buenos Aires, took part in this intercomparison, and the network of these laboratories increased its work to improve clinical dosimetry. A series of circular letters to collaborating centres and other institutes ensured information exchange between participants.

Work continued on radiation protection in the medical use of ionizing machines. Film badge services were provided free of charge by the Service central de Protection contre les Rayonnements ionisants in France, and the Gesellschaft für Strahlen-und Umweltforschung in the Federal Republic of Germany. In addition, WHO helped redraft the International Commission on Radiological Protection, dealing with the medical use of ionizing radiation. It also participated in the work of the International Commission on Radiation Units and Measurements, and the International Electrotechnical Commission on standards for electro-medical equipment.

Biologicals

New international standards and reference preparations for all biologicals continued to be established throughout the decade, with their numbers increasing steadily from year to year. During the 1980–1981 biennium, for example, 25 new or replacement reference materials were established, bringing to 185 the total for international reference materials, and 180 for reference reagents. Biological substances were revised to adapt them to the latest scientific findings, while 30 international reference reagents and five international standards were established during the 1986–1987 biennium, four international standards were replaced and six international reference materials were abandoned. Each year, 11 000–13 000 ampoules of reference reagents were distributed. In 1987, an updated list of reference materials available for world-wide distribution was published (9).

To promote the local production and quality control of vaccines as part of the technical cooperation among developing countries initiative, the Regional Office for Africa organized a consultation of directors of centres involved in this work. Representatives from six countries

gathered in April 1979 and their main recommendations were to: prepare an inventory of regional laboratories and their production potential; orient present production capacity towards priority vaccines; and provide support to applied research on such vaccines, as well as the development of a coherent policy for training personnel at regional, subregional, national and institutional level. Ethiopia, Ghana, Kenya, Senegal and Zimbabwe subsequently agreed to make their control laboratories available as intercountry quality control and reference centres for vaccines.

Guidance on the national control of vaccines and sera was published in 1981 (10). It was designed to be of particular assistance to Member States contemplating establishing quality control systems, especially those countries where biologicals were being manufactured without any national control and, in some instances, without adequate testing by the manufacturer. While ministries of health decided the suitability of biological substances used in a community, responsibility for control could rest with the minister of health or another appropriate minister, a designated national controller, or the director of a national laboratory involved in the control of biological products. Manuals covering the production of vaccines used in immunization programmes were brought up to date regularly and distributed widely.

In the Region of the Americas, the main vaccine-producing countries aimed at self-reliance. Vaccine reference laboratories were providing substantial support, especially with vaccines provided through PAHO's Revolving Fund for the Expanded Programme on Immunization (EPI). In the South-East Asia Region, WHO cooperated with Bangladesh, Burma, India, Indonesia and Thailand to strengthen the production and quality of vaccines required for expanded programmes on immunization. Eight laboratories in developed countries were called on to test the safety and potency of vaccines used in EPI in developing countries.

With the financial assistance of the United Nations Development Programme (UNDP), a training programme was initiated in the quality control of biologicals. The initial response to this programme was disappointing, leading to the conclusion that either the importance of using safe and effective biologicals was not appreciated, or there were not enough people with a suitable background for this specialist training. While the number of people being trained slowly increased during the decade, the target of establishing national control authorities and laboratories in most developing countries by 1989 encountered serious problems. This led to a re-examination of the relationships between WHO's programmes, the national control authorities of countries producing vaccines for the Expanded Programme of Immunization, and the vaccine manufacturers themselves, with a view to eliminating the duplication of reviews and establishing levels of responsibility. Regional rather than national quality control programmes and facilities needed to be developed as a first step in those developing countries that were having greatest difficulty fulfilling quality-control standards for biologicals.

UNDP supported a feasibility study on establishing a global certification scheme for the quality control of vaccines. During the 1982–1983 biennium, consultants visited quality control laboratories in 23 countries in five regions to assess their stage of development with a view to having them participate in such a scheme. Some laboratories were provided with essential equipment for quality control.

Rapid development in the production of biologicals by recombinant DNA technology rendered inadequate some of the classical methods used in the control of biologicals. As a result, a consultation was held in Geneva in March 1983 to consider the new approaches and techniques applicable for producing and controlling these materials (11).

WHO convened a study group in Geneva in November 1986 to consider the acceptability of cell substrates for producing biologicals such as interferon, monoclonal antibodies and viral

vaccines (12). The group concluded that there was no reason why continuous cell lines should be used to produce biologicals, and outlined the precautions that should be taken for the satisfactory characterization of cells and the acceptable amount of residual cellular DNA. International collaborative studies were subsequently organized to characterize banks of continuous cell lines that should eventually be made available to Member States for producing biological substances.

About 160 scientists attended a meeting in Geneva in April 1986 to discuss the safety of blood and blood products and antibody screening issues in relation to AIDS. The meeting's main conclusions were that the immunoglobulin preparations, when manufactured using the conventional Cohn cold ethanol precipitation method, did not transmit human immunodeficiency virus (HIV) infection, irrespective of whether or not they contained antibodies to HIV; hepatitis B vaccines (derived from human plasma) that met WHO requirements did not transmit HIV; there was no evidence that albumin fractions prepared in accordance with WHO requirements could transmit HIV; and the risk of transmitting HIV by factor VIII or factor IX concentrates could be reduced or eliminated through treatment with proven methods of inactivation (13).

Pharmaceuticals

WHO increased its efforts to improve the quality of drugs. Its main effort was directed towards essential drugs used in developing countries where technical facilities for the full quality assessment of manufactured or imported pharmaceutical substances were rare. Since a lack of resources prevented many developing countries from introducing a comprehensive system of drug quality assurance, a WHO expert committee on specifications for pharmaceutical preparations met in November 1979 and made recommendations for priority action by health authorities establishing or expanding their national quality control systems (14). WHO directed its work towards strengthening national capabilities in this area.

In the African Region, a study was launched during the 1978–1979 biennium on the possibility of establishing regional drug control laboratories. In the Region of the Americas, laboratory capabilities were strengthened when the Caribbean Regional Drug Testing Laboratory was established in Jamaica. In the Eastern Mediterranean Region, specialist advice was provided to countries and fellowships awarded. Similarly, in the South-East Asia Region, training specialists in drug quality control and strengthening government drug control laboratories were emphasized. In the European Region, training programmes for pharmacists were reviewed.

During the 1982–1983 biennium, all activities concerned with the quality, safety and efficacy of pharmaceutical products were integrated into a single programme, which acted as a focal point to exchange information with national drug regulatory authorities and provide the technical basis to strengthen quality assurance and rationalize drug procurement in developing countries.

The effective control and utilization of pharmaceutical products at the national level relies on an international flow of information about their quality, safety and efficacy. From 1975, the WHO certification scheme on the quality of pharmaceutical products moving in international commerce became a prime vehicle for exchanging such information. By the end of the decade, the total number of countries participating in this scheme had risen to 124. The scheme had been conceived exclusively as a means of informing countries whether the products they proposed to import had been manufactured according to internationally accepted standards and registered in the country of origin. By the end of the decade, however, the scheme was perceived

as offering a more comprehensive exchange of information among countries, both on the quality of raw materials and finished products, and on their safety and efficacy, including prescribing information. Preliminary consultations with governments were completed with a view to proposing to WHO's governing bodies that the scheme be extended to meet this new objective.

WHO's recommended good practices for manufacturing and quality control of drugs continued to influence the pharmaceutical regulations of most drug-producing countries, including those that were major exporters to developing countries.

To satisfy the demand for training in drug regulation, WHO sought financial sponsorship from other interested parties, including governments, the pharmaceutical industry, professional organizations and universities. The International Federation of Pharmaceutical Manufacturers and Associations offered training places in drug quality control within the pharmaceutical industry. The offer was open to nationals of developing countries employed in government control laboratories (not connected with the manufacture of pharmaceuticals) and pharmaceutical inspection services. The training normally extended over a period of three to six months. As of May 1985, 66 applications had been received from 28 countries, half of which were in the African region, and 33 applicants had completed their training. An offer from the World Federation of Proprietary Medicine Manufacturers to train individuals as inspectors of manufacturing premises and distribution was being considered at the end of the decade.

Promoting the concept of essential drugs and regular revision of the WHO model list continued to determine many of the Organization's activities in the therapeutic field. During the revision of the list in December 1982, for example, 11 substances were added and six removed. The number of changes made in the section on anti-infective drugs alone showed that the pace of therapeutic innovation fully justified biennial review. As an aid to countries where drugs were commonly dispensed by a traditional healer or a community health worker, 22 substances were selected as particularly appropriate for use in primary health care. More information was needed in all countries, however, on patterns of drug use and their impact on health indicators. A methodology to obtain and interpret data on drug utilization was developed, the work having been coordinated by the European Regional Office.

The Director-General saw the list of essential drugs as one component of a healthier drug policy. National decisions on the priority use of drugs were also needed, and that was where "WHO was uniquely suited to act", according to a May 1980 session of the Executive Board. Dr Mahler used the phrase "honest broker" to depict the possible role of WHO; some took this as an indication WHO "might be taking sides on the issue" (January 1982 Board session). The issue that seemed to provoke most concern was WHO's potential role in developing a code of marketing practices, a possibility that emerged from the request by the World Health Assembly (resolution WHA31.32) to study how prices of pharmaceutical products were determined and how they might be reduced.

The International Federation of Pharmaceutical Manufacturers and Associations had developed its own voluntary code of marketing practices in 1981 and had expressed its willingness to report to the World Health Assembly on how the code was being applied. The Board's Ad Hoc Committee on Drug Policy discussed whether the WHO Secretariat should participate in monitoring the Association code but there was too much disagreement among its members for them to make a definitive recommendation. The Board discussed the matter in January 1984 but took no decision. Instead, the issue became incorporated in the mandate given to the Director-General (resolution WHA37.33) to convene a Conference of Experts on the Rational Use of Drugs, in Nairobi in November 1985.

Drug marketing was one of the matters that WHO suggested be considered at this conference (15). Others included improving drug information and information and training for rational drug use; making prescription practices more rational, including improved distribution; accelerating the development and implementation of national essential drugs programmes; and improving the use of the WHO Certification Scheme.

On drug marketing, several suggestions were made on the role governments could play in ensuring the drugs available in their countries were of acceptable quality, safety and efficacy; who should have the right to prescribe, distribute and sell drugs; what role should sales representatives be allowed in marketing drugs; what should be the ethical norms in the use of drug samples; what supervisory role should governments have over the marketing practices of the pharmaceutical industry; and what legislation should be enacted on drug marketing. In summarizing the results of the conference, the Director-General noted that “nobody contested the need to ensure ethical drug advertising, although there were differing opinions about the best ways of doing that” (16).

Reporting on the Conference to the 77th session of the Executive Board in January 1986, Dr Mahler said that “what had been termed the ‘spirit of Nairobi’ had emerged from the Conference, namely a conviction that an edifice of cooperation had been constructed despite the many conflicting interests involved. However precarious the ‘pyramid’ constituted by that edifice might be, the potential for future cooperation existed.”

In 1986, the Health Assembly adopted resolution WHA39.27, which urged all concerned parties “to assume their responsibilities as listed in the Director-General’s summing-up of the conference”, endorsed WHO’s revised drug strategy, and requested that the Director-General publish the report of the Nairobi conference and to ensure its wide dissemination. As outlined in his summary report, the Director-General proposed that the revised strategy would have WHO intensifying further the promotion of national drug policies and the Action Programme on Essential Drugs (see below); supporting governments to establish drug regulatory systems; enlarging the scope and use of the WHO Certification Scheme on the Quality of Pharmaceutical Products moving in International Commerce; enhancing information collation, analysis and dissemination; promoting training in rational drug use; defining ethical criteria for drug promotion; and supporting research.

WHO developed a set of *Ethical Criteria for Medicinal Drug Promotion*, which was adopted by the 1988 World Health Assembly. These criteria stated that promoting prescription and over-the-counter drugs should be consistent with national health policies; contain reliable claims, without misleading or unverifiable statements, or omissions that could lead to health risks; and should not be designed to disguise its real nature; as educational or scientific activities, for example. The *Ethical Criteria* also included general guidelines for advertisements to the medical profession and the public, the conduct of sales representatives, free samples, symposia and scientific meetings, post-marketing studies, packaging and labeling, patient information and promoting exported drugs.

An expert committee on essential drugs, meeting in December 1987, encouraged national authorities to issue certificates conforming precisely with the new format proposed by WHO to ensure that explicit explanations were provided on where a product was manufactured or assembled, and whether WHO’s standards of good manufacturing practice were applied. It also urged countries that had not already done so to extend the system of licensing to manufacturers of pharmaceutical products destined exclusively for export (17).

In addition to promoting bilateral communication between exporting and importing countries, efforts continued to consolidate and expand the information the programme disseminated multilaterally. For normative purposes, and in collaboration with national drug nomenclature commissions, a cumulative list of international nonproprietary names (INNs) for pharmaceutical substances was regularly prepared; the seventh list went to press at the end of the decade. Similarly, *The International Pharmacopoeia* was updated regularly. The third volume, published in 1988, completed the coverage of quality standards for drug substances contained in WHO's Model List of Essential Drugs (18). As well, general monographs for dosage forms were prepared to provide a basis to develop individual specifications for finished pharmaceutical products. A series of simplified basic tests for confirming the identity of pharmaceutical substances and a compendium of information on their stability characteristics were also produced to create a capability for limited testing of products outside the laboratory (19).

The WHO programme on selecting INNs aimed to identify each pharmaceutical substance by a unique, globally recognized generic name to facilitate communication and for the labelling and advertising of medicinal products in international commerce. Officially assigned generic names rarely differed from the INNs, and some countries had dispensed with their national commissions and automatically accepted all recommended INNs. Some difficulties were encountered, however, because of an increasing tendency among manufacturers of generic drugs to seek commercial advantage for their products by registering trade names that were closely related to INNs. In countries that did not discourage such practices, such naming practices risked dangerous confusion in prescribing and dispensing medicines.

In May 1985, a memorandum of collaboration was signed by the United Nations Environment Programme and WHO, which made WHO responsible for collecting, processing and screening information on pharmaceutical products for inclusion in the United Nations list of products whose consumption and/or sale had been banned, withdrawn, severely restricted, or not approved by governments. Consultations with governments were held to determine the precise criteria to be applied in listing such products.

WHO urged national administrations to submit the name of an individual to serve as the designated national information officer on drug control, responsible for providing WHO with details on all domestic regulatory decisions of international relevance. In 1984, for example, these officers – there were 132 by the end of the decade – provided details on regulatory action on more than 400 products. Once collated, this information was circulated to all national authorities at monthly intervals. This mechanism complemented the discursive articles on regulatory problems contained in the WHO quarterly bulletin, *Drug Information*, which was widely distributed to ministries of health, pharmaceutical manufacturers, teachers of medicine and consumer groups. In the European Region a series of guidelines for clinical investigation of specific classes of drugs was prepared.

WHO's role as a focal point for the exchange of information on the efficacy and safety of pharmaceutical products was consolidated by its active support of drug surveillance activities through the WHO Collaborating Centre for International Drug Monitoring in Uppsala, Sweden, and by continued sponsorship of the biennial International Conference of Drug Regulatory Authorities (ICDRA). As a result of a joint initiative by the United States Food and Drug Administration and WHO in 1980, the biennial ICDRA became an influential yet informal mechanism for exchanging views and information, and for promoting collaboration between national drug regulatory authorities. The ICDRA gave national officials an insight into how other countries at all levels of development approached their tasks and how they

responded to common problems. It also provided an opportunity to exchange views on unresolved and innovative aspects of drug control, such as labelling pharmaceutical products, developing orphan drugs, and the impact of recombinant DNA technology on the regulatory process. Representatives from 67 countries attended the 1984 conference, which was cosponsored by the Swedish Board of Drugs. Conference delegates emphasized the need for information to be shared more effectively on the outcome of national review procedures for marketed drugs. In alternate years, WHO organized consultative meetings with the heads of representative national agencies to review the implementation of conference recommendations and to plan future meetings.

Action programme on essential drugs

Technical discussions in 1978 on general policies and practices for medicinal products and related international problems had resulted in general approval of the concept of essential drugs. Subsequent resolutions requested that the Director-General establish an action programme on essential drugs, which he did on 1 February 1981. The objective of this programme was to ensure the regular supply to all people of safe and effective drugs and vaccines at the lowest possible cost in support of primary health care, within the framework of the Global Strategy for Health for All.

In May 1982, the Thirty-fifth World Health Assembly (resolution WHA35.27) endorsed the objectives, targets, approaches and activities of the action programme. It was first necessary to identify therapeutic needs, to select essential drugs accordingly and to estimate the quantities needed for each of them. A drug supply system had to be devised or strengthened to cover procurement, storage, inventory control, distribution, logistic support and training personnel. The correct use of drugs had to be promoted by providing different categories of prescribers with objective information, and training them to use it effectively, as well as informing and educating the public. The technical and economic feasibility of local formulation and production of drugs had to be considered, quality control ensured, and provision made for monitoring adverse reactions. Appropriate legislation was also needed. The manpower requirement to conceive and implement the national drug policy had to be decided on and appropriate training provided. Measures had to be adopted to ensure the coordinated action of all sectors involved, such as health, education, planning, finance, industry, trade and communication. Monitoring and evaluation procedures had to be adopted, and a financial master plan devised for all such activities.

Technical reports, country case-studies, workshops, seminars and conferences all contributed to promoting the essential drugs concept. Case-studies developed at the Harvard University School of Public Health in Boston, USA, were used as a basis for teaching, in both English and French, at six other schools. Similar case-studies were prepared in Spanish. Curricula and teaching materials for schools of medicine and pharmacy were developed in collaboration with various universities. Promotional activities also included producing brochures, newsletters and audiovisual material, including a television film. An annotated bibliography of the relevant literature was prepared.

A meeting on drug policies and management, held in Geneva in October 1982, discussed guidelines for developing national drug policies. A demonstration workshop was held in Kenya in 1982 and two (one in French, one in English) in 1983; a working group subsequently met to prepare a handbook with guidelines to assist policy-makers identify and solve problems in

planning and establishing essential drug programmes. In addition to guidelines and manuals, there was an increased exchange of experience among countries as the decade progressed. Coordination within the United Nations system and the division of labour among its organizations was well defined. WHO worked closely with the United Nations Children's Fund (UNICEF) and its expanded procurement and packaging facility UNIPAC in Copenhagen.

An expert committee on the use of essential drugs, convened at the end of 1982 at the same time as the list that had been established in 1979 was being updated, indicated the need for research and development in the clinical, pharmaceutical and administrative sectors (20). In the clinical field, new drugs needed to be evaluated; the benefits and safety of traditional herbal remedies investigated; the effects of genetic, nutritional and environmental factors on the therapeutic response established; and the value of non-medicinal forms of treatment explored. Dose-response studies needed to be conducted where there appeared to be differences in therapeutic response or the incidence of adverse reactions in specific populations.

At the third session of the expert committee in December 1987, research on the educational aspects of essential drugs was added to the agenda, with a call to develop simple, concise labels for each dosage form. The committee also considered developing appropriate public education and information programmes on conditions for which early recognition of symptoms and prompt self-medication were crucial; and developing training programmes in policy formulation, quality control and pharmaceutical information systems, and in procurement, production, storage and distribution procedures (17).

As the pace of operational research increased, several initiatives were undertaken. A network of experienced social scientists having an interest in the rational use of drugs was established to create or strengthen links among research institutions in developing countries working in the same field. Epidemiological research commenced in 1986 in Botswana, Lesotho and Zimbabwe, where information was collected to estimate drug requirements, using the methodology developed by WHO. To assist health-care planners determine the extent to which communities could finance their own health care, socioeconomic research on how much people spent on medicines was carried out in seven Member States (Benin, India, Kenya, Mali, Senegal, Sri Lanka and Thailand) in conjunction with studies to find ways to generate additional resources for purchasing drugs. People's perceptions of drugs and how they were used were examined in a study of how modern medicines fitted into popular beliefs about the causes of illness and appropriate forms of treatment. Informing patients on the rational use of drugs was an integral part of this study.

Although the training of primary health care workers expanded rapidly, training in the correct use of essential drugs was often underemphasized. Also, few schools of medicine and pharmacy or paramedical training institutions had changed their curriculum in a way that would influence how pharmaceuticals were prescribed or used in either the public or the private sector. Teaching material produced by countries developing an essential drugs programme was compiled, and the best experiences incorporated into a modular training system for countries to adapt. Material for training in logistics was field-tested, along with a methodology for estimating drug requirements. The latter became available in both computer and manual form (21). Training chief pharmacists and procurement staff in its use began during the last biennium of the decade, by which time workshops and seminars had gradually shifted from intercountry to national training activities.

A set of slides for training health workers in the rational use of drugs was prepared for WHO by Teaching Aids at Low Cost at the Institute of Child Health in London. Educational material

on the correct use of drugs was prepared for patients – there was accompanying material for use by health workers – and field-tested in a few countries during the 1986–1987 biennium.

WHO's revised drug strategy was adopted in May 1986 (see above), leading to an acceleration of activities in 1987. Extrabudgetary resources that became available led to some targets being exceeded. By the end of the decade, 37 countries had national programmes operating, while 24 were in the process of establishing programmes and 19 were actively considering doing so. Also, 109 countries had established national lists of essential drugs, while 26 countries had no or little information to report. Programmes were often developed with support from WHO, UNICEF, the World Bank, bilateral development agencies, and on a smaller scale, nongovernmental organizations. A summary of WHO's support for national programmes on essential drugs was prepared in 1987 as an example of major country-based activities by WHO (22).

Traditional medicine

During 1978–1979, traditional medicine became an important element in the strategy for obtaining health for all by the year 2000. The Alma-Ata Conference had recognized the role of practitioners of traditional medicine in primary health care teams at community level, and it became apparent during the biennium that interest in traditional medicine was not confined to the developing countries or to African and Asian cultures in particular, but extended worldwide. Accordingly, a global programme was instituted, one that was coordinated in Geneva but implemented at regional or country level in accordance with the wishes of individual countries. In 1979, the Executive Board (resolution EB63.R4) requested that the Director-General intensify the programme's development and implementation by way of a more realistic and flexible approach to traditional medicine through health-care programmes adapted to socioeconomic conditions.

The role of WHO was to support Member States make effective use of traditional systems of medicine as part of their primary health care programmes. A publication for health administrators and practitioners examined the most common patterns of traditional medicine systems and some of their local and regional variations, and suggested how they might best apply this information to improve health-care coverage, particularly in developing countries (23). Guidelines were prepared during the 1982–1983 biennium on how to recognize and prepare the most commonly used medicinal plants and their extracts, and to apply sound quality control over the process.

National efforts to incorporate safe and useful traditional medicine into the health system were critically examined. This analysis fed into a consultation in February 1985 on approaches for developing policies on traditional practitioners, including traditional birth attendants. The consultation in New Delhi brought together participants from the six WHO regions, representing the various disciplines concerned with traditional medicine, and included administrators, lawyers, sociologists, anthropologists, educators and practitioners of traditional medicine. The report of the meeting outlined the action required to promote policies to mobilize the potential of traditional practitioners for primary health care.

The African Region organized a consultation in Brazzaville in July 1984 to evaluate past activities and propose a way to coordinate the work of institutions concerned with traditional medicine. The meeting also proposed a plan of action for collaborating centres. In the Eastern Mediterranean Region, an intercountry meeting was held in Kuwait in April 1985 to compile a

core list of medicinal plants for use in primary health care and to prepare a comprehensive plan for regional work in this field.

An interregional seminar held in China in October 1985 gave those responsible for health policy at national level an opportunity to study the use of traditional Chinese medicine in primary health care and to discuss adopting comparable approaches in their own countries (24). This seminar was followed by a WHO/Danish International Development Agency-sponsored interregional workshop on appropriate methodology for selecting and using traditional remedies in national primary health care programmes (25). The workshop in Bangkok in November 1985 was attended by 17 participants from five countries and emphasized the need to combine traditional and modern sources of information with modern toxicology testing to promote the safe use of traditional remedies. Follow-up activities were evaluated in Indonesia, Nepal and Thailand, where national workshops were held and single-plant remedies selected for use in their health services. There was also a good outcome from the 1985 seminar in China, with several of the Member States represented there (Bangladesh, India, Nepal, the Philippines, Sri Lanka and the Sudan) taking action to make better use of their traditional systems of medicine.

WHO supported those Member States take active steps to improve and expand the use of traditional medicine in their health services. In 1986, for example, the Ministry of Health and Family Welfare of India organized four regional seminars on how to collect, cultivate, exploit, conserve and rationally use medicinal plants, and with WHO, cosponsored a first international seminar on Unani medicine, which was held in New Delhi in February 1987.

In the Western Pacific, a regional working group met in Tokyo in May 1984 to review progress in the standardization of acupuncture nomenclature; a follow-up working group met in Hong Kong in July 1985. Several country workshops on the role of traditional medicine in primary health care were organized in the region. Technical discussions on the subject were held at the 36th session of the Regional Committee. Following a third regional working group meeting on the standardization of acupuncture nomenclature, held in Seoul in June 1987, a further publication on nomenclature was prepared to facilitate the exchange of information in this field. A regional scientific group met in Tokyo in March 1986 to discuss the methodology of research into herbal medicines and determined three priority areas in which activities could commence. A national workshop was subsequently conducted in Viet Nam in January 1987. A model list of medicine plants commonly used in the South Pacific area was compiled on the basis of studies conducted in Fiji, Papua New Guinea, the Philippines, Samoa and Vanuatu. A survey of medicinal plant resources was subsequently conducted in Fiji.

WHO collaborating centres for traditional medicine helped strengthen national efforts in research and development. By the end of the decade, there were 21 such centres: five in the African Region, three in the Region of the Americas, two in the South-East Asia Region, two in the European Region, one in the Eastern Mediterranean Region, and eight in the Western Pacific Region. The centres undertook research and evaluated traditional practices, and also trained nationals in research methodologies linking research institutions in developed and developing countries, thereby enabling technology to be transferred for identifying, collecting, preparing, storing and manufacturing herbal remedies. Through the database system NAPRALERT at the WHO Collaborating Centre for Traditional Medicine at the University of Illinois in the USA, information on plants and plant products relating to chemistry, pharmacology and ethno-pharmacology was made available, free of charge, to institutions, public health administrators, traditional practitioners and scientists, especially those working in developing countries. The Chicago-based centre also produced the *International Traditional Medicine*

Newsletter and organized, jointly with WHO, an international symposium on the role of plants and traditional medicine in primary health care that was held in June 1987 in conjunction with the annual meeting of the Society for Economic Botany.

A meeting in Beijing in November 1987 of the directors of WHO collaborating centres for traditional medicine provided an opportunity to develop closer working relationships among the centres and to secure their greater participation in the programme.

The Fortieth World Health Assembly gave a fresh mandate for the Organization's future involvement in traditional medicine when it adopted resolution WHA40.33, urging Member States to initiate comprehensive programmes to identify, evaluate, prepare, cultivate and conserve medicinal plants used in traditional medicine; and to ensure the quality control of drugs derived from traditional plant remedies by using modern techniques and applying suitable standards and good manufacturing practices. The Director-General was requested to mobilize extrabudgetary funds to assist Members implement these activities and to promote intercountry seminars to improve mutual understanding, the dissemination of knowledge and the exchange of experience.

Rehabilitation

At the beginning of the decade, it was estimated that of the 60 million people in the world who could be helped to live a better life by improving their functional capacity, 40 million lived in developing countries, where few of them had access to any services at all. To ensure such services were provided, a manual on community training for the disabled was prepared. This contained guidance on training that could be carried out by members of the disabled person's family with minimum supervision by primary health care workers. It also described measures that could be taken by teachers and community leaders.

A meeting of representatives from countries where the manual had been tested was held in Mexico City in November 1979 to consider the next steps to be taken. These steps included further feasibility studies and a final evaluation of the manual's contents to be undertaken in 1981, the International Year for Disabled Persons. An interregional consultation held in Colombo in June 1982 concluded that the approach elaborated in the manual was feasible, effective and economically viable, and that the manual was a valuable practical tool. The final version of the manual was published in 1983 (26), in time for it to form part of a cooperative programme for the United Nations Decade of Disabled Persons (1983–1992), involving the United Nations Development Programme (UNDP), UNHCR, UNICEF, the United Nations Centre for Social Development and Humanitarian Affairs, the International Labour Organization, UNESCO and WHO. By the end of the decade more than 100 000 copies of the manual had been issued and it had been translated, either fully or partially, into more than 20 languages.

In addition to supporting planning for rehabilitation in 12 countries, the managerial aspects of rehabilitation were promoted through the guide *Rehabilitation for all* and several workshops (27). An interregional consultation for teachers of community-based rehabilitation methods was held in Saint Lucia in November 1983, and training programmes were promoted in Botswana, Burma, China, Haiti, Jamaica, Pakistan and Saint Lucia.

In developing countries, programmes for the disabled continued to rely heavily on nongovernmental organizations, voluntary manpower and financial assistance. WHO adopted a strong advocacy role necessary to convince governments that effective low-cost action was possible,

especially at the peripheral levels where rehabilitation services were least accessible. To this end, regional and intercountry workshops on planning and managing community-based programmes were organized in Trivandrum, India, in February 1982, in New Delhi in December 1982, and in Manila in November 1983. The community-based rehabilitation programme was also promoted at a seminar on disability prevention that was held within the framework of the Fourth World Congress of the International Rehabilitation Medicine Association in Puerto Rico in April 1982; at a joint meeting with the Medical Commission of Rehabilitation International in Geneva in June 1983; at a seminar on community services in Ljubljana, Yugoslavia, in October 1982; at an interagency meeting in Vienna in July 1982; and at a further interagency meeting in Geneva in May 1983 on the World Programme of Action concerning Disabled Persons that was adopted by the United Nations General Assembly at its thirty-seventh session.

IMPACT, a joint initiative by UNDP, UNICEF and WHO, aimed to strengthen the disability prevention component at the planning and implementation stages of development projects. The Regional Office for South-East Asia provided technical support to launch IMPACT in India in October 1983. UNICEF and UNDP provided financial support in several countries for this initiative.

A meeting with representatives of about 20 nongovernmental organizations was convened in Negombo, Sri Lanka, in February 1987 to encourage national community-based rehabilitation programmes and resulted in an agreement on joint activities. Planning missions and reviews of country needs were undertaken, and a computer programme devised to compile data on rehabilitation activities in all countries.

In 1987, the technology and delivery systems for lower-limb appliances, such as braces and prostheses, were reviewed. The ultimate aim was to standardize technology and staff training to make services in developing countries more efficient and effective. Work continued on standardizing definitions of impairments, disabilities and handicaps.

Extrabudgetary resources were mobilized for both rehabilitation and to prevent deafness and hearing impairment. Among the biggest donors were the Norwegian Agency for Development Cooperation (NORAD), the Swedish International Development Authority and some large nongovernmental organizations.

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Disease prevention and control

The Seventh General Programme of Work defined health science and technology as an association of methods, techniques, equipment and supplies, which together with the research required to develop them, constituted the contents of a health system. As such, health science and technology dealt with:

- identifying technologies already appropriate for delivery by the health system infrastructure;
- research required to adapt or to develop technologies that were not yet appropriate for delivery;
- transferring appropriate technologies;
- searching for social and behavioural alternatives to technical measures;
- related aspects of social control of health science and technology.

Immunization

In 1977, the Thirtieth World Health Assembly (resolution WHA30.53) approved the objective for all children of the world to be immunized by 1990, particularly against diphtheria, pertussis, tetanus, measles, poliomyelitis and tuberculosis. In 1978, the Thirty-first World Health Assembly (resolution WHA31.53) emphasized the importance of immunization as a component of health programmes such as maternal and child health and primary health care, and requested that the Director-General continue to implement this programme as a high priority.

At the time of the Alma-Ata conference, no immunization training programmes had been developed; no consensus existed on the information needed to monitor and evaluate progress; no routine reporting was made of immunization coverage and vaccine quality, particularly in the developing countries; and few efforts were being made to provide immunization within the framework of comprehensive health services. By the end of the 1980–1981 biennium, this situation had changed dramatically: all developing countries and areas were in the process of implementing immunization programmes in accordance with WHO recommendations that included specific targets for immunization coverage of the infant population and disease reduction.

In 1982, the Thirty-fifth World Health Assembly (resolution WHA35.31) warned that progress would have to be accelerated if the goal of providing immunization to all children of the world was to be met by 1990. Member States were urged to adopt the following five-point action programme recommended by the Expanded Programme's Global Advisory Group:

- promote the expanded programme of immunization (EPI) within the context of primary health care;
- invest adequate human resources in EPI;
- invest adequate financial resources in EPI;
- ensure that programmes were continuously evaluated and adapted so as to achieve high immunization coverage and maximum reduction in target-disease deaths and cases;
- pursue research efforts as part of programme operations.

Promoting immunization within the context of primary health care helped the community become an active partner in the programme, and delivered immunization services to support other health services directed towards mothers and children.

Community participation was a major theme of the 1982 annual meeting of the programme's global advisory group when it met in Brazzaville (1). In line with the group's earlier recommendations, promoting immunization services from the village level became part of the African regional programme on women in health and development, and information and education materials were developed for schools and village health committees. There were similar activities in the South-East Asia Region and in certain Eastern Mediterranean Region countries.

Delivering immunization services to support other health services directed towards mothers and children was addressed through training and evaluation activities. Training materials, combining elements of both the immunization and the diarrhoeal diseases control programmes, were introduced for middle-level health workers, though much of this material was also broadly relevant for all supervisors working at middle-management level. In addition, a new training module was produced to teach workers how to fill out and interpret growth charts; training materials were developed for use by peripheral health workers to promote clean childbirth practices; and tetanus immunization for mothers was introduced. Primary health care logistic courses, covering immunization, diarrhoeal disease control, malaria control, the supply of essential drugs and the distribution of contraceptives, were organized.

Support for training was provided within the framework of other programmes, and programme reviews were carried out to examine immunization arrangements, together with selected elements of maternal and child health and primary health care activities, with a view to promoting their joint implementation. Studies were made on the costing of immunization within more comprehensive services and training traditional health attendants. All of these training and evaluation activities were supported by voluntary funds, particularly from the Netherlands and Sweden.

The scarcity of good managers continued to be the major constraint for the programme. Training alone could not compensate for a basic shortage of skilled staff. While waiting for larger numbers of national staff to become available, WHO promoted the assignment of international staff. The assignment of associate experts was a welcome development. Finland, the Netherlands, Sweden and Denmark offered the services of such experts, who served as medical or technical officers in the regional offices or at country level. Extrabudgetary resources from Denmark enabled additional field posts to be created.

Support from external sources markedly increased during the 1984–1985 biennium. These sources included UNICEF, UNDP, the World Bank, and bilateral development agencies (including those in Australia, Canada, China, Denmark, Finland, France, Italy, Japan, Kuwait, the Netherlands, Norway, Sweden, Switzerland and the USA) and private and voluntary funds (including the Arab Gulf Program for Development, Rotary International, the Japan Shipbuilding Industry Foundation, through the Sasakawa Health Trust Fund, and the Save the Children Funds of the Netherlands and the United Kingdom).

As noted in Chapter 1, a conference on the theme "Protecting the world's children: vaccines and immunization within primary health care", sponsored by UNICEF, UNDP, the World Bank and WHO, and hosted by the Rockefeller Foundation in Bellagio, Italy, in March 1984, led to a task force for child survival, with the objective to promote immunization and reduce childhood morbidity and mortality by accelerating key primary health care activities, focusing initially on immunization. A further meeting was held in October 1985 in Cartagena, Colombia, where the

1990 immunization goal was reaffirmed (2). In May 1985, the PAHO/AMRO Regional Director, Dr Carlyle Guerra de Macedo, proposed the goal of interrupting wild poliovirus transmission in the Americas. With the strong support of all Member governments, he launched a multiagency campaign; among the partners were UNICEF, USAID, Rotary International, the International Development Bank, and the Canadian Public Health Association. The African ministers of health declared 1986 African Immunization Year; and in 1987, the Organization of African Unity summit in Addis Ababa declared that 1988 would be the Year for the Protection, Survival and Development of the African Child.

Costing studies on immunization continued to improve the data available. From these it was estimated that the overall cost in 1983 for the recommended immunization regimen was US\$ 5 per fully immunized child. That cost was judged to be most likely obtainable when coverage was relatively good; for example, a 60% coverage for the third doses of DTP (diphtheria-tetanus-pertussis) and poliomyelitis vaccines, and for a single dose of measles vaccine. In many programmes, contributions from external donors were estimated to be only 20% of total costs, representing mainly vaccines and a proportion of supplies and the cold chain equipment; the major financial investments in the programme had to come from within the developing countries themselves.

UNICEF emphasized immunization, along with monitoring the nutritional status of children through the use of growth charts, promoting appropriate breastfeeding and weaning practices, and providing oral rehydration to treat diarrhoea, and was a major provider of vaccines and cold chain equipment to developing countries. The increased priority it gave to immunization had a positive impact on political leaders, as noted in Chapter 1.

Applied research was another continuing priority, especially that related to the cold chain. Projects included evaluating a time/temperature indicator for measles vaccine; developing inexpensive plastic syringes that could withstand up to 200 sterilizations in a pressure cooker; and modifying pressure cookers to provide safe, effective and convenient sterilization of syringes and needles. Solar refrigerators were also evaluated in the laboratory and the field. All of these activities were funded by annual contributions from the Japan Shipbuilding Industry Foundation.

Research on the cold chain resulted in a marked increase in the range and quality of products available on the market. The fifth edition of the joint UNICEF/WHO document *The cold chain: product information sheets* was issued in 1985 in English, French and Spanish. It provided a guide to buying the most suitable materials, such as cold rooms, freezers, refrigerators, cold boxes and accessories. Of the 126 items listed in 1985, about one fifth was being manufactured in developing countries.

A comprehensive review of the Expanded Programme on Immunization (EPI) progress was presented by the Director-General to the World Health Assembly in May 1986. The Health Assembly (resolution WHA39.30) affirmed that the EPI goal remained a global priority, warned that the goal would not be achieved without continuing acceleration of national programmes, and urged Member States to pursue vigorously the recommendations for action contained in the Director-General's report. The Global Advisory Group at its meeting in New Delhi in October 1986 reaffirmed the actions endorsed by the Health Assembly (3). In particular, it gave high priority to social mobilization efforts; adopting a mix of complementary strategies for programme acceleration; using mechanisms that strengthen the delivery of other primary health care interventions; providing immunization at every contact point; reducing drop-out rates between first

and last immunizations; improving immunization services to the disadvantaged in urban areas; and increasing the priority for the control of poliomyelitis, measles and neonatal tetanus.

Disease vector control

The Seventh General Programme of Work called for national and international action to enable at least 50% of countries severely affected by vector-borne diseases to acquire by 1989 the means to be self-reliant in developing, implementing and evaluating vector control strategies, and to involve communities in their self-protection. High priority was given to strengthening institutions in endemic countries to further expand a network of collaborating centres for vector research, training and advisory services so that appropriate control strategies could be developed under every set of epidemiological and socioeconomic conditions. Community involvement in vector control was encouraged through motivation activities and education.

The Programme of Work also called for greater cooperation with the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization and industry to develop more cost-effective materials and methods, with due consideration given to their human and environmental safety and social acceptability. Priority was given to preventive measures based on environmental management whenever possible.

In collaboration with national authorities and the Special Programme for Research and Training in Tropical Diseases, a concerted effort was made to organize and support a series of Master of Science courses in medical entomology and vector control in four WHO Regions: Africa (Nairobi, Jos, and Bouaké), the Americas, Eastern Mediterranean, and South-East Asia. Support was given to universities in Bogor, Indonesia, and Bangkok. The Regional Office for the Eastern Mediterranean established a training centre for malaria and vector biology and control in collaboration with the Government of Iraq. The Western Pacific Regional Office provided training and control for health inspectors and related staff in several countries. It also organized national training courses and in-service training during field activities in Malaysia, the Philippines, and several South Pacific countries and areas.

In cooperation with the Danish International Development Agency, training courses in medical entomology and vector control were held for middle-level staff during the 1980–1981 (Indonesia), 1982–1983 (Malaysia, Singapore and Colombia), 1984–1985 (Burma, China and Egypt), and 1986–1987 (China, Egypt, Peru and Zimbabwe) bienniums.

A five-month WHO/USAID post-graduate course in medical entomology and vector control was conducted in Burma during the 1986–1987 biennium for the benefit of the staff of the vector-borne disease-control project. In preparation for the second Fogarty International Center/USAID/WHO regional workshop on manpower development for disease vector research and control, held in Thailand in 1988, medical entomology manpower studies were carried out in Burma, India, Indonesia, Thailand and most of the other Member States of the South-East Asia Region where lack of resources and career prospects, and inadequate training facilities, were impeding the technical performance of vector disease-control programmes.

With detailed information lacking in many parts of the world, several issues in the WHO/vector biology control series of documents summarized new developments in this area. Subjects covered included the vectors, reservoirs and control of the different vector-borne diseases. A special effort was made to consolidate in one manual the environmental methods for mosquito

control, many of which had gone out of favour with the development of chemical insecticides after World War II (4). The aim of this manual was to provide information on environmental management techniques, methods and practices to control mosquito vectors of malaria and other diseases, and to familiarize vector-control workers with these interventions to enable them to carry out simple environmental management works, especially in the context of primary health care activities. The manual also provided information to help planners, designers and constructors of water resources development projects appreciate the health implications of such projects, and to design and operate them in ways that would prevent or reduce the introduction and spread of mosquito-borne diseases.

Environmental management for vector control was addressed by a WHO expert committee that met in November 1979, the first time a meeting on this important subject had been convened. In addition to proposing a manual on this subject, the committee recommended that information on research, progress and innovations be collected and widely circulated, and that visual training aids be prepared. WHO subsequently prepared an extensive series of slide sets and brochures on all aspects of vector biology and control, which were updated as required.

In 1981, the joint WHO/FAO/UNEP Panel of Experts on Environmental Management for Vector Control (PEEM) was established to provide the institutional framework for interagency and multisectoral collaboration to promote environmental management measures for vector control in disease-control programmes and projects to develop resources. PEEMs activities included funding research projects that aimed to develop new control measures (e.g. the potential of remote sensing techniques in vector-borne disease monitoring); prepare technical guidelines on various aspects of control (e.g. the cost-effectiveness of different control methods); and field-test proposed curriculum and syllabus at engineering institutes in different countries. PEEM developed a publication programme that recorded the work of technical workshops and proceedings; those organized, for example, in conjunction with the International Irrigation Management Institute in Sri Lanka, the International Rice Research Institute in the Philippines, and United States Department of Agriculture in Washington, DC.

In December 1981, the expert committee met again to discuss the biological control of vectors of disease. The promising results achieved by microbial insecticide (*Bacillus thuringiensis*, serotype H-14) and the renewed attention given to the use of larvivorous fish for vector control were cited as reasons for asking the committee to examine critically the place of such agents in vector control. The committee agreed that biological control agents could play “a useful role in naturally regulating vector populations and could be utilized effectively as a component in integrated vector control programmes” (5). It endorsed the work being done in this field and recommended expanding the search for and evaluation of organisms with vector control potential.

At its next session in December 1982, the expert committee assessed integrated vector control (6). In addition to reviewing the status of vector control programmes, including integrated vector control projects in progress, the committee paid particular attention to community participation in vector control, research requirements for integrated vector control, and vector control in urban areas. The committee made a series of recommendations on each of these subjects, all of which stressed the need for core groups to be established with suitable expertise to plan and execute the range of activities needed to develop integrated vector control programmes. WHO was requested to consider “setting up a data bank to record, analyse, and disseminate information on vector control activities at community level”.

A workshop on vector-borne diseases and irrigation was organized by PEEM and held at the International Irrigation Management Institute (IIMI) in Sri Lanka in October 1985 to review

the results obtained by IIMI through the use of environmental management control methods in large irrigation schemes.

In December 1986, a scientific group met to address vector control in primary health care, with particular attention given to the technical aspects, available resources, the training needs of personnel, and the role of the professional core group and the district health management team (7).

Several examples from regions illustrated the considerable efforts that were being made to include vector control in primary health care in endemic countries. For example, 11 countries of the African Region reported community participation in rural, urban and periurban areas in efforts to control malaria vectors through environmental control, larviciding, house spraying, or a combination of all such measures. In the Caribbean, a growing proportion of *A. aegypti* control activities were based on improvements in sanitation carried out by the community. Control programmes for dengue haemorrhagic fever in Burma, Indonesia and Thailand were other examples of community interventions against the vector as part of primary health care.

Particular attention was paid to communication and epidemiology, the suitability of various vector control measures for primary health care, and human resource needs and development. Programmes in Africa and Central America had demonstrated that much epidemiological data could be collected by community health workers, including illiterate workers, using patient report forms with simple stick-figure drawings representing the age, sex, residential status and symptoms of the patient.

At its last session for the decade, in September 1987, the expert committee discussed urban vector and pest control (8). Reports from the regions documented the impact of rapid urbanization in the growth of slums around big cities and the creation of favourable breeding conditions for insect vectors, pests, rodents and other reservoirs of disease. Authorities were finding it harder to cope with the rapid growth of human populations as well as breeding sites. The committee recommended that the essential contribution to be made by “appropriate urban and demographic planning in preventing the deterioration of urban and periurban health conditions” should be emphasized, and that given the evidence that action by governments alone was insufficient to control urban vectors, “communities should set their own priorities, be more self-reliant and participate actively in their own protection. Many vector control operations are labour-intensive and would benefit from the manpower resources available within the community.”

The publication *Chemical methods for the control of arthropod vectors and pests of public health importance* (1984) was widely distributed as an aid in designing and managing programmes. There were advances in the computerization of global monitoring of the susceptibility of disease vectors to pesticides, enabling information to be sent to Member States, institutions and research workers. Use of the WHO Recommended Classification of Pesticides by Hazard increased following its incorporation into articles of the *FAO International code of conduct on the distribution and use of pesticides* (1986). *Guidelines to classification* continued to be reviewed every two years in collaboration with commercial companies; the last issue of the decade was published in 1986.

Malaria

Following a dramatic resurgence, particularly in South-East Asia and Turkey, malaria began to show a downward trend at the beginning of the decade. The general epidemiological situation was still cause for concern, however, especially as many of the technical, financial, and administrative problems that led to the resurgence were far from resolved.

In response to what had become a stagnating situation, an action programme was established in 1979 as a cooperative effort involving Member States affected or threatened by malaria, WHO and international and bilateral agencies. Commenting on this development to the 66th session of the Executive Board in 1980, the Director-General reported that a separate programme had been established “to give visibility to the concern of Member States regarding malaria”, adding that the programme “did not prevent any region or country from undertaking an eradication programme if it was politically ready to do so”, but the Organization would not use the word ‘eradication’ for the sake of placating member States who wished to see such a programme led by WHO.

The global Malaria Advisory Committee, which was established in 1979, expressed the opinion at its 1980 meeting that most countries with malaria control or eradication programmes were so preoccupied with controlling epidemics and preventing further spread of the disease, scant attention was being paid to realistic planning based on malaria endemo-epidemicity levels and available manpower and financial resources. Representatives from UNICEF, USAID, the United States Public Health Service and WHO at a malaria coordination meeting in 1980 concluded that long-term malaria control should be an integral part of primary health care, since it required a high degree of coverage in space and time. In 1981, the advisory committee emphasized the need to maintain a nucleus of specialized persons to plan, supervise and evaluate antimalaria activities through horizontal services wherever those proved effective in securing the necessary coverage of the population at risk.

In order to stimulate implementation of the regional antimalaria programme, adopted by the WHO Regional Committee for Africa in 1977, the World Health Assembly requested that the Director-General establish a special task force to cooperate and collaborate with Member States in Africa to develop organized antimalaria activities. A regional malaria advisory panel was established in the Eastern Mediterranean Region; national experts met WHO regional and headquarters staff in countries of the Americas, South-East Asia, and the Western Pacific to advise on the development of regional programmes.

A study group on malaria control as part of primary health care met in Geneva in November 1983 to discuss planning, and the collective experience of countries in order to identify practical approaches. The group advised on how to link effectively malaria control activities with primary health care systems in varying situations (9).

A WHO expert committee on malaria met in Geneva in September 1985 to consider approaches to implementing antimalaria action within developing primary health care systems. It provided guidance to further develop the malaria control strategy and reorient programmes, taking into account the epidemiological situation, variability in the distribution and evolution of the malaria problem, and the available resources (10). This meeting was followed by regional technical consultations of experts in five WHO regions – the consultation in the Eastern Mediterranean Region included experts from the European Region – in order to develop lines of action applicable to the countries of the region.

The UNICEF/WHO Joint Committee on Health Policy, at its 24th session in February 1983, discussed malaria control in primary health care. Recognizing that malaria continued to be a major problem in many countries, with serious effects on the health of mothers and children, it called on UNICEF and WHO to strengthen their collaboration with developing countries to control malaria within primary health care programmes, and to support national and international control measures. In January 1985, the Joint Committee issued basic principles for malaria control and general guidelines for UNICEF/WHO support (11). Priority was given to preventing mortality by means of chemotherapy and chemoprophylaxis. Only when this capability had been developed should attention be given to spraying with insecticides, and even then, only “where the epidemiological situation, availability of resources and the programme objectives warrant it”. This radical shift of perspective marked the transition from eradication to control.

Another priority of the malaria action programme was to develop human resources by promoting and supporting training programmes. A permanent secretariat for coordinating malaria training programmes in Asia was developed as a result of cooperation between national training centres and WHO. Established in Kuala Lumpur with the collaboration also of USAID, it became operational in January 1982. After individual countries’ training needs and resources were assessed, a workshop on teaching methodologies and techniques for trainers of malaria workers was held at the secretariat’s headquarters in Malaysia, attracting participants from the South-East Asia, Eastern Mediterranean and Western Pacific Regions.

Other training activities included: a seminar in the Regional Office for the Americas in September 1982 to plan a regional programme to strengthen cooperation in training; the first of two four-month courses on malaria and tropical parasitic diseases for public health medical officers, held in 1982 and 1983 in collaboration with the Italian and Turkish governments in Rome, Palermo and Adana, and attended by participants from all six WHO regions; a workshop on malaria control planning held in Shanghai and Beijing from June–July 1982 in collaboration with the Chinese Ministry of Health and the Shanghai Institute of Parasitology; WHO collaboration in evaluating the UNEP/Soviet Union international training project on ecologically safe methods to control malaria and its vectors; and programmes tailored for the needs of visiting scientists, arranged on an individual basis.

An international course supported by the governments of Italy and Thailand was conducted in English in 1987. In 1986 and 1987, courses in French were held in Burkina Faso and in France. A course in French was also held in Burundi in 1986, with support from Belgium’s government and the Prince Leopold Institute in Antwerp.

The Kuala Lumpur secretariat developed training modules and bench aids – laminated plates used for the microscopic diagnosis of human malaria – that were disseminated to all malarious countries of the world. The first such module, *Bench aids for the diagnosis of malaria*, was in continuous high demand and produced in English, French and Spanish. Guidelines on managing severe and complicated malaria at the various levels of the primary health care system were updated following a WHO informal consultation on that subject in Kuala Lumpur in June 1985.

Specific problems, such as the resistance of parasites to antimalarial drugs and of the anopheline vectors to insecticides, continued to increase during the decade. Chloroquine-resistant *Plasmodium falciparum* malaria was confirmed in 41 countries, five in the African continent. Resistance to the sulfadoxine/pyrimethamine combination was reported in 11 countries. Resistance to more than one insecticide was found to be present in many

anopheline species, of which eight were considered major vectors affecting human populations in large areas.

In addition to the research being carried out under the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases – this included most of the studies for the development of new drugs and vaccines and applied field research – WHO supported studies leading to: formulations of chloroquine being developed for potential use in suppository form within the primary health care system; a cheap portable electronic battery-operated incubator for use in field conditions, particularly to monitor drug sensitivity; DNA probes for malaria diagnosis; *Plasmodium* infections in anophelines being identified and qualified. WHO also supported taxonomic studies of species complexes, and studies to improve technology for determining the sources of mosquito blood-meals. In collaboration with the Government of Mexico and the United States National Aeronautics and Space Administration, pilot trials of the epidemiological application of remote sensing were in progress at the end of the decade.

A WHO scientific group met in Washington, DC, in September 1984 to review parasite biology and identify problems in malaria control within a primary health care strategy that might be solved by further laboratory and field research. In collaboration with the Special Programme for Research and Training in Tropical Diseases, essential subjects were reviewed, including asexual blood stage and transmission-blocking antigens of plasmodia (12); antimalarial drug development; diagnostic technology; immunodiagnosis in malaria; malaria vector species complexes; and intraspecific variations and their relevance to malaria control. An inventory of field research was published (13), and a supplement to the *Bulletin of the World Health Organization* was devoted to applied field research in Africa (14).

Other parasitic diseases

In both tropical and subtropical countries, parasitic diseases remained serious public health problems, with a depressingly high prevalence of the major protozoal and helminthic infections. Their impact on the economies of developing countries was insufficiently appreciated. They were increasingly becoming recognized as complex syndromes, often not amenable to simple control measures because of their intimate association with human behaviour and the human environment. Many have complicated transmission cycles and some have animal reservoirs of infection. There were strong calls, therefore, for continuing efforts to control them and for increased research.

Schistosomiasis continued to spread in the 74 epidemic countries in tropical and subtropical zones in association with water resources development for agricultural, hydroelectric and domestic water needs. Consultant teams working on an interregional project reported on the health dangers in African man-made lakes and in major water resources development projects in South America and South-East Asia; comprehensive bibliographies of the risks associated with such projects were produced. An informal consultation on health protection in such projects was held in Geneva in 1981. It emphasized the need to establish a network of WHO collaborating centres to monitor data on epidemiological situations in large water resources development schemes causing serious public health problems; to increase manpower in developing countries by providing training for planners, engineers and technicians involved in implementing such schemes; and to prepare a manual on health protection in water resources development schemes.

There was continuing close collaboration between WHO and a pharmaceutical company in developing a new schistosomicide, praziquantel, which was effective orally against all three main species of schistosome infecting man. Multicentre clinical trials of this drug were coordinated jointly by WHO and the manufacturer. Long-term toxicity and carcinogenicity studies did not reveal untoward effects. Extensive field trials using this compound in many countries demonstrated that it could be used effectively within the primary health care systems of endemic countries. The large-scale Blue Nile health project in Sudan provided extensive operational experience with its use; schistosomiasis was prevented from being introduced into the Rahad zone (15).

Regional and interregional training courses for middle-level supervisory personnel on the methodology and techniques of schistosomiasis control were held in the Caribbean (jointly sponsored with the Danish International Development Agency), Egypt (jointly sponsored with UNEP and UNICEF), Gabon, Morocco, Tunisia and Zimbabwe. In parallel with these training efforts, a network of collaborating centres was developed. Three of the centres, two in China and one in the Republic of Korea, dealt with trematode infections. Teaching and training materials, including documentation on control strategy, diagnostic techniques, chemotherapy, primary health care approaches, and the role of molluscicides in schistosomiasis control, as well as illustrative material in a slide series, were prepared in Arabic, English and French.

A WHO expert committee on controlling schistosomiasis met in November 1984 and endorsed a global strategy of morbidity control that emphasized health education, community participation, simplified diagnosis, treatment with the safe oral antischistosomal drugs then available, providing uncontaminated water supplies and improved sanitation, environmental management, and snail control measures appropriate to the local epidemiological situation (16).

Infections due to intestinal parasites remained extremely common in many countries, and interest in their prevention and control increased substantially during the early 1980s. WHO elaborated strategies to diagnose, treat, prevent and control major intestinal parasites based on primary health care and in coordination with programmes on environmental health and diarrhoeal diseases control.

WHO's applied research programme in West Africa on *African trypanosomiasis*, initiated with UNDP funds, was transferred in 1978 to the Special Programme for Research and Training in Tropical Diseases, with additional funding from voluntary contributions. Special Programme-supported field research resulted in two important discoveries. First, domestic and wild animals in West Africa were found to carry trypanosomes identical to those found in infected humans, which explained the persistence of the disease in spite of meticulous surveillance and mass chemoprophylaxis with pentamidine. Secondly, tsetse flies could cover much longer distances than previously believed; several kilometres, in fact, the longest observed being 22km. This new information became an important consideration when assessing the risk of reinfestation after tsetse control campaigns.

WHO concentrated on better medical surveillance and treatment, mainly by developing and distributing simple kits for screening. With these kits, surveillance could be entrusted to remote rural health centres and polyvalent mobile teams. Wherever possible, improved medical surveillance was combined with measures to reduce contact between humans and the tsetse fly, again by simplified means suitable for community use, such as impregnated traps and insecticide spraying, using equipment available for agricultural purposes. Early success with these technologies led WHO to launch the primary health care approach to *African trypanosomiasis* control in 1983. The objectives of the programme were to introduce a new control strategy based

on simplified techniques for diagnostic screening of the population at risk, and to stimulate local vector control measures that were applied and maintained by the affected rural communities. Technical support was provided to Member States through visits by specialized staff wherever particular problems occurred. This service was funded by voluntary contributions from the Netherlands and Switzerland. By the end of the decade, there were 18 countries with national trypanosomiasis control programmes. A WHO expert committee provided guidance on choosing the most appropriate technology for controlling *African trypanosomiasis* (17).

A programme of in-service training in the endemic areas proved both effective and relatively cheap. The course benefited from a control manual for field staff and medical personnel in rural areas, prepared with the cooperation of African Medical and Research Foundation International (Nairobi). International training courses for health planners and senior staff were held in cooperation with the Food and Agriculture Organization of the United Nations, the Organization of African Unity and the Organization for Coordination and Control of Endemic Diseases in Central Africa.

Although using traps to reduce exposure to tsetse fly bites had been introduced on a small scale in Angola, Congo, Côte d'Ivoire, Equatorial Guinea and Zaire, the first large-scale application with 10 000 traps was organized at the end of the decade in Uganda as part of an emergency programme for controlling the epidemic in Busoga.

In the absence of any radical prophylaxis for Chagas disease (*American trypanosomiasis*), such as vaccination, and given the limitations of curative treatment, WHO concentrated on prevention by altering the basic conditions favouring transmission. Large-scale vector control programmes against Chagas disease in Argentina, Brazil and Venezuela, proved successful, but maintaining them made heavy demands on finances and personnel. New approaches, such as simple housing improvements, applying residual insecticides in paint, and fumigant cans containing insecticides, were introduced on a small scale. These approaches proved promising for use in primary health care and were ecologically acceptable.

The Organization provided support for coordinating and standardizing the technical criteria, methods and materials used in research and control. Research, largely through the Special Programme for Research and Training in Tropical Diseases, concentrated on preventing transmission by blood transfusion, developing new therapeutic drugs and exploring various epidemiological methods, including serological tests.

Considerable progress was made in standardizing techniques for serological diagnosis and biochemical parasite identification. International standardization, training and research benefited from collaboration with the Special Programme for Research and Training in Tropical Diseases. Research on new chemoprophylactic compounds to prevent the disease's transmission by blood transfusion resulted in a series of existing drugs with an *in vitro* trypanocidal activity being identified. Measures taken to prevent HIV infection, including improved blood screening, led to blood transfusion centres assuming a stronger role in the control of Chagas disease.

The public health importance of the *leishmaniases* was highlighted by outbreaks in India and Kenya in the early 1980s. At the time, control efforts were judged to be insufficient and hampered by diverse transmission situations, many requiring different control approaches. WHO continued to provide *ad hoc* technical support where needed. Although it was not possible to define a universal control strategy, a WHO expert committee met in 1982 to review the worldwide distribution of this group of diseases and provide guidelines to control a variety of typical transmission ecologies (18). Programmes for prevention by vector or animal reservoir control

were operating in only 20 of the more than 100 countries where transmission was known or suspected to occur.

Ongoing research, including activities under the Special Programme for Research and Training in Tropical Diseases, aimed to clarify the varying epidemiologies and develop new drugs and field diagnostics.

Progress in leishmaniasis control was achieved mainly through technical cooperation in national control programmes – this occurred in the Sudan, the Syrian Arab Republic and Tunisia – and through the UNDP-supported intercountry programme on the control of viscera leishmaniasis in Bangladesh, India and Nepal. At an informal consultation of experts in Geneva in November 1987, a synthesis of the control options for each WHO region was prepared, from which guidelines for control at regional and subregional levels were developed (19).

The difficulties in keeping the incidence rates of *lymphatic filariasis* low in many South-East Asian countries and Pacific islands through mass administration of diethylcarbamazine (DEC) were explored and maintenance strategies using primary health care approaches were developed. A research study group on *lymphatic filariasis* of the South-East Asia and Western Pacific Regions met in New Delhi in 1979 to review the epidemiological situation, identify research priorities and propose ways for existing institutions or programmes to conduct research.

The use of DEC at low dosage as a prophylactic was investigated. It was learnt that small doses of DEC, given weekly, monthly or yearly, achieved some success, and was sometimes extended, as occurred in China, French Polynesia, Indonesia and Samoa, to treating asymptomatic microfilariae carriers.

The fourth report of the WHO expert committee on filariasis emphasized the prevention of morbidity using the primary health care system to administer DEC; a WHO-supported study of the administering of DEC by village health workers to treat early filarial infections and prevent elephantiasis had provided encouraging results (20). WHO cooperated in trials of varied dosages of DEC in India, motivated in part by the unpleasant reactions to treatment experienced by infected persons. These trials aimed to help improve the ratio of adverse effects to the total number treated.

The 11th meeting of the scientific working group on filariasis, held in Geneva in March 1985, reviewed filaricide screening methods and results, and the potential antifilarials under investigation. Pathology and immunopathology of filariasis were discussed at the 12th meeting, held in Thanjavur, India, in September 1985.

The problem of *onchocerciasis* continued to predominate in Africa. Although transmission of the disease could be controlled by continuous use of larvicides against *Simulium*, treating infected persons at high risk of blindness remained extremely difficult. Chemotherapy trials were organized in several countries, and assistance was given to Liberia, Nigeria and Sudan to try to control the disease.

The onchocerciasis control programme in the Volta Basin, initiated in 1975, continued. By the end of the decade, operations involved 11 countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Guinea-Bissau, Mali, Niger, Senegal, Sierra Leone and Togo), and covered an area of 1.3 million km² and 50 000 km of river. Encouraging results were recorded, with the vector *Simulium damnosum* successfully controlled and transmission of the parasite *Onchocerca volvulus* drastically curtailed. The vector continued to be controlled by spraying insecticide from up to eight helicopters and two fixed-wing aircraft.

The socioeconomic development of the Basin was the responsibility of each participating government, each country having presented its progress report to the 1979 meeting of the

programme coordinating committee. A programme of training and research was introduced by WHO to obtain a better understanding of the socioeconomic effects and implications of onchocerciasis control. This programme also developed national expertise for undertaking such studies.

Funding for the second financial phase of the programme covering 1980–1985 was pledged during two meetings convened by the World Bank in 1979, the estimated cost of this phase being US\$ 106 million. New donors were Switzerland and the OPEC Special Fund; in addition, participating governments agreed to increase significantly their monetary contributions to the programme.

Despite growing resistance to the principal insecticide temephos in the forest species of the *Simulium damnosum* complex, control of the vector flies proved successful. Interrupting transmission through vector control resulted in a significant epidemiological change. Statistical analysis of the data collected in the surveys revealed an accelerated reduction in the prevalence and incidence of onchocerciasis in the populations that had been protected since 1975. The indications were that prevalence should fall to zero about 12 years after the start of operations in any one area. This confirmed research findings on the length of the adult worm's life, which appeared to be about 10–12 years, considerably shorter than the 15–18 years originally supposed.

The success of the programme was also reflected in the socioeconomic development of the area, throughout which river valleys were resettled, new land cultivated and agro-industries established.

Towards the end of the decade, operational trials with ivermectin took place in the programme area to test the use of this microfilaricide on a community basis, to obtain more information on its side-effects and to determine its effectiveness in controlling transmission.

In connection with the International Drinking Water Supply and Sanitation Decade (see Chapter 13), WHO collaborated with agencies to reduce or eliminate guinea-worm infection (dracunculiasis), especially in West Africa, by providing safe drinking-water. Consultants were sent to several affected countries in Africa, and technical cooperation continued with the guinea-worm campaign in India. Research produced durable and cheap monofilament nylon gauze filters that could remove the disease-transmitting cyclops from contaminated drinking-water.

In May 1986, the Thirty-ninth World Health Assembly (resolution 39.21) called for increased efforts to seek support for intensified activities. Participants from the majority of African countries where dracunculiasis was endemic attended a regional workshop in Niamey, Niger, in July 1986, the first of its kind. WHO cooperated with Member States in drafting plans of action for effective control activities, and with nongovernmental organizations to stimulate such activities. The Division of Parasitic Diseases at the Centers for Disease Control in Atlanta, USA, was designated a WHO collaborating centre.

Special Programme for Research and Training in Tropical Diseases (TDR)

Although the Special Programme was announced in a circular issued on 7 January 1975, only in 1977 was it agreed that it had a sound technical foundation and could begin large-scale operations with the US\$ 11.5 million made available for that year. WHO's contribution of about US\$ 1 million per year was agreed upon. A special account was established as a sub-account

of the Voluntary Fund for Health Promotion. The World Bank joined UNDP as a cosponsor of the programme.

It was decided that the programme would concentrate on six diseases: malaria, schistosomiasis, filariasis (including onchocerciasis), trypanosomiasis (African sleeping sickness and the American form, Chagas disease), leishmaniasis, and leprosy. The six diseases selected were seen to hold together as a group for research purposes; advances in one might open approaches for another. Developing a vaccine for leprosy, for example, could point the way to vaccines against the others. Leishmaniasis, although less significant numerically as a disease, was included, as the parasite was readily handled in the laboratory and there were exceptional opportunities to study the relationship between this parasite and certain cells of the body. This type of research could lead to better drugs, not only for leishmaniasis, but also for leprosy, trypanosomiasis and malaria, which share the same body cells.

The Special Programme for Research and Training in Tropical Diseases was established as a goal-oriented research and training programme with two interdependent objectives: to obtain new tools and improve existing ones to control major tropical diseases, through research and development; and to strengthen the research capabilities of the tropical countries. Scientific working groups were organized to formulate and guide activities for each disease. Such groups were also established for epidemiology, the biological control of vectors, basic biomedical sciences, and social and economic research. A research strengthening group also was established, and a special effort made to involve scientists and institutions in developing countries in research planning and execution.

The first stage of the Special Programme was dominated by research planning. The second stage focused on implementing plans. The programme entered the third stage, of developing usable products and technologies, during the mid-1980s, at which point four main types of tools were being targeted for development: drugs; vaccines; highly specific, sensitive diagnostic methods; and new vector control techniques.

To enhance local biomedical and health resources, the Special Programme strengthened the infrastructure of selected national institutions and trained key personnel as part of national health development plans and existing programmes of research and disease control. Formal training courses were supported by a programme for Master of science degrees in medical entomology, epidemiology and malacology, and short courses and workshops were organized to promote the rapid transfer of technology to developing countries.

The rapid growth already in evidence by the end of the 1978–1979 biennium – 602 grants were awarded for research projects and 202 for training and to strengthen institutions in a total of 66 countries – continued throughout the decade. By the end of the decade, more than 4000 scientists in 132 countries were involved in the programme.

Scientific contributions by participating institutions included:

- Institutions in Brazil, Thailand and Zambia conducted 18 clinical trials of the antimalarial drug mefloquine; these trials provided the bulk of the clinical information required to register the drug.
- In collaboration with the Liverpool School of Tropical Medicine in the United Kingdom, the Onchocerciasis Chemotherapy Research Centre in Tamale, Ghana, made significant contributions to developing new drugs to treat onchocerciasis.
- The Clinical Research Centre in Nairobi, Kenya, produced evidence that led to the revision of traditional drug regimens using pentavalent antimonials to treat visceral leishmaniasis.

- The Malaria Eradication Service in Manila, in collaboration with the WHO Regional Office for the Western Pacific and the Special Programme, produced micro field kits to test the sensitivity of *Plasmodium falciparum* to 4-aminoquinolines and mefloquine.

In other developments, a social sciences and tropical diseases network was established in Latin America. Through this network, the first of its kind, investigators, supported by the Ottawa-based International Development Research Centre, the Organization and other agencies, were able to share research findings, compare research methods and develop collaborative activities.

During 1986 and 1987, a major evaluation of the Special Programme's activities to strengthen research capability focussed on the 17 institutions whose long-term support grants had ended (21). It was found that where institution-strengthening had been successful, it was associated with a strong national and institutional commitment to research, links to leading research centres in the developed world, integrating the institution's programme within national health priorities, and WHO's involvement in implementing plans for strengthening research capability. Not all the institutions had reached scientific maturity during the five-year grant period, but restructuring to provide closer coordination with the Special Programme was expected to lead to their receiving greater scientific and financial support.

Diarrhoeal diseases

A high priority was accorded by the Thirty-first World Health Assembly (resolution WHA31.44) to developing an expanded programme to control acute diarrhoeal diseases, which were a major public health problem in children of the developing world. A global technical advisory group was established and met in May 1978. After the group reviewed the extent of the problem and recent advances in knowledge, it helped formulate strategies for immediate implementation and to identify areas for further research. Meetings and consultations took place in the six regions to begin formulating national and regional programmes.

The programme objectives were to: reduce mortality from acute diarrhoeal diseases; reduce morbidity from acute diarrhoeal diseases and the associated ill effects, particularly malnutrition, in infants and young children; and promote country self-reliance in health and other social services in controlling diarrhoeal diseases. By the end of the decade, 112 countries had formulated plans of actions, 96 of which had operational programmes. Notably, in the African Region, 39 countries had formulated plans of operation, 33 of which had initiated programme activities.

Oral rehydration supported by dietetic management formed the basis of treatment. Good maternal and child health practices, particularly breastfeeding, appropriate weaning foods, and good personal and domestic hygiene, were also emphasized, along with improved environmental health practices, notably the maintenance and proper use of safe water and sanitation facilities, and improved surveillance and epidemic-control measures.

At the UNICEF/WHO Joint Committee on Health Policy meeting in January 1979, UNICEF pledged full support for national programmes at the country level as an integral component of primary health care. UNICEF collaborated with the programme by providing oral rehydration salts and supporting local production of such salts. By the end of the decade, 55 developing countries worldwide were producing oral rehydration salts. Local production accounted for 65% or more of global production, which in 1987 was estimated to be about 300 million litre-equivalents.

Two additional advisory bodies were created: a Management Review Committee, responsible for the overall management of the programme, comprised representatives of UNDP, UNICEF, the World Bank, three governments in a two-year rotation, and WHO; and the Meeting of Interested Parties, which considered the deliberations of the Joint Committee and the Review Committee, and was attended by representatives of contributing agencies and governments and six developing countries.

Training materials were developed for national health workers (22), including those attending a senior management course for national diarrhoeal diseases control programmes. During the 1980–1981 biennium, this course was given on four occasions to a total of 124 senior staff from 45 countries. A mid-level management course was started in 1981 using the same teaching methodology, which involved trainees working through a series of modules based on a hypothetical country, the same that was being used by the Expanded Programme on Immunization (EPI) in order to encourage the linkage of these key primary health care programmes at country level. Further technical courses were held, especially in the field of clinical management.

To help implement national technical training activities, an institution-strengthening project was launched in three regions with the support of UNDP. In this project, the International Centre for Diarrhoeal Disease Research, Bangladesh, played a major role by providing the initial training for national trainers. Guidelines for trainers were published (23) along with a new set of guidelines for organizing and conducting clinical management courses at national units, of which 35 had been established by the end of 1985.

The *Diarrhoeal training unit director's guide* (24), completed in 1986, provided countries with guidelines for establishing training units in appropriate institutions, usually large hospitals with a significant number of cases of paediatric diarrhoea and staff trained in oral rehydration therapy.

Communication support was initiated with a workshop, attended by 21 participants from 10 countries, at the Latin American Center for Educational Technology in Health in Rio de Janeiro from November to December in 1982; the preparation of a catalogue containing examples of health education material produced by different countries; and support to 43 countries to produce and promote educational material. A manual, *Communication – a guide for managers of national control of diarrhoeal diseases programmes*, emphasized consumer-oriented approaches to improving case management (25).

Research was supported by UNDP and the World Bank, and global scientific working groups were set up to review knowledge and set research priorities for immunology and vaccine development (26), epidemiology, clinical management, child care, and environmental health. Regional study groups were established to identify regional research priorities and research workers and institutions. A management scheme to execute the research programme was also developed.

Three scientific working groups were formed to guide biomedical research in: (i) bacterial enteric infections (microbiology, epidemiology, immunology, and vaccine development); (ii) viral diarrhoeas (microbiology, epidemiology, immunology, and vaccine development); and (iii) drug development and the management of acute diarrhoeas. Projects supported included the field-testing of a new live oral typhoid vaccine (strain Ty21a); a field trial of a new oral cholera vaccine composed of whole cells and the B-subunit of cholera toxin; and studies to develop antisecretory agents for diarrhoea.

Regional scientific working groups (or analogous groups) were established in the Americas, South-East Asia, Europe, the Eastern Mediterranean, and the Western Pacific. Projects

supported included studies on the etiology of diarrhoea in several different areas; the efficacy, safety, acceptability and cost-effectiveness of oral rehydration salts or modified preparations (including 'local' products); and nutrition and feeding practices as they related to diarrhoea.

Later in the decade, a scientific working group on epidemiology and disease prevention was established. It focused primarily on studying the effect of interventions considered to have the greatest potential for preventing diarrhoea and reducing its severity (particularly the promotion of breastfeeding, improved weaning practices, improved personal and domestic hygiene, and vitamin A supplementation), and on the most cost-effective means to deliver the interventions selected. In addition, it supported case-control studies to determine risk factors for severe diarrhoea, including acute dehydrating forms of diarrhoea, shigellosis, and persistent diarrhoea. Guidelines were developed for carrying out these studies and also cross-sectional studies to determine the risk of diarrhoea-associated dehydration.

The scientific working groups also supported a variety of research training and research strengthening activities. During 1986 and 1987, for example, these included protocol-development workshops, and strengthening clinical trial centres in Burma, Egypt and Peru, and the Faculty of Tropical Medicine, Mahidol University, Bangkok, as a centre for the trial of vaccines against infectious diseases.

Acute respiratory infections

It was estimated that 2.2 million deaths occurred globally each year from acute respiratory infections (ARI), mostly pneumonias. For the child population alone, respiratory infections accounted for up to 26% of the mortality (27). A programme launched in 1978 aimed to develop a simplified technology to clinically manage and prevent such infections, and to find ways to apply it as a component of primary health care (28).

Technical and financial support was given to studies into the type, relative frequency, and distribution of acute respiratory diseases, as well as to developing simple (and standardized) decision trees for diagnosis and treatment. A strategy was formulated to enable countries to manage schemes in a manner appropriate to the existing health infrastructure, with maternal and child health services administering such schemes as part of primary health care at village level. Programme development along these lines was begun in the United Republic of Tanzania, with the support of the Government of the Federal Republic of Germany. Studies in other countries (Algeria, Brazil, China, Kenya, Malaysia, Mexico, Papua New Guinea, the Philippines, Thailand, Upper Volta and Venezuela) soon followed.

A WHO scientific group on acute viral respiratory diseases, meeting in 1979, recommended that the activities of national influenza centres be extended to include other respiratory diseases (29). The way such centres would monitor the clinical management of acute respiratory cases in the community was the subject of a separate meeting. By the end of 1979, a programme was launched to apply virus and bacterial diagnosis when evaluating and managing schemes of acute respiratory disease in primary health care.

To reduce the massive mortality from ARI that occurred in children under five years of age in developing countries, improving clinical management by primary health care workers seemed to be the strategy of choice. An information consultation on clinical management of acute respiratory infections in children, held in Geneva in 1980, found that although the scientific basis for management was inadequate, it was still possible to devise effective management

plans on the basis of existing empirical knowledge. Such plans depended heavily on antibiotics being widely administered, supported as early as possible by knowing the nature of the prevailing pathogens, their sensitivity to antibiotics, and the cost-effectiveness of various management regimens, and also by evaluating the results as a whole.

The newly appointed technical advisory group on acute respiratory infections, at its first meeting in Geneva in March 1983, concluded that there was already sufficient knowledge and technology for countries to initiate phased programmes to control these diseases (30). Interventions outlined included: appropriate case-management within primary health care, including early discrimination between mild and severe infections by families and by primary health care workers; supportive measures; antimicrobial treatment; defined criteria for referring cases to a higher health-care level; health education of families, and community involvement in child-care practices for these infections; and immunization against measles, diphtheria, pertussis and childhood tuberculosis, which already formed part of the Expanded Programme on Immunization.

Acute respiratory infections were recognized as a priority problem in UNICEF's global strategy on child survival. A joint UNICEF/WHO statement on basic principles for controlling these infections in children in developing countries was approved at the 25th session of the UNICEF/WHO Joint Committee on Health Policy in January 1985. The statement described the acute respiratory infections programme within the context of primary health care and emphasized the role of the community.

The second meeting of the WHO technical advisory group, in March 1985, reaffirmed the need to develop, simultaneously, the service and research components of the programme as a national responsibility, and recommended increased community involvement in the programme (31). In most developing countries, however, the lack of resources, both financial and managerial, was proving an obstacle. International cooperation would be most beneficial, therefore, if directed at the outset towards setting up the facilities needed to overcome these obstacles when developing and implementing the programme.

During the early stages of this programme, epidemiological and operational research, based on studies in a few countries, was emphasized. To ensure uniformity in approach and methodology, three meetings were held in 1981: one informal consultation and two joint meetings with members of the committee on respiratory disease of the International Union Against Tuberculosis (IUAT). These consultations established that research should aim to provide a clinical description of acute respiratory infections, a detailed microbiological description, and a basic description of morbidity and mortality. Operational research should include controlled trials of preventive and curative measures (in particular, antibiotic therapy in relation to the compound, its dosage, and its duration); evaluating clinical management; and, if possible, developing management norms and standardized procedures for use at the primary health care level.

A design for health systems research to assess the feasibility and impact on mortality of specific interventions at the community level was formulated by a working group on operational research in acute respiratory infections that met in Geneva in June 1982. Taking the same approach, projects were started in selected areas of six countries (India, Kenya, Pakistan, Panama, Somalia and Sri Lanka), with financial assistance from the Arab Gulf Program for Development, and the Swedish International Development Agency and the Department for Research Cooperation. A prototype control programme was implemented in Pará, Brazil. The results of these projects provided information on the standardized case-management

approaches in different national situations, which were incorporated into the design of the control programmes and training modules discussed above.

These research activities provided encouraging results. The Tanzanian project, for example, showed that one year after implementing intervention strategies, a 19.5% overall reduction of mortality in children under five years of age was observed by comparison with a control area, the decrease in mortality from pneumonia accounting for 35% of this reduction. Other projects showed, however, that the managerial implications of asking primary health care workers to administer antimicrobial drugs might constitute a major obstacle to implementing the programme, and alternative strategies might be required.

Under a contractual agreement with WHO, the United States Centers for Disease Control in Atlanta developed training modules for acute respiratory infections. The first phase of the project, completed in 1983, comprised an analysis of programme goals and strategies, specifying tasks to be performed at various health-care levels, and defining training needs at primary health care and supervisory levels.

Training modules for middle-level supervisors were developed and field-tested in combined training courses held in three countries in 1985. These were followed by modules on 'the management of the child with cough' and on 'the management of the child with ear, nose and throat infection'. Both could be integrated with similar modules for training in diarrhoeal diseases control and immunization. A booklet on treating acute respiratory infections in children helped guide doctors at small health centres and district hospitals on the most appropriate care (32). An operational manual, *Acute respiratory infection: a guide for the planning, implementation and evaluation of control programmes within primary health care* – was designed to assist Member States develop national control programmes for children aged under five within their national health plans (33). Audio-visual materials were produced as adjuncts to the training modules and to help teach health workers how to use a simple protocol for case management. These materials included a set of 24 slides and an audio cassette on cough in children, produced in cooperation with Teaching Aids at Low Cost (Institute of Child Health, London); a video shot in collaboration with the Royal Children's Hospital, Melbourne; a poster showing the danger signs in acute respiratory infections; and a flip-chart of 21 drawings, with corresponding legends, illustrating treatment of the common respiratory infections in children.

A consultation in Geneva in November 1982 outlined the structure and methodology for a surveillance system on a national, regional and global scale, defining both the bacteria and the antibiotics to be kept under surveillance. In 1983, an international surveillance system was initiated, with developed and developing countries participating, and two laboratories, in London and Boston, collaborating. Global surveillance systems to monitor the resistance to drugs of *Streptococcus pneumoniae* and *Haemophilus influenza*, the most common bacterial agents of lung infections in children, were coordinated respectively by the State Serum Institute in Copenhagen, and the Public Health Laboratory Service at John Radcliffe Hospital in Oxford, the United Kingdom.

The quarterly newsletter *ARI News* was the main vehicle for disseminating information globally on national control activities. It first appeared in April 1985 and was published in English, French and Spanish in collaboration with the Appropriate Health Resources and Technologies Action Group (United Kingdom), the Swedish International Development Authority and the Swedish Agency for Research Cooperation with Developing Countries, the Pan American Health Education Fund and the International Union Against Tuberculosis, which in 1986 became the International Union against Tuberculosis and Lung Disease

(IUATLD). In 1987, an information dossier for the public was issued in English and French, consisting of articles, charts, tables and photographs depicting the problems of acute respiratory infection and describing control activities.

Tuberculosis

WHO cooperated with 18 Member States in programme planning or evaluation; with five Member States in research and surveillance; and with nine Member States in designing or analysing surveys, in bacille Calmette-Guérin vaccine or chemotherapeutical studies, and in operational research. Epidemiological services were provided by the WHO collaborating centres in Santa Fe, Argentina, and Tokyo, and the International Tuberculosis Centre in The Hague. Laboratories in Canada, Czechoslovakia, India, Indonesia and Japan cooperated with national bacteriology laboratories by providing quality control and training. Laboratories in Algeria, Argentina and Mauritania cooperated in the global surveillance of drug resistance.

A contribution from the Arab Gulf Program for Development was used to strengthen programmes in Colombia, Ethiopia, Pakistan and Somalia, and a contribution from the Swedish International Development Agency was used for Angola and India. The programmes in Nicaragua and Peru were supported in cooperation with the International Union Against Tuberculosis (IUAT), and those in the Andean countries under the Hipólito Unanue Agreement.

A textbook on tuberculosis case-finding and chemotherapy, in the form of questions and answers, was published as a commentary to the ninth report of a WHO expert committee on tuberculosis (34). A manual on norms and procedures for integrated tuberculosis programmes in Latin American countries was published in Spanish by the Pan American Health Organization (PAHO). The International Union's *Technical guide to sputum examination for tuberculosis by direct microscopy*, and a PAHO/WHO teaching aid on the same subject were distributed worldwide through the regional offices.

Training courses were organized at the international, regional and national levels. WHO regional tuberculosis teams visited countries and areas to evaluate programmes and help train health workers, while consultant services were provided to countries in several regions.

In 1982, to mark the centenary of Robert Koch's discovery of the tubercle bacillus, WHO and the IUAT launched a joint information programme on the theme 'Defeat TB – now and forever' to draw the attention of governments, health workers and the general public to the gravity of tuberculosis infection around the world. Audio tapes, films, articles and posters were prepared for the media, and the January 1982 issue of *World Health* was devoted to the theme. An article on immunity in tuberculosis in the *Bulletin of the World Health Organization* was dedicated to Robert Koch (35).

A WHO consultation on tuberculosis control as an integral part of primary health care, held in Geneva in September 1986, noted that in having to compete with vertical programmes – these were emerging in response to the interests of donors rather than the actual needs of the community – tuberculosis control had suffered particularly; many national programmes had survived only because of their integration with the general health services.

The interactions between HIV and mycobacterial infection, which had become apparent from the high incidence of diseases caused by mycobacteria observed in AIDS patients, led to meetings of technical advisers to the WHO Global Program on AIDS and WHO Tuberculosis Programme being scheduled for early 1988 (36).

To examine the unexpected result of the latest controlled trial of bacille Calmette-Guérin vaccination (37) – that is, a total lack of protection – the Indian Council of Medical Research and WHO convened a scientific group in 1980 (38), which deemed the reported results valid *per se* but not to be regarded as applying automatically to other parts of the world. To consider the implications of the trial results for tuberculosis control programmes, a study group was also convened by WHO in 1980 (39). The group considered that bacille Calmette-Guérin vaccination, especially of young children, should be continued, but that the effectiveness of such vaccination should be evaluated forthwith. A comprehensive programme was accordingly formulated, with the support of UNICEF and from designated contributions to the Voluntary Fund for Health Promotion.

The first meeting of the South-East Asia Region research study group on tuberculosis, held in New Delhi in March 1981, reviewed ongoing studies and reconsidered research priorities. The group identified the following priorities: operational studies on case-finding and chemotherapy and their integration into the primary health care system; epidemiological studies on risk-of-infection trends; studies on diagnosing childhood and extrapulmonary tuberculosis; and studies on the efficacy of bacille Calmette-Guérin vaccination in preventing tuberculosis in young children.

One study, in Bangkok, found that among child contacts, as many as 25% of non-vaccinated children showed X-ray shadows suggestive of tuberculosis; among vaccinated children there was only half this incidence. The results of 10 case-control studies on the effectiveness of bacille Calmette-Guérin vaccination of the newborn showed varying levels of protection, from almost nil to 90%. In seven of the studies, the observed protection was statistically significant. Protection against tuberculosis meningitis and other disseminated forms was invariably higher than against all forms combined. Four contact studies showed varied protection against all forms of tuberculosis, from 50–70%.

Given the difficulty of making sure patients take the prescribed drugs regularly for a period of a year or more, efforts were made to shorten the period of chemotherapy by introducing new regimens. As a result of controlled studies, several highly effective six-month regimens were developed. Also, a plan of action for research on the newly available drugs was formulated with the participation of WHO collaborating centres in the United Kingdom. *In vitro* studies on new chemotherapeutic substances commenced at three institutions, and with the support from the Finnish Anti-tuberculosis Association, the Swedish International Development Agency and the Department for Research Cooperation, arrangements were made for field trials in developing countries.

A meeting of experts in Boston, USA, in February 1983, in collaboration with the Harvard School of Public Health, advised on research in immunology. A comprehensive programme was formulated and initiated with resources made available by Norway through the Voluntary Fund for Health Promotion.

A meeting on research in the epidemiology and control of tuberculosis, held in Geneva in November 1982, made plans to investigate the transmission of infection, notably by utilizing the unexplored database available at the Tuberculosis Research Centre in Madras. Prospective studies on the epidemiology of tuberculosis in developing countries were also planned. These were to be carried out in conjunction with health services research in primary health care.

In a global survey of drug resistance, preliminary results (reported during the 1986–1987 biennium) from South America showed a 6% resistance to streptomycin, a 3% resistance to

isoniazid and a 3% resistance to a combination of these drugs. All strains were susceptible to rifampicin and ethambutol, and 99.5% of strains to thioacetazone.

Leprosy

Surveys conducted in the early years of the decade demonstrated the growing resistance of *Mycobacterium leprae* to dapsone. Cases of primary resistance to dapsone were demonstrated in Ethiopia, India, Malaysia, Mali, the Philippines, and the United States of America. Dapsone was also found to have another significant shortcoming: ceasing dapsone treatment in patients with lepromatous leprosy carried a great risk of relapse with dapsone-sensitive organisms, even when the treatment was administered with reasonable regularity for more than 10 years.

To prevent secondary dapsone resistance emerging, it was agreed that multidrug regimens should be used to treat lepromatous and borderline cases, as the WHO expert committee had already recommended in 1976 (40). Few countries, however, had established a method of combined drug treatment that was both systematic and applicable on a national scale. It seemed the requirement of daily supervised therapy with rifampicin for a few weeks had met with insuperable difficulties. New evidence, however, showed that rifampicin was effective even when administered in intermittent, monthly doses. In view of this, a study group convened by WHO in Geneva in October 1981 issued recommendations on chemotherapeutic regimens that were believed to be both effective and practicable under field conditions.

Collaboration between UNICEF and WHO was reviewed by an intersecretariat meeting held in Geneva in 1980, and again by the UNICEF/WHO Joint Committee on Health Policy in 1981. At the latter meeting, the importance of addressing leprosy in children was stressed and specific problems were reviewed, including training personnel involved in leprosy control.

At an International Leprosy Association/WHO meeting held in Copenhagen in 1981, a framework of cooperation was developed focusing on leprosy tuition in medical schools, the integration of leprosy into primary health care, and cooperation with national leprosy agencies. The International Federation of Anti-Leprosy Associations coordinated the activities of more than 24 voluntary agencies in 16 countries and provided financial support for several WHO-assisted leprosy projects.

An updated edition of *A guide to leprosy control* was published in 1980, incorporating the latest knowledge of the disease and paying special attention to project formulation. Guidelines for leprosy control planning, including a model plan of action, had already been published (41). A standard information system for leprosy control was designed in collaboration with the University of Louvain in Belgium, based on the analysis of forms and records used by 78 leprosy control services. The system was tested in 16 leprosy control projects.

Special efforts were made to promote multidrug therapy through support for global, regional, subregional and national workshops and seminars, by funding feasibility studies, and mobilizing external funds to supplement national budgetary resources whenever required. At a WHO meeting held in New Delhi in August 1982 on plans for leprosy control, recommendations on using multidrug therapy and mobilizing additional resources were drawn up by representatives of UNICEF, the Swedish International Development Agency, the Japan Shipbuilding Industry Foundation, the International Federation of Anti-Leprosy Associations (ILEP), the International Leprosy Association, officers from five WHO regional offices, and other leprosy experts. ILEP member associations decided to give priority to the WHO-recommended

multidrug therapy in all projects receiving their direct financial support (covering a total of about 1.2 million patients). The Damien Foundation in Belgium established a drug fund with an initial endowment of US\$ 400 000 to support projects receiving WHO technical approval.

To help train staff in the more complex use of the new drugs to be administered, guidelines were drawn up for implementing multidrug therapy. A document defining training for each category of health personnel in accordance with their respective responsibilities in leprosy control was also prepared. The modern approach to teaching and learning by objectives was the subject of a workshop on training health personnel in leprosy control, conducted in November and December 1982 by the All Africa Leprosy and Rehabilitation Training Centre in Addis Ababa, in collaboration with the American Leprosy Missions (USA) and WHO.

Immunodiagnostic techniques developed during the 1984–1985 biennium, such as the enzyme-linked immunosorbent assay (ELISA), based on the *Mycobacterium leprae*-specific phenolic glycolipid, were judged to have considerable potential for use as indicators of subclinical leprosy infections (42). Field trials for the early detection of leprosy patients were carried out in various leprosy-endemic countries, including Brazil, India, Malawi and Thailand, during 1984, with encouraging results. An improved version of the prototype was finalized and trialled in Ethiopia and India.

Extrabudgetary funds – in particular, those provided by the Japan Shipbuilding Industry Foundation – enabled leprosy-control activities to be extended, especially multidrug therapy. The second WHO coordinating meeting on implementing multidrug therapy in leprosy control programmes was held in Geneva in November 1986. It identified the optimal approaches for strengthening coordination and cooperation between WHO, governments and funding agencies to accelerate moves to multidrug therapy.

Disabilities continued to be the most important consideration for leprosy, and accounted for the public health importance of the disease. Specific measures were required for disability prevention within leprosy control programmes, and WHO accordingly convened a consultation on the subject in Geneva in March 1987 (43). No reliable information was available on the number of disabled leprosy patients, but it was estimated that more than one third of all patients were threatened by progressive and permanent disabilities. Community-based rehabilitation was seen as an approach that should make prevention activities within leprosy control programmes less expensive and more accessible.

In May 1987, the Fortieth World Health Assembly adopted resolution WHA40.35, acknowledging the increasing commitment of several Member States to eliminating leprosy as a public health problem, and noting the significant progress both in leprosy treatment, including the use of new drugs, and in developing immunodiagnostic tests and vaccines. Subsequently, in November 1987, the sixth WHO expert committee on leprosy evaluated the progress made during the past decade and recommended methods and future approaches for leprosy control and research (44).

The expert committee reconfirmed the high priority given by WHO to multidrug therapy since 1981, although the cost of drugs and the inadequacy of health infrastructure in most leprosy-endemic countries were still major impediments to implementing it. It was estimated that 1.8 million people had benefited or were benefiting from multidrug therapy. According to reported data, in 1987 there were almost 5.1 million registered cases, of which 25.9%, in 95 countries, were receiving such therapy.

Zoonoses

The priority zoonoses in WHO's programme were rabies, echinococcosis, leptospirosis, and major foodborne diseases related to animals and animal products, such as salmonellosis and brucellosis.

A WHO expert committee on parasitic zoonoses, which met in Geneva in 1978 with the participation of the Food and Agriculture Organization of the United Nations (FAO), reviewed the socioeconomic aspects and factors influencing their prevalence, and recommended measures for surveillance, prevention, control and elimination (45). The committee dealt in detail with toxoplasmosis, echinococcosis, cysticercosis, schistosomiasis, trichinellosis and larva migrans. A WHO informal consultation on mycotic zoonoses that met in Tel Aviv in 1979 discussed their prevalence and surveillance, prevention and control. There was also an expert consultation in Warsaw in 1978 on the surveillance, prevention and control of cysticercosis/taeniasis and echinococcosis/hydatidosis.

Instruction in zoonoses and foodborne diseases at undergraduate and postgraduate level was reviewed at a WHO interregional seminar held in New Delhi in 1978 on manpower development in veterinary public health. Seminar participants recommended medical and veterinary curricula be substantially strengthened. The same recommendation was made at the fourth meeting of the FAO/WHO expert consultation on veterinary education, held in Uppsala, Sweden, in 1978. During the 1982–1983 biennium, WHO reviewed the undergraduate and postgraduate teaching of veterinary public health in schools of veterinary medicine, and recommended ways and means to substantially strengthen its presentation. Four international training centres in Europe – in West Berlin, Guildford (United Kingdom), Lille (France), and Zeist (Netherlands) – coordinated their postgraduate courses in food microbiology for students from developing countries.

Under the zoonoses management project of the USSR Commission for the United Nations Environment Programme, a three-month international course on zoonoses was organized, and a two-volume book, containing information on the surveillance, prevention and control of specific zoonoses (46), was published. WHO closely collaborated in the project and provided lecturers for the course.

In 1982 and 1983, the WHO collaborating centre in Maisons-Alfort, France, organized courses on laboratory techniques in comparative immunology. Courses were also held in programme planning and management (Athens); dog ecology and control (Nicosia); diagnosis of Rift Valley Fever (Athens); and brucellosis surveillance and control (Lisbon).

WHO started collaborating in 1985 with the FAO and the World Veterinary Association to develop educational schemes to provide long-term training for staff throughout their professional lives. In all regions, conferences and training courses were devoted to rabies, brucellosis and foodborne diseases of animal origin.

At the request of Member States, 13 technical guidelines on surveillance, prevention and control of zoonoses and foodborne diseases of animal origin were issued for the intended use of national programme managers.

A WHO expert committee on rabies met in Geneva in September 1983 to review WHO's activities to control human and canine rabies, and to discuss improving both international surveillance and the safety and efficacy of wildlife rabies control (e.g. through oral immunization of foxes), along with the use of new technologies in developing better and cheaper vaccines for man and animals. The expert committee noted that although wildlife rabies did not spread

at the same pace as canine rabies, an extension of the reservoir in raccoons had been reported from the USA.

Research coordination between WHO collaborating centres resulted in a scheme for the differentiation of rabies virus strains by monoclonal antibody, facilitating the study of epidemiological patterns. This became a prerequisite for using attenuated oral rabies vaccine in nature. The principles and economic aspects of transferring technology for producing rabies vaccine were considered by a WHO consultation in Geneva in October 1984. Despite the decreasing cost of human post-exposure treatment with highly potent and safe vaccines, there was no change in the thrust of WHO's strategy to prevent and eliminate the disease in dogs.

A project to control human and canine rabies in Ecuador, Sri Lanka and Tunisia, involving the Arab Gulf Program for Development, the Swedish Save the Children Fund and WHO, ended in November 1987. In the three years it operated, there was a significant decrease in the number of cases of human and canine rabies in each of the pilot zones. The strategies developed were judged adaptable and transferrable to neighbouring canine rabies-infected countries.

The Region of the Americas gave priority to national programmes for rabies control in accordance with the resolution adopted in 1983 by the third inter-American meeting at the ministerial level on animal health to eliminate rabies by 1990 from all major urban areas in Latin America. International projects were developed for Central America, with the support of the World Rabies Foundation of the Order of Malta, and the Rockefeller Foundation.

Collaboration with the Rockefeller Foundation in transferring technology to developing countries for producing and quality controlling human and veterinary rabies vaccine led to a bank of freely available cells and adapted viruses being established, as well as a project for Vero-cell rabies vaccine production in Colombia.

Encouraging information on rabies control was presented at a WHO workshop on oral immunization of wildlife against rabies in Europe that was held in Tübingen, Federal Republic of Germany, in October 1986 (47). Oral immunization of foxes by six cooperating countries had created a continuous boundary of natural barriers that formed a large rabies-free area. Other European countries started applied research on oral rabies vaccine.

Several countries, with close technical cooperation from the Pan American Foot-and-Mouth Disease Center in Rio de Janeiro, carried out control programmes for brucellosis, bovine tuberculosis, hydatidosis, leptospirosis and rabies. Studies using mathematical models were conducted during 1978 and 1979 to evaluate various strategies for controlling animal diseases and to determine the economic loss caused by brucellosis, bovine tuberculosis, hydatidosis and tick infestation.

The Organization collaborated with several Member States in brucellosis control programmes and devised pilot studies to prevent and control goat brucellosis combined with live-stock development schemes in Greece, Portugal and Tunisia. A joint consultation with FAO on research requirements for brucellosis, held in Algiers in April 1983, identified areas in which lack of knowledge was hampering control efforts.

The Joint FAO/WHO Expert Committee on Brucellosis met in November 1985 to provide guidance on simple and direct action to be taken in countries with varying economic conditions and levels of development. Management procedures for community-based programmes were particularly emphasized.

Guidelines for controlling leptospirosis, based on the experiences of more than 20 specialists, were published in 1982 (48) and widely used in Member States. The publication aimed to

help those who were not experts in the disease with field and bedside diagnosis, clinical action, laboratory work, and selecting and implementing preventive measures suited to local needs.

WHO published a booklet on Rift Valley fever (49) and organized two workshops on laboratory diagnosis of the disease. A FAO/WHO collaborating centre for reference and research on Rift Valley fever was designated in Nairobi, and a joint FAO/WHO meeting held in New Haven, Connecticut, in March 1982 reviewed the use of veterinary vaccines for preventing and controlling the disease.

Research on echinococcosis included studies on chemotherapy in man, and on the epidemiology and control of this parasitic infection in its animal hosts. Decreasing prevalence rates were reported from only a few, specifically selected project areas. The Mediterranean Zoonoses Control Centre in Athens promoted field research projects in Egypt, Greece and Italy. An informal WHO consultation in Montreal in August 1987 agreed on a long-term plan for applied and fundamental research in the disease involving 20 laboratories.

Of the foodborne diseases of animal origin, salmonellosis in man is the most widespread (see Chapter 13). Preliminary assessments of the epidemiology of the disease in developing countries were made in the Region of the Americas and the Western Pacific Region. A working group was convened in Geneva in November 1985 to discuss salmonellosis and other zoonotic diarrhoeal diseases, and to plan the coordination of veterinary public health activities.

Guidelines were developed by special working groups in the following areas: preventing and controlling foodborne salmonellosis using a hazard-analysis-critical-control-point approach; specific immunoprophylactic control measures in animals; and non-specific methods applicable in animal husbandry. A WHO expert committee on salmonellosis control, meeting in Geneva in September 1987, recommended intersectoral cooperation be improved and community resources mobilized to reduce the risks to human health and losses in animal production as a result of this disease (50).

The WHO programme on comparative virology concentrated on data collection and reference services. Computerized information was made available for 120 animal viruses. A depository and register of reagents was expanded to include all major animal viruses and the corresponding antisera.

A WHO programme on influenza ecology was formulated and included surveillance in birds and mammals, and studies at the level of molecular genetics. Under this programme, studies were also carried out on immunological problems and vaccines, equine influenza serving as a model of the human disease. Recently observed epidemiological patterns of influenza viruses and their virulence in non-human hosts were discussed at a WHO consultation on the molecular epidemiology of influenza viruses held in Athens, USA, in September 1986.

The Organization, in cooperation with the Council for International Organizations of Medical Sciences, drafted international guiding principles for biomedical research involving animals. These were intended principally for countries or institutions that had not yet formulated their own ethical requirements for animal experimentation. In cooperation with the International Council for Laboratory Animal Science, a guide was prepared for developing countries on the care and use of laboratory animals.

Information services were improved in collaboration with the FAO and the Office of Epizootics (OIE) through a series of interagency consultations and the inclusion of a section prepared by WHO in the FAO/WHO/OIE *Animal health yearbook*. In a joint OIE/WHO data collection project, information was compiled on the legal and technical bases of national rabies control programmes in countries in Europe and Asia.

Sexually transmitted diseases

WHO's objective, working in close cooperation with countries, research centres and nongovernmental organizations, was to make effective sexually transmitted disease (STD) control services available to an increasing percentage of the population, particularly in developing countries where 80–85% of the inhabitants did not have even minimum health care for STDs, which were frequently present in 5–15% of the population. Cooperative research was conducted to develop simplified and rapid diagnostic techniques for use by non-specialist personnel, thereby obviating the need for expensive and sophisticated laboratory methods. Research was carried out at the same time on developing simplified rapid diagnostic techniques for bacterial infections.

The Organization provided fellowships and consultant services, and also supported group educational activities, to help countries assess their approach on STDs and to formulate and strengthen control programmes and laboratory support. These activities were complemented by various technical manuals covering diverse aspects of control programmes. A PAHO/WHO scientific working group met in Washington, DC, in April 1982 to prepare a manual on formulating and evaluating programmes, setting priorities and selecting intervention strategies. Following this, instructions in the form of simple flow charts were provided to health workers to guide them in managing patients and their sex partners with suspected STDs.

A small working group was convened in 1984 to collate existing experience and knowledge in a manual offering simple, area-specific guidance on managing the most common STDs and controlling them at the primary health care level (51). A bench manual on recommended laboratory procedures for STDs was also prepared.

WHO developed training modules to help update and upgrade the skills of health personnel involved in controlling STDs. These manuals were adaptable to local situations and to national programme objectives and approaches. As a first step, educationalists and experts in STDs met in November 1985 to identify the priority target groups for such training and to establish for each group the specific learning objectives that would help form the content of the training modules (52).

The sixth report of a WHO expert committee on venereal diseases and treponematoses contained guidelines on priority strategies to control STDs, providing health managers with a solid framework to develop efficient national programmes (53). Simplified controls as well as primary prevention strategies developed the previous biennium were particularly emphasized.

This simplified, problem-oriented approach to controlling STDs helped reduce complications such as infertility in women and men, ectopic pregnancy, urethral stricture and blindness. With evidence mounting that STDs were important cofactors in transmitting HIV (see below), early and adequate management of cases were particularly emphasized. Extrabudgetary resources were secured through the Arab Gulf Program for Development to help implement the simplified approach in Burkina Faso, Congo, Côte d'Ivoire, Mali, Togo and United Republic of Tanzania.

An increased emphasis on the primary prevention of all STDs led to health promotion oriented towards changes in sexual behaviour becoming the major intervention strategy. Promoting healthy behaviour in young people to reduce the risk of acquiring sexually transmitted diseases was the subject of a WHO meeting in Geneva in October 1987, at which plans of action for prevention and control were developed.

The emergence of gonococcal strains that were highly resistant to penicillin or to a range of drugs led WHO to organize a worldwide resistance surveillance programme. This problem

was compounded by the indiscriminate use of antimicrobial agents in man and animals and by their wide use in food preservation. A scientific working group in 1981 proposed methods to address the problem, which particularly affected countries that found it difficult to meet the cost of the new antibiotics required to deal with resistance.

The growing resistance of other causative agents to an extending range of antibiotics called for a continuous adjustment of treatment standards. A WHO consultative group was convened in Geneva in November 1982 to suggest treatment options for specific infections and their associated syndromes that would be effective against the various resistance patterns in different geographical areas (54). On the basis of these suggested regimens and more recent research findings, the International Union against the Venereal Diseases and Treponematoses formulated a set of options for treating STDs in countries in Africa.

In many regions of the world, genital ulcers of diverse bacterial and viral origin were responsible for a great many STDs. A multinational research project on diagnosis, treatment and control methods was coordinated by WHO. Research was also carried out to identify the antigens responsible for gonococci attaching to and penetrating cells and tissues, and to elucidate the mechanism of antibody production. Research to develop immunizing agents against gonorrhoea and other STDs was also supported. Monoclonal antibodies to antigens identified in the course of this research were being tried in rapid diagnostic tests and for eventual use in disease assessment and screening at primary health care level. At a WHO-supported meeting at the University of California in Los Angeles in December 1985, representatives of the few existing treponemal research groups agreed to collaborate more closely to economize the scarce resources available, accelerate development of improved and simpler diagnostic tools, and identify an immunizing agent against syphilis and the endemic treponematoses.

To guide rational and effective treatment standards, data was needed on the local susceptibility of causative agents to antimicrobials. To support national work in this area, reference procedures for testing the susceptibility of gonococci were elaborated and through collaborative research, an extended range of WHO gonococcal reference strains was made available to calibrate the technique.

In April 1984, to reinforce national surveillance and control activities, WHO collaborated with the Fogarty International Center in Bethesda, Maryland, USA, to convene an international symposium on yaws and other endemic treponematoses. The symposium, attended by more than 90 delegates, underlined the feasibility of eradicating the endemic treponematoses by way of primary health care activities. It called on bilateral and multilateral agencies to provide increased support to countries in their efforts to eradicate yaws. A first follow-up meeting, held in Cipanas, Indonesia, in July 1985, provided a platform for Asian and Pacific countries to present detailed national plans, with estimates of the external resources required to implement them. In anticipation of renewed control programmes and the increased need for training, an illustrated field manual on endemic treponematoses was published by WHO (55).

AIDS

Cases of an acquired immune deficiency syndrome (AIDS) were first recognized in 1981 in the USA. The syndrome was soon recognized in tropical countries, but little was known about risk factors or transmission in these areas. Regional meetings of surveillance groups and researchers were convened in the Americas and Europe to assess the problem and to stimulate cooperation

and information exchange. A meeting in Geneva in November 1983 synthesized global knowledge on risk factors, possible causes, and the clinical and immunological picture. At that point, the etiologic agent of AIDS had not yet been discovered. The meeting made preliminary recommendations for prevention, diagnostic and screening tests, and clinical management of cases, and also specified promising areas of research. Following this meeting, information on reported cases, disease patterns, the risks of acquiring the disease, and methods of prevention and control were made widely available through WHO publications. To coordinate surveillance activities, particularly in Europe, a WHO collaborating centre was designated in Paris.

Immediately following an international conference on AIDS in Atlanta, USA, in April 1985, WHO organized a meeting where participants reviewed the information presented at the conference and assessed its international implications (56). A key recommendation made at the WHO meeting led to the designation of further collaborating centres with special expertise in this field. The directors of these centres met in September 1985 to assess the impact of AIDS throughout the world and to advise the Organization on the development of an AIDS programme for 1986–1987 in which the centres would take an active part (57).

Reluctance on the part of some Member States to be “completely open in the matter of AIDS”, as Dr Mahler observed during his comments to the 77th session of the Executive Board in January 1986, had resulted in WHO being accused by some media of engaging “in a cover-up operation”. Continuing along that path would mean an “inadmissible politicization of the AIDS problem”. Member States would have to cooperate with WHO in total trust and openness if the Organization was to fulfil effectively its coordinating responsibilities.

The 1986–1987 biennium was marked by a major shift throughout the world in public perspective and opinion on the HIV pandemic. This was reflected in the dramatic increase in the number of reported cases of AIDS and countries reporting the disease.

In response to a resolution adopted by the Thirty-ninth World Health Assembly (WHA39.29), WHO cooperation with Member States in combating the disease intensified, and extrabudgetary resources were mobilized for the purpose. Following the second meeting of participating and interested parties in the prevention and control of AIDS, held in Geneva in June 1986, steps were taken to strengthen WHO’s activities. The goals and strategies of the programme were further developed and resources were mobilized within the Organization to provide it with a critical mass of personnel. In November 1986, the Director-General declared AIDS to be a global health priority and reaffirmed WHO’s commitment to its prevention and control. On 1 February 1987, he established the WHO Special Programme on AIDS. The two main functions of the programme were to provide global leadership and ensure international collaboration and cooperation; and to provide support to national programmes to prevent and control AIDS.

Two advisory bodies were established to support and guide the Programme: a global commission on AIDS, and a management committee. A special public information service was established to satisfy intense media interest in AIDS and ensure that comprehensive, accurate and timely information was available to Member States and the public.

WHO’s lead role in directing and coordinating global efforts was acknowledged by the heads of state and government of the industrialized countries and representatives of the European Communities at their 13th economic summit meeting in Venice in June 1987, by the Economic and Social Council of the United Nations (resolution E/1987/75), and by the United Nations General Assembly (42nd session, resolution 42/8), which urged all organizations and bodies of the United Nations system to support the worldwide response to AIDS.

The initial emphasis was to provide support to national programmes. During 1986 and 1987, 127 countries sought WHO's collaboration, and national AIDS committees were established in 151. In close association with WHO regional offices, initial technical assessments were made in more than 100 countries, and 58 national short-term plans were developed as the basis for providing immediate support. Twenty-five national medium-term plans were developed and another 60 were in the process of being prepared at the end of the decade.

More than 350 laboratory workers from 103 countries were trained in HIV antibody testing procedures at workshops held in the African Region, the Region of the Americas and also the Eastern Mediterranean and Western Pacific Regions. Staff from WHO regional offices provided strong support to national programmes by participating in country missions and in workshops and meetings of regional significance.

Consultations were convened on international travel and HIV infection (March 1987) (58); contraceptive methods and the control of HIV infection (June 1987); HIV and routine childhood immunization (August 1987); the prevention and control of AIDS in prisons (November 1987); and the interrelationship of AIDS and tropical diseases (December 1987). From these meetings came consensus statements and information on sensitive global policy and research that was widely disseminated.

As part of the programme's surveillance, forecasting and impact assessment activities, data relevant to controlling AIDS were collected, analysed and disseminated. Information on case numbers was published regularly in the WHO *Weekly Epidemiological Record*. A case reported as AIDS was accepted if it conformed with the WHO clinical criteria defined in 1985, or the revised United States Centers for Disease Control/WHO case definition, accepted after review by the WHO collaborating centres on AIDS. A global data bank was developed to include information on AIDS cases and on HIV-1 and HIV-2 seroprevalence, as well as economic, demographic, social and behavioural information vital to assess and monitor the disease.

Draft guidelines for conducting HIV serological surveys were field-tested and evaluated. A workshop on modelling the spread of HIV infection and the demographic impact of AIDS was held in Washington, DC, in October 1987, when it was concluded that no single approach could be selected, owing to the lack of data on sexual practices and the limited understanding of the natural history and patterns of HIV infection. In collaboration with the World Bank, preparations were made in three countries to study how planning for expected case-load could be improved.

Thirty WHO collaborating centres were designated to provide support to the Programme, particularly in research. At a meeting of representatives from these centres held in Washington, DC, in June 1987, consensus statements were adopted on HIV transmission, HIV infection and health workers, and current and future developments in laboratory testing for HIV (59).

An informal advisory group on biomedical research was established to help develop policy, objectives and strategies, and to identify opportunities to coordinate research, including on vaccine development. AIDS vaccine trials in human populations were considered at an informal consultation held in Geneva in December 1986, followed by further discussion in Munich in May 1987 on recent advances in vaccine development. Research was coordinated with a view to standardizing reagents and laboratory techniques for viral characterization. The standardization of diagnostic techniques was considered during a consultation at the WHO collaborating centre in Stockholm in December 1987.

In cooperation with the International Union of Immunological Societies, a working group gathered in Geneva in February 1987 to review the immunological abnormalities present in

AIDS patients, the development of vaccines against HIV infections, and special issues concerning these infections in Africa (60).

Guidelines on counselling HIV-positive individuals were prepared at a consultation in Geneva in April 1987. The effect of HIV infection and the AIDS pandemic on family-planning policies was reviewed at a consultation in Geneva in May 1987. Representatives from the major international family-planning organizations prepared a report on the subject. Strategies were developed for research on the complex issue of perinatal HIV transmission and the relationship between breastfeeding and infection in infancy.

Strategies for health promotion in relation to AIDS were reviewed at a consultation in Geneva in July 1987. Participants also considered a draft manual on the subject. Health promotion and education material collected from Member States was prepared for wide dissemination. In collaboration with the Netherlands Royal Tropical Institute, preparations were made to issue a quarterly newsletter. WHO also collaborated with the Bureau of Hygiene and Tropical Diseases in London to publish a monthly AIDS technical literature update.

Smallpox eradication surveillance

The last case of endemic smallpox occurred in October 1977, in Somalia. At its meeting in December 1979, the Global Commission concluded that smallpox had been eradicated throughout the world and there was no evidence to suggest it would return as an endemic disease. In May 1980, the Thirty-third World Health Assembly declared that smallpox eradication had been achieved throughout the world (resolution WHA33.3) and endorsed the recommendations on post-eradication policy made by the Global Commission for the Certification of Smallpox Eradication (resolution WHA33.4). In May 1981, the Thirty-fourth World Health Assembly excluded smallpox from the list of diseases subject to the 1969 International Health Regulations.

The Health Assembly recommended that routine smallpox vaccination be discontinued in every country except for investigators at special risk. At the end of 1979, routine smallpox vaccination was still occurring in 51 countries. By December 1981, however, it was officially discontinued in 144 Member States, and by the end of the decade, all countries had discontinued routine vaccination. During this period, WHO announced smallpox vaccination certificates were no longer required from international travellers.

For security purposes, WHO maintained a vaccine and bifurcated needle reserve sufficient to vaccinate more than 200 million people. These were maintained in two depots in Switzerland, in Geneva and Lausanne, to minimize the risk of equipment failure or malfunction in a single store, and to be able to deliver these items to any airport in the world within 24 hours. Stored vaccines were periodically tested according to an approved methodology and sampling plan. Vials of vaccinia virus, to be used as seed virus for the production of vaccine should that ever be necessary, were distributed to laboratories in France, Japan and the USA by the WHO collaborating centre in Bilthoven, the Netherlands.

Rumours of suspected cases of smallpox continued to be reported after 1980 at an average rate of 20 per year. All were investigated and found to be due to misdiagnoses of chickenpox, measles or skin diseases, or to errors in recording. WHO collaborating centre laboratories in Atlanta and Moscow diagnosed the material from suspected cases.

At the end of 1979, seven laboratories retained variola virus. WHO continued to discourage its retention while inspecting these laboratories periodically to ensure the variola virus stocks

were being kept under strict control. By the end of the decade, only two laboratories continued to hold stocks of variola virus: the United States Centers for Disease Control in Atlanta, and the Research Institute for Viral Preparations in Moscow, both WHO collaborating centres. Culture of variola virus ceased in both laboratories.

Monkeypox surveillance and research continued throughout the decade. The Committee on Orthopoxvirus Infections, established in 1981, stressed the importance of continued Monkeypox surveillance in order to provide a clear indication of the extent to which the human form could be considered a public health problem (61). Nearly all human cases of monkeypox occurred in Zaire, where the number of reported cases rose from eight in 1981 to 59 in 1986 due to improved surveillance. Human monkeypox is a sporadic zoonosis, with 75% of patients probably infected from animal sources. Ecological studies isolated monkeypox virus for the first time in a wild animal: a squirrel, captured in Zaire in July 1985.

Being able to elucidate the epidemiological patterns of monkeypox, as well as identify a reservoir and the intermediate hosts, depended heavily on a reliable and sensitive serological test, specific for monkeypox antibody. Research grants from WHO supported several approaches to solving this problem. Monoclonal antibodies that could distinguish monkeypox virus from other known orthopoxviruses were produced in two laboratories. One promising development for field applications was the use of freeze-dried reagents for a modified haemagglutination inhibition test. A new technique was developed for comparison by electron microscopy of molecules of DNA segments of variola and monkeypox in homoduplex and heteroduplex forms.

A comprehensive reference work, detailing the scientific, operational and administrative aspects of the global smallpox programme, was completed to mark the 10th anniversary of the eradication of the disease (62). Articles dedicated to the 10th anniversary were published, and documentation relating to the programme was catalogued and archived at WHO headquarters.

Other communicable disease prevention and control activities

Epidemiological evidence showed that diseases of high epidemic potential, such as hepatitis, haemorrhagic fevers, viral encephalitis, influenza, louse-borne typhus, cerebrospinal meningitis and plague, continued to occur throughout vast areas. To prevent and control these diseases, WHO aimed to: extend its cooperation with countries, and that of countries among themselves; develop new and improved diagnostic, prophylactic and therapeutic measures and case-management schemes; and implement surveillance and control of acute bacterial and viral disease of public health significance. While the Organization experienced increased demand for technical support, including reagents and reference services, progress in developing national surveillance programmes and in promoting the production and quality control of diagnostic reagents, was slow to develop.

Of the viruses associated with life-threatening haemorrhagic syndromes, dengue was the most widespread. Vaccine development was given high priority; strains for a quadrivalent vaccine, designed to protect against all four serotypes of dengue, were initially selected by the WHO collaborating centre in Bangkok for study. Serotypes 1 and 2 candidates showed progress and were selected for trials in humans. At the end of the decade, good progress was being made in preclinical work on the other two serotypes. A comprehensive guide, *Dengue haemorrhagic fever: diagnosis, treatment and control*, was published by WHO in 1986.

A WHO expert committee on viral haemorrhagic fevers that met in Geneva in March 1984 paid special attention to patient management and to preventing and controlling viral haemorrhagic fevers in man and animal (63). Rodent-borne haemorrhagic fever and renal syndrome, which previously were thought to occur only in restricted areas in Asia and Europe, were found by means of antibody reactions to this virus to be present in all continents, with the possible exception of Australia and New Zealand. A regional meeting in Tokyo in February 1982 outlined the framework for a WHO research programme in this field.

Japanese encephalitis, a serious health problem with significant mortality in children and old people in many countries of Asia, was controllable only by immunization. Collaborative studies on vaccines were initiated at a meeting in Tokyo in December 1983 for the Western Pacific Region. Working groups convened by the Western Pacific Regional Office met in Sendai, Japan, in August 1984, and in Tokyo in December 1985 to review progress in the vaccine and in developing an immunization strategy. Inactivated vaccines produced in China, Japan and the Republic of Korea contributed to a marked reduction in incidence; however, since their use in developing countries was still restricted by cost considerations, efforts to develop a highly immunogenic, inexpensive vaccine continued.

WHO supported efforts to control rickettsial disease by providing training through inter-country workshops and by furnishing diagnostic reagents through the WHO collaborating centres on rickettsial reference and research. Transferring technology to developing countries was discussed at a consultation on diagnosing rickettsial diseases held in Palermo, Italy, in June 1987.

WHO cooperated in evaluating the effectiveness of groups A and C meningococcal vaccines against cerebrospinal meningitis. Group B vaccine was in development. In conjunction with the reference and training activities carried out with the WHO collaborating centre for reference and research on meningococci, diseases studies and evaluations were conducted in 1983 through a WHO-sponsored conference at the Marseilles-based centre. WHO continued to provide technical and material assistance to countries, particularly those in the cerebrospinal meningitis belt in Africa that were implementing control strategies.

Sporadic cases and epidemics of plague were reported throughout the decade in countries with known natural foci of the disease. To ensure constant vigilance in case-detection and follow-up, WHO extended the network of collaborating centres to countries with natural foci of plague. The United States Centers for Disease Control laboratory in Fort Collins, Colorado, was designated in 1983 to serve countries of the Americas as a collaborating centre for reference and research on the disease. Training activities at regional and intercountry level provided a means to coordinate the efforts of countries with common endemic foci. A WHO meeting on strategies to manage emergencies caused by epidemics of plague was held at the collaborating centre at Stavropol, USSR, in September 1982.

To evaluate the extent of natural foci of plague, serological studies on wild rodents were conducted in several countries. Countries of the South-East Asia and Western Pacific Regions participated in an intercountry seminar on the epidemiology of plague, in Rangoon in December 1985. The specific objectives of the seminar were to review the overall plague situation and control measures, including laboratory facilities for diagnosis, and to recommend measures for active surveillance and control.

With about 200 million persistent carriers of hepatitis B virus in the world, WHO supported Member States in improving the production and quality of hepatitis B vaccine and diagnostic reagents. A global-level technical advisory group on viral hepatitis, and regional task forces

were established to identify priorities and to make recommendations on vaccines and control. National programmes to control hepatitis B were established in China, Indonesia and Thailand.

WHO helped transfer vaccine-manufacturing technology to a few competent laboratories in developing countries where the cost would have otherwise been prohibitive. Support was also provided to enable regional and national centres to increase their capacity to produce diagnostic reagents. A WHO meeting in Munich in May 1982 discussed several aspects of the disease, such as its biology, laboratory diagnosis, and prevention, and also the association of hepatitis B virus and hepatocellular carcinoma. Collaborative studies on hepatitis B vaccine efficacy were conducted in several countries, and enterically transmitted hepatitis non-A, non-B was studied in Member States of the South-East Asia Region.

The reappearance in 1977 of the H1N1 antigenic subtype of influenza A virus stimulated further research, which in turn led to a better understanding of the differences among the influenza A viruses. This knowledge was used to revise the nomenclature of influenza A. A joint meeting of WHO and the United States Centers for Disease Control, held in Atlanta in 1978, proposed a system grouping the viruses, whether human or animal, into 11 groups; this system was soon updated to one based on 12 haemagglutinin and nine neuraminidase subtypes.

International surveillance of influenza was carried out by 108 national influenza centres and two WHO collaborating centres for influenza reference and research. WHO meetings on the composition of influenza vaccines made recommendations for the coming influenza seasons based on observations made by these centres.

A new programme for vaccine development was initiated at the end of 1983 on the recommendation of a group of leading scientists that had met to review progress in biomedical research (64). The aim of this new programme was to support research in biotechnology (DNA recombinant and cell-fusion techniques) and immunological mechanisms, with the aim of harnessing these techniques to develop new vaccines and improve existing ones in the following disease areas: tuberculosis, acute respiratory viruses, dengue, encapsulated bacteria, hepatitis A and poliomyelitis. Extrabudgetary funds were received from the governments of Japan and Norway, the Glenmede Trust and the Rockefeller Foundation.

Research focused on:

- acute respiratory infections caused by respiratory syncytial virus and parainfluenzavirus type 3: studies focused on understanding the fundamental nature of the two viruses, which are quite distinct agents, making it necessary to adopt different strategies for vaccine development;
- meningitis caused by *Neisseria meningitides*, concentrating on developing new-generation vaccines;
- hepatitis A and poliomyelitis, and hepatitis non-A, non-B, which was added to the programme in 1987, with the hope that recombinant vaccines, associating genes from hepatitis A and poliomyelitis, would soon be obtained;
- tuberculosis: the genes of *Mycobacterium tuberculosis* had been cloned and synthetic peptides were available;
- dengue and other diseases caused by flaviviruses, including yellow fever, and since 1986, Japanese encephalitis.

With a view to regionalizing production of reagents in developing countries, the transfer of technology was discussed at a meeting in Geneva in November 1985 of WHO collaborating centres concerned with viruses. Using modern biotechnology to analyse viral genomes and

the proteins they encoded, methods that contributed to a better understanding of the antigenicity and virulence of viruses and also provided for the design and production of vaccines and diagnostic reagents, were particularly emphasized. With support from the United Nations Development Programme (UNDP), three institutes, in Bangladesh, Burma and Sri Lanka, were identified in 1986 as suitable facilities to produce simple diagnostic reagents. In 1987, institutes in Cameroon and Nigeria were identified to receive UNDP support for the same purpose. The advantages and disadvantages of using synthetic antigens to diagnose infectious diseases were reviewed by a WHO scientific group that met in Geneva in November 1987 (65).

With continued support from the Federal Government of Switzerland, the Immunology Research and Training Centre (Lausanne/Geneva) conducted annual courses in French and English on the immunology and immunopathology of infectious diseases. Owing to a larger number of government applications, the number of available places was increased in 1985; from eight to 12 for the French course, and from 16 to 20 for the English course. The Centre assisted former trainees in establishing their own teaching and research activities on returning to their home institutions.

Blindness

The WHO programme for the prevention of blindness, established on 1 January 1978, was recognized as a priority programme for technical cooperation. Its main emphasis was to promote national programmes, with the long-term objectives being to: reduce national blindness rates to less than 0.5%, with no more than 1.0% in individual communities; introduce adequate eye care in under-served communities; and promote eye health. At the time, it was estimated there were 28 million blind people in the world: 21 million in developing countries, 5.5 million in intermediate countries, and 1.6 million in developed countries.

A 12-member global programme advisory group, which was established in 1978, met on several occasions during the first biennium to consider strategic planning, blindness data, training auxiliary personnel in eye care, and methods to assess avoidable blindness. Meetings were held in all regions to outline regional strategies and to promote the formulation of national programmes. A network of WHO collaborating centres for the prevention of blindness was established in all regions. In two of these, in Baltimore and London, new centres or departments were established within existing academic institutions that offered formal multidisciplinary training in epidemiological and preventive ophthalmology.

The advisory group met in Ouagadougou, Burkina Faso, in 1980 at the headquarters of the Onchocerciasis Control Programme, and in New Delhi in 1981. The latter meeting was attended by representatives from all the regional offices with a view to achieving a coordinated programme. The economic implications of preventing blindness were reviewed in 1980 by a small expert group in which the World Bank participated. The advisory group met in Geneva in 1982 and in Manila in 1983 to consider collaboration with nongovernmental organizations and review national programmes.

A basic work of reference for developing national programmes (66) and a guide for controlling xerophthalmia were published. Sets of five colour slides with explanatory notes for diagnosing trachoma were prepared and distributed. A new, fully revised guide for controlling trachoma was published in 1981 (67).

Technical cooperation with Member States focused on developing national programmes for preventing blindness. Major activities included preparing guidelines for simple and low-cost field surveys of blindness and its main causes; producing a poster on eye care at the primary health care level in collaboration with the International Eye Foundation; publishing *Strategies for the prevention of blindness in national programmes: a primary health care approach*; and conducting feasibility studies in several countries on providing low-cost spectacles for schoolchildren and patients who had cataract surgery (68). For the latter activity, manuals were prepared on basic optics and screening schoolchildren to detect visual defects early. Encouraging experiences in several Member States in the African Region created rapid interest in setting up small-scale workshops to produce and assemble standardized spectacles.

WHO worked closely with nongovernmental organizations active in this and related fields, notably the International Agency for the Prevention of Blindness (IAPB), the International Federation of Ophthalmological Societies, the International Union of Nutritional Sciences, and the World Council for the Welfare of the Blind. Under the auspices of the IAPB, a consultative group of nongovernmental organizations was formed during the 1984–1985 biennium to help make resources available for programme development. Several bilateral and multilateral agreements were reached in support of national programmes, with and without direct WHO participation. Signatories included the Netherlands, Norway, the Arab Gulf Program for Development and several nongovernmental organizations. Financial support for the global programme was received from the Voluntary Fund for Health Promotion, the Japan Shipbuilding Industry Foundation and the National Institutes of Health of the USA. Extrabudgetary funds were crucial to the programme as they enabled it to be implemented on a large scale, starting in 1984.

Eye care training aids for primary health care personnel were upgraded using funds received from the Japan Shipbuilding Industry Foundation and in close collaboration with nongovernmental organizations. The poster on eye care at the primary level was greatly appreciated in many countries, with 60 000 copies in eight languages disseminated during the 1984–1985 biennium alone. WHO produced an information pack for use as a health education tool in its programme to prevent and control vitamin A deficiency and related blindness (see Chapter 10) (69).

The lack of reliable data on disorders causing blindness was an obstacle to systematic prevention and treatment in certain areas. A grant in 1980 from the National Eye Institute in the United States was used to collect data on blindness and conduct applied field research. A blindness data bank was established, and the information it housed on blindness throughout the world was periodically updated.

A working group met in November and December 1983 to recommend methods to prevent and treat ophthalmia neonatorum, with particular reference to primary health care. In October 1982, in conjunction with the Training in Tropical Diseases programme, a meeting was held to discuss the complex pathogenesis and treatment of ocular onchocerciasis.

Applied research on major blindness diseases was carried out through the network of WHO collaborating centres. Training courses in eye care were also organized by some of these centres. Research activities included studies to develop a simplified system to assess trachoma (70) and its complications, and to elaborate a methodology for conducting surveys of the major causes of blindness. The WHO collaborating centre in London provided an annual, six-month Diploma in Community Eye Care course. An 11-month Master of Public Health degree course in preventive ophthalmology and public health commenced in 1987 at the WHO collaborating centre in Baltimore.

By the end of the decade, about 50 countries had national blindness prevention programmes. While each was adapted to local needs and resources, they all had in common a primary health care approach to blindness prevention; i.e., essential eye care at the community level, and access to referral services for the more complex cases of eye disease. The experience with primary health care, undertaken by local health workers who were trained in simple eye-care procedures, had generally been positive, although the lack of sufficiently developed referral systems enabling the prompt diagnosis or treatment of severe cases still posed a problem. This held particularly true in the rural areas of many developing countries, where insufficient specialist personnel meant referral services were less than viable. In some countries this situation was overcome by training ophthalmic medical assistants, in others by training general physicians in ophthalmology.

Cancer

The main targets for the cancer programme were, by way of existing knowledge and parallel goal-directed research, to prevent up to one third of the cancers then encountered, to cure up to one third, and to spare incurable cancer patients unnecessary pain as much as possible. Priority was given to those cancers that could be prevented.

In January 1978, the Executive Board (resolution EB61.R29) endorsed the report of its Ad Hoc Committee on WHO's Activities in the Field of Cancer, which recommended that the cancer programme at WHO headquarters and the programme of the International Agency for Research on Cancer (IARC) should retain their separate identities, but be better coordinated in their activities and planning for the future. To this end, a coordinating committee should be set up to deal with high-level policy issues, draw up and evaluate the overall programme, and study problems of overlapping.

The Director-General's Coordinating Committee on Cancer, which brought together representatives from WHO, IARC and the International Union against Cancer (UICC), began its work with: a situation analysis on cancer, carried out by a WHO/IARC team in Sri Lanka and Thailand, in conjunction with the Regional Office for South-East Asia, and in Iraq, Kuwait and Sudan, in conjunction with the Regional Office for the Eastern Mediterranean; the formulation, by an IARC/UICC/WHO group, of guidelines for national cancer control activities and research, which could be used by countries to formulate their own policies; and a simulation exercise in such policy formulation carried out in Sri Lanka by a team of national IARC, UICC and WHO representatives.

One result of the committee's work was a clearer division of duties between WHO and IARC: WHO was to concentrate on cancer control, including prevention, early diagnosis, therapy, rehabilitation and operational research; IARC on identifying carcinogenic factors in the environment, defining various groups at risk of such factors, and describing the epidemiological situation throughout the world, including related laboratory and field research (see below).

Guiding principles were devised to help developing countries formulate national programmes (71) and tackle cancer problems in a realistic manner given the limited resources available. These were used in several countries, including Chile, India and Sri Lanka.

In the African Region, three subregional centres helped strengthen cancer-control activities at country level. Following the creation in 1983 of the African Organization for Research and Training in Cancer, there was a broader recognition in many of the African Member States

of the emerging cancer problem. Research, in collaboration with IARC, the United Nations Environment Programme and the Food and Agriculture Organization of the United Nations, was conducted in Uganda on Burkitt's lymphoma, and on a possible relationship between malaria and the Epstein-Barr virus; and in Swaziland, on cancer of the liver and aflatoxin.

A method for setting priorities for cancer control programmes was developed by WHO. It compared the cost-effectiveness of various cancer control activities by providing a structure and terminology so that each element could be considered separately and then recombined to estimate the impact of different activities. The use of this method to set priorities was strongly endorsed at a meeting convened by WHO in Geneva in December 1985.

Primary cancer of the liver was singled out at the 24th session of the global Advisory Committee on Medical Research as one of the priorities for primary prevention. A meeting on the prevention and control of liver cancer, convened by WHO in Geneva in February 1983, attracted more than 30 international experts on cancer and virology. They reviewed the available evidence on the main causal factors of hepatocellular carcinoma, and proposed a programme mainly directed at prevention and early detection of liver cancer, with emphasis on initiating and evaluating practical approaches (72). For the first time, an unprecedented opportunity existed to prevent a common cancer, namely primary hepatocellular carcinoma, by vaccination (73).

Primary prevention to reduce the number of deaths from lung and oral cancer also was recognized as having the greatest potential for success. The report of a WHO meeting in Geneva in November 1981, convened to reappraise efforts to prevent and control lung cancer (which could be attributed to smoking in more than 80% of cases), stressed the need for and cost-effectiveness of prioritizing primary prevention (74). Anti-smoking and anti-tobacco-chewing projects were initiated in the South-East Asia, European and Eastern Mediterranean Regions. Commitments to include legislation, education and information on tobacco, and coordinated control efforts, as part of national cancer programmes were made by many Member States.

A WHO meeting on oral cancer stressed the importance of controlling tobacco use through health education and legislation (75). In the South-East Asia Region, where there were more than 100 000 new cases of oral cancer each year, about 90% of cases were caused by tobacco-chewing and smoking. A health education programme in India demonstrated the possibility of reducing the number of habitués, the number of precancerous lesions, and the incidence of the disease.

A survey was carried out among members of the International Association for the Study of Lung Cancer to collate the views of lung cancer specialists to help develop control strategies. The survey found that 97% considered at least 80% of all lung cancer cases were caused by tobacco, and 90% felt that anti-tobacco programmes consisting of legislative and restrictive measures, education and information dissemination, should receive an increased share of public resources.

Cervical cancer was the most common form of cancer in developing countries and the fifth most common worldwide, with about 500 000 new cases each year. Although extensive knowledge on the conduct and value of cytology screening was available, it was not being applied optimally in many countries, and not even minimally in others. WHO convened a meeting in Geneva in November 1985 to review the approaches and impediments to reducing mortality from this cancer, and strategies were formulated for early detection approaches covering the majority of women at risk, adequate cytological services and appropriate therapy (76).

In 1988, WHO published guidelines for the early detection of cervical cancer, emphasizing coverage of high-risk groups by cytological screening and the careful use of both screening and

laboratory resources (77). It promoted the development of cytology services and screening programmes in all the regions. Workshops on cervical cancer screening, organized by the Region of the Americas, emphasized education and the participation of women's groups.

A protocol for the scientific evaluation of breast self-examination was elaborated and tested in the USSR. This was followed by a controlled trial to determine the potential of self-examination for reducing mortality from breast cancer; more than 100 000 women in Moscow and Leningrad were enrolled at the end of the decade. Extrabudgetary resources were mobilized for research on preventing liver cancer by immunizing against hepatitis B virus. Chile, Iceland, India, Poland and Sri Lanka collaborated with WHO on cost-effective approaches to control cancer of selected sites.

To encourage the medical profession to improve palliative care for cancer patients, a relatively simple and inexpensive method of easing cancer pain was developed and field-tested. This method, which received international acceptance, provided for drugs to be administered immediately by mouth if there was pain, and for the drugs to be changed from non-opioids, until the patient was free from pain. The publication *Cancer pain relief* was translated into seven languages in addition to WHO's official languages. The Organization promoted the establishment of a global network of individuals, institutions and organizations to disseminate information on how to relieve pain and make patients and their families more aware that pain was almost always controllable; incorporate cancer pain therapy into doctor and nurse training; treat cancer pain at general hospitals, health centres and at home, rather than only at specialized cancer centres; and reframe national drug legislation so that giving pain-relieving medication to patients was not hindered. Representatives of more than 45 Member States were participating in this global programme by the end of the decade. With the collaboration of WHO, a comprehensive cancer pain-relief demonstration programme was established for the State of Wisconsin in the United States.

A shortage of trained key personnel continued to be a major obstacle to implementing effective national cancer control programmes. Together with the International Agency for Research on Cancer, the International Union against Cancer, the Commission of the European Communities, and other organizations, WHO collaborated in training activities at country, regional and global levels. These activities included training professionals to lead national programmes, and training radiotherapists (e.g. the on-site programme in Sri Lanka). To form a reliable basis for planning national cancer control programmes, WHO cooperated and provided training in establishing cancer registries in more than 25 Member States.

Various WHO collaborating centres were designated to help implement the Organization's cancer control programme in specific areas: breast self-examination (Leningrad); community cancer care (Glasgow); oral cancer prevention and oral cancer therapy and aftercare (Bombay); quality of life (Amsterdam); and symptom evaluation in cancer care at the University of Wisconsin Carbone Cancer Center.

International Agency for Research on Cancer

The activities of the International Agency for Research on Cancer were primarily directed at the causes of cancer, with the aim to generate and disseminate information useful for preventing cancer. Primary prevention was emphasized, as was evaluating early detection and mass screening programmes for cancer control and secondary prevention.

The Agency carried out its own research while also coordinating the work of national institutions under a series of research agreements. By the end of the decade, a network of cancer centres was established for conducting collaborative case-control studies, with common research protocols used for studying widely dissimilar populations. The research included studies in descriptive and analytical epidemiology, and the investigation of chemical carcinogenesis and tumour-associated antigens. A training programme was integrated with these research activities.

The Agency also provided support to establish and maintain cancer registries as essential tools in epidemiological investigations, and collaborated in developing registration methodology, with particular attention paid to the computer software used in cancer registries throughout the world. Information from these registries contributed to periodic volumes of *Cancer incidence in five continents*; volume IV was published in 1982 and volume V in 1987. The latter publication incorporated cancer incidence data from 105 population-based registries, covering 137 population groups in 36 countries. In 1987, a special collection of data on childhood cancers from 72 registries and derived from 81 population groups was prepared for publication. Where possible, incidence rates were calculated, but where there was no defined population, relative frequency of different tumour types was given.

Using the large database at its disposal, the Agency assessed the changes in rates of incidence and mortality from some common tumours that might be expected to occur by the end of the century. An important, related project was an analysis of time trends of cancer morbidity and mortality for a large number of countries. A monograph on cancer patterns in developing countries was completed (78).

Annual directories of ongoing research in cancer epidemiology, jointly prepared by the Agency and the German Cancer Research Centre in Heidelberg, became established as standard sources of information on epidemiological studies throughout the world. The volume for 1981, for example, listed 1313 projects from 80 countries, and included an index of chemicals for which human exposure were recorded and studied.

Studies undertaken or coordinated by the Agency covered a variety of subjects, including the hazards of man-made mineral fibres, liver and large bowel cancers, and chemical carcinogens. Partial results of these and other studies follow.

The international collaborative study of health hazards among production workers in the man-made fibre industry, initiated in the previous decade, was completed at the end of this decade. The results showed a two-fold excess in lung cancer mortality among workers with a high exposure to fibres during an early technological phase of rock-wool production. A cohort study of Swedish building workers exposed to both man-made mineral fibres and asbestos showed an excess of risk of lung cancer, the effect being much more pronounced for asbestos. A similar excess of risk of lung cancer was observed among workers receiving compensation for silicosis.

A study in France comparing the protective effects of different types of dietary fibre showed a consistent tendency towards a reduced risk of colorectal polyps from increased consumption of fibre from fruit, potatoes and other vegetables. No such association was observed in fibre from cereals and flour.

In the Gambia, where all children were progressively vaccinated against hepatitis B virus, the effectiveness of the vaccine in preventing chronic liver disease and hepatocellular cancer in later life was evaluated in a programme supported by the Government of Italy; the study was still ongoing at the end of the decade. The incidence of breast cancer among women of

Guangdong Province in China differed widely from that among women of European origin living in New York. A case-control study was initiated during the 1986–1987 biennium of these two population groups and of a third group, Chinese women living in New York, to test the ‘free-oestrogen’ hypothesis of breast cancer etiology.

Human cell lines were collected from individuals with and without breast cancer or nasopharyngeal carcinoma within large families for linkage studies. A bank of lymphoblastoid cell lines from normal families was established to provide sufficient DNA to map those parts of human chromosome chains that seemed to play a role in oncogenesis. Studies were also conducted on the possibility that a constitutional anomaly of the *c-myc* oncogene identified in both malignant and non-malignant cells of two cancer patients was a cancer risk marker.

Studies were undertaken to detect the genes that might be essential during the late phase of cellular differentiation, given the possibility that a deregulation of the late differentiation programme might represent an essential step in carcinogenesis. Studies *in vivo* were conducted to analyse quantitatively the effects of tumour initiators and promoters. A set of projects to elucidate the role of oncogenes in the multi-step process of carcinogenesis was developed.

An analysis of the fellowships programme confirmed the validity of criteria for awarding these, and revealed that most of the fellows continued to work in the field of cancer research. Some 20 research training fellowships were awarded annually, along with several visiting-scientist grants. Courses in cancer epidemiology were held on occasion also.

Cardiovascular diseases

In 1978, a long-term programme on cardiovascular diseases was formulated involving headquarters and all regional offices. As a first step towards implementing it, work began on a medium-term programme for 1978–1983, the principle objective being to develop and test methods that would enable public health authorities to establish programmes to prevent and control cardiovascular diseases as an integral part of existing health services.

The WHO-coordinated study on comprehensive cardiovascular community control programmes, which had started in 1974 and was carried out by centres in all parts of the world, helped initiate pilot programmes that at the beginning of the decade covered more than seven million inhabitants in 23 countries, 11 of them developing countries. A preliminary analysis of results showed it was possible by the community approach to decrease the various risk factors and favourably influence the incidence of certain cardiovascular diseases, especially stroke.

In 1980, plans were initiated for an international study to monitor trends and determinants in cardiovascular diseases. A protocol was prepared in 1981 and tested in a feasibility study in three centres in Europe: in North Keralia (Finland), Kaunas (USSR), and Copenhagen. The first meeting of investigators was held in October 1981 and the study was started in 1982. Scheduled to last 10 years, the study measured trends in cardiovascular disease mortality and coronary health and cerebrovascular disease morbidity, and assessed the extent to which the trends in defined communities were related to changes in known risk factors, health care or major socio-economic features.

In 1983, this project, now known as the WHO MONICA project (the acronym stood for multinational monitoring of trends and determinants in cardiovascular diseases), was extended to include 40 centres in 25 countries. The project also served to introduce in participating countries health statistical methods that provided effective support to national health information

systems. Initial results were published in 1987 (79). The project received support from WHO, the Government of Finland, the United States National Heart, Lung, and Blood Institute, and various sources within the participating countries.

A framework of guidelines for planning specific approaches and activities at the national level was prepared and refined at a meeting of national programme managers in Geneva in November 1985. These guidelines were based on the recommendations of two expert committees (80) and of the European Conference on the Primary Prevention of Coronary Health Disease that was held in Anacapri, Italy, in October 1984. In his comments on the expert committee report, the Director-General said "it was truly remarkable that a group of eminent cardiologists, deans of schools of medicine and other clinicians had come up so forcefully with a well-defined strategy for preventing coronary heart disease and its consequences ... The Expert Committee's strategy had succeeded in combining promotion of more healthy lifestyles, reduction of preventable conditions and provision of adequate health care. To take up that challenge should not be considered a return to the 'one-disease-at-a-time' approach, or the infamous verticalism of the past, since the multiple factors and disciplines involved could lead to far-reaching changes in the whole health system and its infrastructure. The possibilities opened up by bringing together primary health care physicians, nurses and others; epidemiologists and health planners; sociologists, psychologists and behavioural scientists; economists; the mass media; nongovernmental organizations and community groups – who, in working out and carrying out national strategies, could rely on the international consensus of the world's leading experts in relevant fields – would be considerable."

A scientific group that met in Geneva in October 1984, in recommending 15 areas for research, concluded that the development of emergency community medical services was likely to make an impact on preventing sudden cardiac death, where the association with coronary heart disease was well established. Such services had the added advantages of providing emergency treatment for other complaints and involving the people and increasing their health awareness (81).

Investigators met in Geneva in December 1978 to discuss a plan of action for primordial prevention of cardiovascular diseases in developing countries to prevent risk factors increasing. Representatives of other organizations in the United Nations system were invited to this meeting. Primordial prevention was a new concept that, in its purest sense, aimed to prevent risk factors developing in populations still free from most of the cardiovascular diseases. Only during the 1984–1985 biennium, however, were steps taken to intensify activities in this area.

At their first meeting, in Geneva in June 1985, investigators recommended the combined implementation of primordial prevention, based on comprehensive school health education programmes, and measures to prevent and control cardiovascular and other noncommunicable diseases within primary health care. Pilot projects were started in nine developing countries in 1985. In two centres, these projects were linked with district planning and primary health care management. The main constraint encountered was the lack of trained personnel and material resources.

The concept of a comprehensive integrated programme to prevent and control chronic noncommunicable diseases, along with an experimental programme to be carried out in a few target centres and countries, grew out of a series of meetings held during the 1980–1981 biennium. A European group of investigators that met in Heidelberg in October 1982 concluded that community control programmes were especially beneficial in promoting hypertension and smoking control measures and in developing health information systems. The group then

turned its attention to enlarging the scope of these programmes to include other chronic diseases, such as diabetes, lung diseases and cancer, in line with this new concept. Pilot studies were started, initially in eight countries. An approach to integrated interventions was tested and systematically monitored in 15 countries of Latin America and the Caribbean through a special project. In developing countries, the emphasis was on combining selected cardiovascular and other noncommunicable disease prevention and control activities and integrating them, together with primordial prevention, in primary health care. Such programmes developed in the Philippines, Sri Lanka, Thailand and the United Republic of Tanzania.

Investigators met in New Delhi in November 1979 to mark the end of a long-term study on the community control of rheumatic fever and rheumatic heart disease. Their report emphasized the feasibility and practicality of early prevention measures. Experience from the multi-centre cooperative project showed that control projects, as outlined in the WHO protocol (82), were feasible in developing countries. Regular surveillance could be difficult, but the gains were considerable, even with a follow-up rate of 50% and with only half of those followed up on regular prophylaxis. A joint WHO/International Society and Federation of Cardiology committee was set up in 1982 to help devise a collaborative strategy to prevent rheumatic fever and heart disease in developing countries. Increased programme activities, as discussed above, led to 15 countries, in five regions, initiating a community-based prevention programme in at least one local area, with a view to extending coverage countrywide over a stated period of time. These programmes involved case-finding, registration, surveillance of suspected cases and follow-up of known and newly identified patients. The Arab Gulf Program for Development provided the necessary funding.

By the end of the decade, all 15 countries had established a national programme. The total target population (children aged 5–15 years) in the designated programme areas was more than three million. More than 200 000 children in 12 countries were screened, and there were more than 5000 on rheumatic fever/rheumatic heart disease registers in the 15 countries. A WHO study group on rheumatic fever and rheumatic heart disease met in Geneva in March 1987 to review current knowledge and medical and public health practice, and the advances made over the previous 20 years. It also made recommendations on rheumatic fever control programmes, and pointed out areas where specific basic and applied research were needed to effectively control this problem (83). It specifically recommended that health services research be carried out in those countries where pilot programmes had been initiated to investigate strategies to expand such studies to nationwide programmes, within the context of primary health care, with WHO's encouragement.

An expert committee on arterial hypertension met in Geneva in March 1978 and recommended that national public health authorities give prompt attention to this disease, which affected at least 8% of the adult population in most countries (84). The committee's report outlined what was known about hypertension, and the means for assessing its gravity and for treating patients; suggested a community approach to prevention and control in countries with different types of health-care systems; and recommended appropriate research. Several members of the expert committee helped prepare a manual on controlling hypertension.

A WHO-coordinated 10-year study on the community control of hypertension ended in 1980. The preliminary results were discussed at the final meeting of investigators in Geneva in December 1980. One of the key benefits of this project was the experience gained in organizing and operating hypertension control programmes in different social and health-care settings. The preliminary report covered setting up, managing and evaluating a hypertension project;

cooperating with and motivating the health services; and the need to make hypertension control an integral part of basic health care.

Epidemiological studies on hypertension continued in several countries in each of the regions. These studies were part of local prevention and control programmes, and were not usually pursued independently of them. A European health care-related hypertension research action programme was developed, comprising four main elements: monitoring and analysing hypertension research in Europe; standardizing health care; promoting and coordinating health care-related research projects; and promoting research and primary prevention of essential hypertension. In the European Region and the Region of the Americas, operational research relating to managing hypertension as a community health problem was emphasized.

A scientific group on primary prevention of essential hypertension met in Geneva in September 1982 and recommended further research, including studies on blood pressure in childhood and adolescence (85). Blood pressure in children was the subject of further investigation and a report by a WHO study group in 1985 (86).

In developing countries taking part in the INTERHEALTH programme (see below), hypertension control was often linked with the control of diabetes mellitus. Research activities on blood pressure and dietary factors included a project coordinated by the International Society and Federation of Cardiology, supported by WHO, to clarify the influence of salt intake on blood pressure (INTERSALT), and a study coordinated by WHO and supported by the Japan Heart Foundation on cardiovascular diseases and dietary comparisons (the CARDIAC study), in which blood pressure levels and the incidence of cardiovascular disease were assessed against the intake of various nutrients. Countries participating in the joint WHO/World Hypertension League management audit project aimed to improve control activities in their communities. In November 1986, WHO cosponsored with the World Hypertension League a conference in Dakar on controlling hypertension in developing countries, with special reference to Africa (87).

WHO convened a meeting in Geneva in March 1987 on preventing cardiovascular diseases in the elderly. The meeting reviewed current knowledge and made recommendations on how to prevent cardiovascular diseases and enhance the quality of life for the elderly (88). A WHO manual on the subject was published (89). A WHO expert committee met in Geneva in November 1987 to discuss appropriate diagnostic technology in the management of cardiovascular diseases and made recommendations on the indicators for and the limitations of diagnostic techniques at various levels of health care and socioeconomic development (90).

The rapid advances in cardiology, particularly in the field of clinical cardiological investigations, led to a plethora of new techniques, terminologies and definitions. WHO and the International Society and Federation of Cardiology organized a series of task forces to prepare internationally accepted statements on standardizing and classifying nomenclature in this field.

National and regional epidemiology courses were organized by WHO in all regions to support specific local programmes. At the global level, WHO supported the cardiology federation's annual international 10-day teaching seminars, the first of which was held in Finland in 1982 and attended by 28 fellows from 22 countries who had already participated in one of the introductory courses.

Other noncommunicable diseases

Following the recommendations of the International Conference on Primary Health Care and evaluation of experience with chronic disease control in the community, the concept of a comprehensive, integrated programme for chronic noncommunicable diseases, as opposed to the traditional specialty-oriented approach, grew in acceptance. One of the points in favour of the integrated approach was the presence of a group of risk factors, common to many chronic diseases, which could be defined as 'lifestyle' risks. Mobilizing community action to address these risks required a new strategy, one that called for corresponding organizational changes.

At consultations organized during the 1978–1979 biennium by WHO headquarters and the Regional Office for Europe, and in preliminary discussions with national authorities and nongovernmental organizations, there was strong support for the integrated approach. This led to a comprehensive medium-term programme for chronic disease control being initiated, the design of which could profit from the experience accumulated by WHO in several of its programmes, especially by reorienting certain projects so that the results could be incorporated into the future development of that design.

A consultation in Geneva in March 1984 on risk modelling for noncommunicable diseases reviewed and summarized statistical methodology for assessing such risks in the community. It provided advice on how existing statistical models might be used to classify risks in the community, predict the effects of intervention, and provide information on cost-effectiveness.

A consultation in Geneva in December 1985 reviewed the scientific basis for the integrated prevention and control of major noncommunicable diseases and recommended methods for concerted action. Proposals and preliminary protocols from selected countries were reviewed at a meeting of the WHO Integrated Programme for Community Health in Noncommunicable Diseases (INTERHEALTH) in April 1986, at which time recommendations were made to standardize methodology and evaluation. A WHO international teaching seminar on the epidemiology, planning and design of INTERHEALTH programmes was held in Polvijärvi, Finland, in November 1986. The seminar provided training for national programme coordinators in the practical problems that emerge in planning, designing and implementing health promotion programmes for noncommunicable diseases. As a result of the seminar, a series of 18 demonstration programmes were initiated in 15 Member States in all the WHO regions. They included preventive activities among schoolchildren, and in most of the countries they were linked with district planning and management for primary health care.

At a meeting of INTERHEALTH demonstration coordinators in Stanford, California, in July 1987, reports on the programme's development in different regions were reviewed and ways to coordinate and manage it in the future established. Guidelines for developing protocols for the demonstration programmes were discussed and later finalized by the WHO collaborating centre in Stanford.

In October 1987, WHO convened a European conference in Varna, Bulgaria, for those taking part in the countrywide integrated noncommunicable disease intervention programme. Here, delegates discussed disease prevention and control. At an intercountry meeting in Alexandria in November 1987, representatives from 11 Member States of the Eastern Mediterranean Region outlined a plan of action to integrate noncommunicable diseases within primary health care.

A WHO expert committee on diabetes that met in Geneva during September and October 1979 emphasized the need to involve the community as well as the patient. It stressed the main health services for the diabetic should be at community level, and that preventive,

promotive, curative, educational, and research activities should all have their basis in primary health care (91).

Training health personnel and disseminating information to front-line health workers were promoted. WHO and the International Diabetes Federation jointly organized international seminars on the epidemiology and public health aspects of diabetes mellitus; the third such seminar, held in Cambridge, the United Kingdom, in July 1987, was attended by 52 participants from 36 countries. The organizations also jointly sponsored teaching seminars on laboratory technology in diabetes. The annual joint meetings of WHO and the Federation made it possible to coordinate diabetes activities and produce coherent medium- and long-term action programmes.

Community-oriented diabetes mellitus activities relying on a primary health care approach were initiated in some Member States. Different models of such a programme were developed and evaluated in Australia, Bangladesh, Cuba, India, Malta, the USSR, the United Kingdom, the USA and Yugoslavia. An intercountry project for developing models on diabetes education and control programmes was initiated in Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand with funding from the Government of Australia.

A WHO study group on diabetes mellitus that met in Geneva in February 1985 reviewed advances in the understanding and treatment of diabetes mellitus, and sought ways to use the increased scientific and technical knowledge of the disease to benefit diabetics. Its report included chapters on standardized diagnosis, diagnostic criteria, screening and classification of diabetes mellitus (92).

During 1986, the Organization initiated a research programme on health services for chronic diseases, including diabetes, in Brazil, Costa Rica and Venezuela, in conjunction with studies of how health services were structured and operated for the needs of the community.

The principal investigators in a WHO multinational study on vascular disease in diabetics met for a final time in Rome in September 1986 to review mortality data from 14 participating centres and to prepare the results of the final analysis for publication.

Stronger emphasis was placed on involving the community in preventing and controlling chronic respiratory disease, and closer cooperation pursued with the International Union Against Tuberculosis (IUAT) scientific committee on respiratory diseases. A joint meeting was held in Geneva in February 1981 to identify priorities for epidemiological and operational research within the framework of an overall WHO programme on respiratory diseases.

The first international course on epidemiological methods in chronic respiratory disease was held in London in January 1985, under the cosponsorship of WHO and IUAT. The practical problems of designing, standardizing and carrying out epidemiological studies on respiratory disease were emphasized.

In March 1987, two activities were organized jointly with the International Union against Tuberculosis and Lung Disease (the new name for IUAT, as noted earlier): a consultation on chronic respiratory diseases, at which the situation in different countries was reviewed; and a meeting to revise the international classifications of chronic respiratory diseases, formulate unified definitions and make recommendations on nomenclature and coding.

Guidelines for the further development of a chronic rheumatic diseases programme were drawn up at a joint meeting with the International League against Rheumatism in Geneva in January 1981. The Philippines was selected as the target country for a community-oriented rheumatic diseases prevention and control programme, jointly coordinated by national authorities, the International League, and WHO. In the Region of the Americas, collaborative studies

were carried out on the profile of patients with chronic rheumatic diseases who sought care in rheumatology and allergy clinics. Particular emphasis was placed on the degree of disability and dependency caused by these diseases, including their effect on functional and working capacity and, in allergic diseases, their relationship with risk factors in the environment.

A joint WHO/International League meeting in Geneva in May 1982 discussed methods to assess the extent of rheumatic diseases, uniform criteria for disease studies, community-oriented and model programmes, preventing disability, and specific activities to be encouraged. A joint task force meeting in Geneva in June 1987 reviewed activities on standardization, classification and nomenclature; specifically, the standardization of reference sera, the classification and standardization of radiological criteria, community control programmes and training.

In the field of human genetics, the programme concentrated on international collaboration in managing common genetic disorders and applying genetic knowledge, and also on developing the genetic risk approach to prevent and control certain communicable and noncommunicable diseases.

Operational research was initiated in seven centres – China, Cyprus, Greece, Italy (two centres), Thailand and the United Kingdom – to improve approaches to genetic disease control. This research aimed to determine the best ways to organize and deliver genetic services to the entire community; explore the possibility of establishing a comprehensive hereditary disease-control programme directed at all preventable genetic conditions; and develop and test approaches to evaluate and monitor such programmes. This experience was reviewed in Geneva in October 1985 by a WHO advisory group, which devised guidelines for initiating, organizing and delivering genetic services, and criteria for evaluating these services. The group also carefully considered the ethics surrounding the prevention and control of hereditary diseases.

To exploit recent advances in technology to control genetic diseases in developing countries, centres in Greece, Italy, the USSR and the United Kingdom cooperated in developing and simplifying DNA methods for diagnosis. DNA technology was extensively used at three of these centres for thalassaemia community control programmes, and resulted in a single nucleotide mutation, widespread in the Mediterranean area, being identified, and the synthesis of a specific oligonucleotide probe, which was tested in Sardinia, Italy, for practical use.

Foetal diagnosis of hereditary disease was reviewed by a joint WHO/Serono meeting in Geneva in May 1984. Delegates evaluated the experience and use of genetic services, and identified the need for an international collaborative study to evaluate the obstetric risk of methods employed for early foetal diagnosis. Continuing joint activities with the International Clearinghouse for Birth Defects Monitoring Systems – discussed at a joint meeting in Madrid in October 1987 – included an extension of monitoring work to regions not previously covered, and cooperation with Member States to develop screening programmes.

The Organization supported the development of international repositories for genetic disorders, including an updated listing in the publication *Repository of chromosomal variants and anomalies in man*. During the 1982–1983 biennium, an international repository was established in the USA to monitor global efforts to control hereditary anaemias; 27 centres in 10 countries collaborated.

An expert committee met in 1978 to discuss ways to control the smoking epidemic and pronounced that “the time had come for WHO and national health agencies to make a fresh and realistic assessment of their objectives” as there could no longer be any doubt among informed people that smoking was a “major and certainly removable cause of ill-health and premature

death” (93). It had to be recognized, however, that the tobacco industry would continue to present “a formidable barrier to smoking control”.

The committee reviewed the harmful health consequences of smoking, the socioeconomic implications of tobacco, the dynamics of the smoking epidemic, and strategies for smoking control, including public education programmes, legislation and restrictive measures. In addition to making specific recommendations to developing countries, the committee emphasized the need for WHO to stimulate collaboration in this area, and also expressed concern that the United Nations system and the World Bank had “as a whole not yet accepted the importance of their involvement in a world smoking control programme”.

An international clearing house for information on smoking and health became operational in May 1981. Its purpose was to collect: a) statistics on national tobacco and cigarette production, per capita consumption, smoking prevalence by age, sex, race, etc; and b) information on smoking control activities, including legislation, public information, educational approaches, health warning labels, statements of tar, nicotine, and carbon monoxide yield, advertising restrictions, and other action or voluntary agreements to reduce smoking.

Tobacco report, a WHO newsletter that appeared twice in 1981, became a quarterly publication in 1982. It was distributed free worldwide and provided readers, particularly in developing countries, with the latest information on smoking and health issues.

A WHO expert committee on smoking control strategies in developing countries met in Geneva in November 1982 to provide further guidelines for health authorities in those countries, bearing in mind: the various types of disease involved; the absence of smoking control legislation in most developing countries; the paucity of health education programmes; the lack of data on national prevalence rates; and the power of the tobacco industry (94). These guidelines proved instrumental in helping governments and nongovernmental organizations launch smoking control action. The financial contributions of various donor agencies, such as the Swedish International Development Agency and the Japan Shipbuilding Industry Foundation (through the Sasakawa Health Trust Fund), helped WHO significantly in its work in this field.

In discussing the expert committee’s reports on tobacco, the Executive Board was mindful of the economic importance of the tobacco industry and that in countries where the tobacco industry was a major foreign currency-earner, an anti-tobacco campaign spearheaded by the ministry of health was likely to have only minimal effect. The Director-General observed that while factors such as crop substitution and cost–benefit analysis were important, it was the medical profession that “had to shoulder its responsibilities and play the leading role in demonstrating that the behavioural and social changes needed to induce more people to give up the harmful habit of smoking could be promoted within the framework of the very real economic forces which every developing country had to take into account”.

WHO’s global activities on smoking and health were favourably considered by the Programme Committee of the Executive Board in the autumn of 1985; all Regional Offices carried out similar activities by the end of that biennium, albeit with differing scope and emphasis. A study of the social costs of tobacco consumption in developing countries, with projections to the year 2000, began in Brazil, Egypt and Thailand. This study was supported by the National Cancer Institute at the National Institutes of Health in Bethesda, USA.

Passive smoking was also regarded as a priority issue. The International Agency for Research on Cancer published a monograph that provided an insight into this socially and medically controversial problem (95). Smoking was banned at all WHO offices and smoking cessation

courses were held for staff at WHO and other United Nations organizations who wanted to give up the habit.

The Thirty-ninth World Health Assembly, in May 1986, adopted resolution WHA39.14, which reiterated recommendations made in earlier resolutions on the subject. Member States were urged to implement smoking-control strategies, while the Director-General was asked to: strengthen the programme on smoking and health, and mobilize support for it; coordinate activities with other organizations of the United Nations system; strengthen collaboration with nongovernmental organizations; support national smoking-control programmes; and ensure WHO played an effective global advocacy role in tobacco and health issues.

WHO collaborating centres continued their activities in the following areas: research in the pathomorphological classification of chronic nonspecific lung disease (Leningrad); reference and research in the study of diffuse connective tissue diseases (Paris); pathomorphological classification of rheumatoid arthritis and related conditions (Mainz, Federal Republic of Germany); and histological classification of renal diseases (New York).

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Health information support

Health literature services

The global WHO health literature programme was initiated in 1974. During the 1978–1979 biennium, it was decided to develop health-related information systems (HERIS) to fill coverage gaps, especially in developing countries. This international databank focused on public health problems, particularly in planning, managing and evaluating health services. Journals from developing countries were monitored, and so-called ‘fugitive literature’, such as government reports and institutional studies, was drawn upon. Plans for HERIS were endorsed by all regional offices and the information subcommittee of the global Advisory Committee on Medical Research. The concepts were also endorsed by the International Development Research Centre of Canada and the National Health Planning Information Center in the United States of America.

Plans for a WHO Document Information System (WHODIS) were prepared by headquarters in close collaboration with the regional offices at the same time that HERIS was initiated. These plans were submitted in various forms to potential users for comment, and a feasibility study was also undertaken. This led, in 1981, to WHO issuing a monthly list of its technical documents (*WHODOC: Index to WHO Technical Documents*) with a view to improving access to the information it produced.

The WHO Seventh General Programme of Work devoted a section to health literature services as a support element for international, regional and national health programmes. Steps were taken to increase awareness among health administrators of the essential function of health literature in transferring information, and to encourage the strengthening of national health literature systems by the WHO Office for Library and Health Literature Services and the WHO regional offices.

During the 1986–1987 biennium, access to bibliographic information on WHO publications and documents was upgraded and the Organization’s bibliographic databases were standardized. An integrated online library system was installed at headquarters. *WHODOC* was fully indexed in English, French and Spanish, and was now issued twice a month. New technology also enhanced WHO’s reference library activities, which were expanded to give staff guidance on how to better organize and transfer bibliographic information.

One aspect of health literature services that raised concern was the poor use of expert committee reports by Member States. Dr Mahler expressed “extreme disappointment” to the 73rd session of the Executive Board in January 1984 on learning that countries generally were not exploiting the extremely useful information contained in these reports. He felt that health authorities were being remiss; it would be possible, for example, for them to organize discussion groups to consider such reports and from such discussion to provide feedback to the Organization.

Efforts to strengthen regional and national health literature services varied in nature owing to the diversity of conditions in the different regions. There were, however, some activities common to all regions, such as: encouraging national health literature service policies; promoting new national and regional networks, and improving existing networks; bibliographic control of locally produced fugitive literature; continued training for health librarians; providing services for document delivery and to disseminate information; and organizing regional meetings and national workshops.

In the Region of the Americas, the well-established facilities of BIREME, the regional medical library in Brazil commonly known by its Portuguese acronym, served as a focal point for developing national and regional networks of health information centres and libraries. The *Index Medicus Latino-Americano* was an equally well-established source for relevant literature.

The Regional Office for Africa sponsored the first meeting of African medical librarians during the 1980–1981 biennium. WHO cooperated in producing a consolidated list of the periodicals held by health sciences libraries in Africa, with the aim of developing it into a major resource-sharing tool. Plans were made to develop an African *Index Medicus*. While African university libraries extended their role in delivering health information, it continued to be necessary for WHO to provide supplementary bibliographic and document services.

The Regional Office for South-East Asia overhauled its publishing methodologies during the period 1982–86, under the auspices of the Health Literature, Library and Information Services Committee. Regional and national meetings were organized to help establish national focal points and cooperative national health library networks. After two years of preparation, the first volume of the *Index Medicus for WHO South-East Region* appeared in June 1983. Libraries were encouraged to collaborate more with the national focal points of the health systems research and primary health care information networks.

The Regional Office for the Eastern Mediterranean developed a ‘list of sources for a basic medical faculty library’ following a survey of health libraries. The Government of Kuwait agreed to provide Medical Literature Analysis and Retrieval System (MEDLARS) searches to countries in this region. The regional health science library and information network, known as EMLIBNET, expanded to include the health science libraries of the Gulf States.

In the Western Pacific Region, the activities of the regional biomedical information programme continued to be directed towards strengthening national health library systems. The Government of Australia supplied bibliographic searches to developing countries.

A study undertaken in the European Region during the 1984–1985 biennium showed that documentation was often inadequate or not properly used to manage health services. Following this study, a meeting was held in Berlin in April 1985 to discuss providing information and documentation for health management.

Global experience was drawn upon to prepare a manual to assist health administrators and senior information personnel in developing countries plan national health literature services (1). A manual was issued to assist health librarians in developing countries manage serials (2). Serials played an important role in health libraries, not only because of their importance as sources of health information, but also because of the funding required to maintain them; up to 80%, occasionally more, of the total library budget for collections was absorbed by subscriptions to serials.

WHO publications

Just as health-related information systems (HERIS) and the WHO Document Information System (WHODIS) were intended to complement existing information services, the development work that had gone into *World Health Forum: An international journal of health development* represented an attempt to fill a gap, not only in the range of WHO publications and periodicals, but also in the coverage of national and international medical and public health journals. To provide an example of what this new journal might contain, a trial issue was prepared and widely circulated within the Secretariat, both at headquarters and in the regions. The response was favourable, and on the basis of the many useful comments and suggestions received, an improved trial issue was prepared for circulation to several thousand selected recipients.

The Executive Board discussed the *Forum* in January 1981, and favoured its regular publication in Arabic, Chinese, English, French, Russian and Spanish. As the overall publications budget remained fixed, cutbacks in other publications were required; notably, the *WHO Chronicle* went from 12 issues in 1980 to six in subsequent years. The *Forum* was issued quarterly and a total of 40 000 copies were produced during the 1982–1983 biennium. In 1983, the Organization authorized a non-profit-making organization to publish an Italian edition.

A competition inviting entries for articles to be published in the *Forum* was organized in 1987; 35 000 posters in the six official languages of WHO were distributed and contributions submitted from all over the world. To provide managers and other potential users of health systems research with convincing evidence of its efficacy, information from a series of case-studies was collected to illustrate how these results had proved useful to decision-makers, care providers and the general community in their efforts to improve health care delivery.

For the *Bulletin of the World Health Organization*, the 1978–1979 biennium was a period of important reorientation as it sought to provide the type of content needed to help achieve health for all by the year 2000. The ‘Update’ section was introduced in the January 1978 issue to provide concise and authoritative articles on a wide range of medical and public health matters. Articles from the *Bulletin* were increasingly republished in other journals to ensure important technical information was disseminated as widely as possible.

To ensure the *WHO Chronicle* was keeping readers informed of WHO activities and publications, a questionnaire was circulated to the 20 000-plus recipients of the four language editions. On the basis of comments and suggestions, the *Chronicle’s* content was adapted to reflect the expressed wishes of its readers. An air-mail edition was introduced to accelerate delivery to readers outside Europe.

For the non-periodical technical publications, such as the *Public Health Papers*, *WHO Offset Publications* and the nonserial publications, the selection of titles was measured against increasingly strict criteria, namely the relevance of the material to the needs of Member States, particularly the developing countries.

A major development in the Organization’s publishing programme was the trend towards regionalization, including making funds available to translate WHO publications into local languages, for which a Local Language Subsidy Scheme was established at WHO headquarters.

The strong programme of the Regional Office for Europe – it already published *Public Health in Europe* and *Regional Publications, European Series* – was expanded to include a new series, *EURO Reports and Studies*, which carried final reports of meetings (hitherto issued only as documents) and other material of lasting value. The European Region also published numerous books on a wide range of subjects, including *Infectious diseases in Europe – a fresh look*;

Drugs for the Elderly; Biological effects of man-made mineral fibres; Demographic trends in the European region; and The planning of health services: studies in eight European countries.

In the Region of the Americas, PAHO's large and long-established publications programme benefited from new institutional arrangements that permitted it to respond more effectively to priority requirements and foster closer coordination between PAHO and WHO publications. The most important of these arrangements was the PAHO/WHO Publications and Documentation Service in Mexico, which took over production of the *Boletín de la Oficina Sanitaria Pan Americana* and the translation into Spanish of WHO technical publications.

In the Region of the Americas, national resources continued to be mobilized for publishing health information, with direct technical cooperation with Member States emphasized. The *Epidemiological Bulletin*, which was started in 1980, disseminated information and quality-related norms, methods and standards for compiling and analysing quantitative health indicators. An editorial board was established for PAHO Scientific Publications and in 1987, 12 titles were issued in the new *Technical Papers* series that aimed to disseminate health information quickly and economically.

Publications on regional concerns included two volumes of *Health Development in Africa; The Eradication of smallpox from Bangladesh; and The health aspects of food and nutrition: a manual for developing countries in the Western Pacific Region of WHO.*

In the Eastern Mediterranean Region the *Epidemiological Bulletin* and a new periodical, *Drugs Digest*, included articles in both Arabic and English; the *Health Services Journal*, another new publication, carried articles in Arabic, English and French. Many texts were issued as part of the regional Arabic programme. Some of these originated in the region, while others were translations of WHO publications issued in other languages; e.g. volume one of the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*, ninth revision. All were selected for their relevance to regional needs and conditions.

The South East Asia Region established two formal series of publications: the SEA Regional Publications Series; and the SEA Technical Publications Series. Several titles were published in each series. A children's comic book on immunization was published and translated into several languages, and used as the basis for immunization drives in India, Nepal and Burma. A significant development was the Indian reprints scheme, whereby Indian publishers were licensed to republish WHO books with a view to making them cheaper and more accessible to the local population.

During the 1984–1985 biennium, the Western Pacific Region initiated a new *Western Pacific Series*, initially dedicated to *Standard acupuncture nomenclature*. The activities of the regional publications programme intensified in 1986 when a publications committee was established, along with two new series: *Reports and Studies*, and *Education in Action*.

In 1987, a headquarters publication committee reviewed all material proposed for publication in the light of programme objectives and intended readership. It was emphasized that published material should provide practical guidance to Member States. Such example were: *The community health worker*, a revised edition of the best-selling *Primary health worker* (1977); the reprinting of 6000 copies of its companion *On being in charge*; a second edition of *Guidelines for training community health workers in nutrition* in a newly designed format; and the third of the WHO publications on the basic radiological system, *Manual of radiographic technique*.

As an economy measure, publication of the *WHO Chronicle* was suspended for a period of at least three years with the completion of volume 40 (1986), while the number of pages of other WHO periodicals was reduced. The composition of the *Bulletin of the World Health*

Organization was changed to include more articles of direct public health interest and, in common with the *World Health Forum*, some of the information previously published in the *WHO Chronicle*. A new quarterly journal, *WHO Drug Information*, was first published in 1987; three of its issues each year contained the lists of proposed and recommended International Non-proprietary Names for Pharmaceutical Substances previously published as supplements to the *WHO Chronicle*.

There were renewed efforts to brighten the presentation and design of WHO publications and to make use of new technology. *World Health Forum* was one example of this, and in two publications, *Intersectoral action for health* and *Tropical disease research: a global partnership*, typography and graphic elements were changed to particularly good effect.

Technical terminology

Early in the decade, the recognition that standardized terminology was crucial for clear and unambiguous health and biomedical communication led to a study of ways to improve the process. Investigations at the end of 1979 indicated a proposed central terminology bank to provide Member States, regional offices, and technical and language staff at headquarters with an instantly accessible source of constantly updated multilingual information would be unjustifiably costly. Accordingly, terminology work was reorganized to make maximum use of electronic text-processing equipment. The Organization also arranged for the Terminology Bureau of the Commission of the European Communities in Luxembourg to enter and maintain all WHO-developed terminology in its large, multilingual computer term bank, free of charge.

Using existing word-processing equipment instead of costly mainframe computers led to the WHO Terminology Information System (WHOTERM) being developed. This system became operational at headquarters in December 1982, and was gradually extended to those regional offices that requested it and had the necessary equipment. As the decade progressed, further technical refinements were made, such as the automation of routine work on terminology, leading to a big reduction in the time required for such work.

WHO played a major role in a joint project with the Council for International Organizations of Medical Sciences on the international nomenclature of diseases, carried out in accordance with resolution WHA29.35. The purpose of this project was to develop a single standardized name for every disease, along with an extensive cross-referenced list of synonyms. One volume, on diseases of the lower respiratory system, was completed during the 1978–1979 biennium. Lack of funds meant the project progressed more slowly than planned during the 1980–1981 biennium. With financial support from the Kuwait Foundation for the Advancement of Science and the Kuwait Ministry of Health, and help from certain nongovernmental organizations, two further volumes, on mycoses and on viral diseases, were published during the 1982–1983 biennium. With continued financial support from Kuwait, further volumes were published; on bacterial diseases in the 1984–1985 biennium, and parasitic diseases in 1986–1987. Four other volumes, on cardiovascular diseases, diseases of the female genital system, diseases of the urinary and male genital systems, and diseases of the digestive system, were completed in draft form before the end of the decade.

Distribution and sales

New sales promotion measures during the 1976–1977 biennium brought WHO publications to the attention of a wider global readership and were continued into the next biennium. More publicity leaflets on individual subjects were produced and distributed, and every opportunity was taken to exhibit WHO publications at international or national conferences and book fairs.

Mailing lists were computerized by the spring of 1982; word-processing facilities made it possible to regularly update the supplement to the general catalogue. Building on the computerization of address lists and other aspects of distribution and sales activity, the Organization was able to pinpoint potential audiences for specific publications, and monitor and adjust promotional efforts. Computerization made it possible to compile lists specific to country, region or individual medical specialty, thereby using resources more efficiently.

In order to adopt a consistent approach to free worldwide distribution, mailing lists were screened and the names of individual recipients, especially of periodicals, eliminated in favour of the global network of central collections of WHO publications in depository and consultant libraries and documentation centres.

Securing facilities, particularly in developing countries, where WHO's publications could be printed on more advantageous terms, reduced printing costs and the sale price of publications. As a result of this and other factors, revenue from sales decreased from about US\$ 5 million in the 1978–1979 biennium by some US\$ 400 000 in 1980–1981. The effects of the worldwide economic recession during the 1982–1983 biennium led to a further decrease in sales to US\$ 3.5 million. The bulk of sales continued to be made in Western Europe (~45%) and North America (~33%).

During the 1986–1987 biennium, a new approach was taken to preparing sales catalogues. Rather than annual or cumulative listings of bibliographic data on WHO publications, a seasonal catalogue was issued twice a year in English and French. A short description of the contents of each publication offered for sale, given in both the catalogue and newly developed thematic leaflets, enabled the reader to judge how interesting the title might be. As a direct result of these and related marketing efforts, sales revenues increased significantly, by 53%. Turnover for the biennium in real terms was more than US\$ 4 million, 40% higher than the 1984–1985 biennium.

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Support services

Personnel

At the beginning of the decade, WHO's total staff, excluding that of the Pan American Health Organization, numbered 4226. By the end of the decade this number had risen to 4384, having peaked at 4483 at the end of 1984.

After the governing bodies had urged a more balanced and equitable approach to recruiting professional and higher-graded staff, and having considered a report by the Director-General on the subject, the 63rd session of the Executive Board adopted resolution EB63.R25 approving the following proposals of the Director-General: to establish, with a view to improving the geographical distribution in selecting and appointing staff, desirable ranges, similar to those applied by the United Nations, but adapted to WHO's membership and the size of the Secretariat; to set specific targets up to the end of 1981 for recruiting nationals of certain Member States; and to set specific targets for recruiting women. The Thirty-second World Health Assembly, however, requested that the 65th session of the Board re-examine the concept of desirable ranges, while the Regional Committee for South-East Asia expressed concern about the adverse effects likely to result from implementing that concept, and urged the whole matter be reconsidered.

The decisions taken on WHO's structures in the light of its functions (see Chapter 2) led the Health Assembly to request that the functions of the regional offices and WHO headquarters be redefined and organizational arrangements and staffing adapted to ensure adequate and consistent support to Member States. WHO was asked to review how national and international WHO field staff were engaged to ensure their full involvement in collaborative national programmes.

In the 1984 report to the Executive Board on the geographical representation of WHO staff, three encouraging trends were highlighted: the target set by the Board and the Health Assembly – 40% of all persons appointed to posts subject to geographical distribution should be nationals of unrepresented or under-represented countries – had been met and maintained; the number of nationals from over-represented countries had decreased significantly since the previous report to the Board in 1982; and in the same period, the number of unrepresented countries had not increased, even though six new Member States had joined the Organization.

During the period October 1984 to October 1986, the number of unrepresented countries had decreased by three while, despite the addition of two new Member States, the number adequately represented had increased by five. As a consequence, the number of countries represented on the staff was higher than at any time.

In another positive development, the target set in 1979 to have 20% of all professional and higher graded posts in established offices held by women was achieved during the 1984–1985 biennium. This led the Thirty-eighth World Health Assembly, in May 1985, to increase the target proportion from 20% to 30%. The Fortieth World Health Assembly, in May 1987, urged Member States to assist the Director-General by proposing women candidates for long- and

short-term assignments and by encouraging greater participation by women in technical meetings (resolution WHA40.9).

General administration and services

Administrative management services

The objective of administrative management services was to support programme delivery throughout the Organization by identifying opportunities to improve managerial and administrative effectiveness. In the main, this was achieved by planning and conducting management surveys at the request of programme managers at both global and regional level.

As part of the drive to cut costs, rationalization studies were conducted on the cost-effective use of resources in activities at both headquarters and in the regional offices. These surveys, which led to specific and detailed proposals for several posts not to be established and others to be disestablished, covered such subjects as: budget and finance functions; organizing and managing publications and translation services; building maintenance; records management; and rationalization of secretarial services. The roles of headquarters and regional components in global programmes on health and the elderly, accident prevention and appropriate health care technology, all of which were administered out of the Regional Office for Europe, were also examined.

Office accommodation

Various improvements and alterations to accommodation at both headquarters and the regional offices took place during the decade. At headquarters, part of the V Annex building (18 offices) was demolished during the 1980–1981 biennium to make way for a road that was built by the Canton of Geneva, on whose land the building stood. An extension to building L was completed in June 1982.

To restore the structural safety of the main headquarters building, where the pre-stressing tendons in the concrete beams beneath the kitchen were exposed to corrosion due to water seepage, the Thirty-sixth World Health Assembly (resolution WHA36.17) decided to remove the kitchen, the source of the seepage, and the restaurant from the eighth floor to a new building, to be constructed in the grounds near the Executive Board block. Work started on the new building in November 1983 and was completed in April 1985. Work on restoring the structural safety of the eighth floor was completed in early 1986. The space previously occupied by the cafeteria and its facilities was converted into offices, and staff were moved there from elsewhere in the main building. The space thus vacated was used to satisfy part of the accommodation requirements of the Special Programme on AIDS.

The construction of an annex to the main building of the Regional Office for the Western Pacific was completed in 1978. Two additional floors were added to this building in 1981. Improvements to the main building included a warehouse and covered parking space.

The acquisition of a computer by the Regional Office for Europe in 1979 made it necessary to rent office accommodation, pending consideration of a proposal to build a permanent extension to the Regional Office building. With financing provided by the Government of Denmark, a three-storey annex to the Regional Office for Europe was ready for occupancy in January 1984.

In order to relieve the cramped conditions in certain sections of the Regional Office for Africa and also to provide additional office space, an extension to the main building was authorized during the 1984–1985 biennium and construction completed in early 1988.

An extension to the Regional Office for South-East Asia complex was completed in 1987.

The construction of a building for the Caribbean Food and Nutrition Institute, jointly financed by WHO, PAHO, and the Government of Jamaica, was completed in Kingston in July 1985.

Budget and finance

The Executive Board, during its January session, recommended how much to appropriate for the forthcoming biennium, which the World Health Assembly in May, would decide upon. The Assembly generally agreed to the amount recommended by the Board: in 1979, the last single-year biennium, US\$ 208 million versus US\$ 208 million; in 1982–1983, US\$ 539 million versus US\$ 523 million; in 1984–1985, US\$ 582 million versus US\$ 582 million; and for 1986–1987: US\$ 605 million versus US\$ 616 million.

As the Organization faced considerable financial constraints throughout the decade, much of the Board's attention was given to easing the impact of external economic factors on WHO's budget. At the Board's January 1978 session, the Director-General said the Organization was experiencing "an unbelievably difficult financial period". Board members had suggested various strategies, including: adopting a system of special drawing rights; using a "basket" of currencies; host countries granting a special rate of exchange that would favour the Organization; and making optimum use of the Organization's resources by merging regional offices and moving headquarters to another country. As the Organization had already absorbed "enormous budgetary losses" since 1971, there remained little capacity for WHO to absorb additional significant currency fluctuation losses.

The falling value of the United States dollar relative to the Swiss franc led the Board and the Assembly to authorize the Director-General to use casual income to reduce the adverse effects of currency fluctuations. The amount in question rose from US\$ 15 million during the 1980–1981 biennium to US\$ 41 million for the 1986–1987 biennium. Casual income was accrued when Member States made timely payments of their budgetary contributions, preferably in total at the beginning of the financial period rather than in two equal instalments.

The Board and the Assembly also agreed that the Director-General could use the resources of the Director-General's Development Programme to respond to their suggestions to adjust any imbalances or deficiencies, particularly at the global and interregional level, identified when the proposed programme budget was reviewed. These changes were reviewed by the Health Assembly in even-numbered years, along with important changes made to regional programmes. For example, following comments and suggestions made by the Board and the Health Assembly on the proposed budget for 1986–1987, funding was increased for several programmes: emergency relief; health systems research; essential drugs and vaccines; and integrated disease control and monitoring. An amount of US\$ 1.7 million was allocated for these programmes from the Development Programme, which had been established earlier in the decade to provide the Director-General's office with funds to stimulate innovative ideas.

Late receipt of contributions from the Member States also hampered the Organization's programme planning; some Members remained in arrears for many years. As a rule, 80-plus Members paid their current-year contributions in full, while nearly 50 made no payments at all during the year in question. By the end of the decade, both the Executive Board and the World

Health Assembly passed resolutions expressing deep concern at the “alarming deterioration” in contribution payments by Member States. The rate of collection at the end of 1986 was 72%, the lowest rate since 1950. As of 31 December 1987, arrears in contributions for 1986 and 1987 amounted to the unprecedented figure of US\$ 56.26 million.

The combination of the falling value of the United States dollar and late payment and non-payment of contributions created a crisis in 1986 that forced the Organization to take exceptional measures to meet its financial obligations. The expected shortfall in income for the regular budget for 1986–1987 was estimated to be US\$ 35 million. This led the Director-General to withdraw provisionally that amount and to transfer these funds to a reserve account. As the prospects for 1988–1989 did not look any better, the programme budget for that period would assume a shortfall of about US\$ 50 million.

Introducing this item to the 79th session of the Board in January 1987, Dr Mahler recalled the Old Testament story about the king who stopped providing straw for his servants to make bricks, ordering them to gather their own, but on no account to produce fewer bricks. Similarly, he continued, “assessed contributions were not given to the Organization’s servants, yet WHO was expected to provide the same level of programme activities as before, or an even higher level”, thus explaining why he had labelled his submission a “phantom programme budget” (see Chapter 2).

He said WHO was being victimized in two ways. First, “it was being victimized precisely because of its good fiscal management, which was fully recognized everywhere. Yet that was the justification given for WHO’s large share of delayed contributions. The second cause of victimization was that WHO ... found itself in the current difficult situation because it was considered to be part of the United Nations system.” At the time, the total money appropriated by the United States for some 46 international organizations, including WHO, as explained by the Board member from that country, was “far below the amount necessary to meet those demands”. Priority was given to those agencies that might actually cease functioning because of lack of payment. Being one of the more “financially stronger institutions of the United Nations system”, the payment to WHO “had had to be delayed”. This was not to be seen as a negative judgement on WHO but rather as a “tribute to the financial soundness of that institution”.

Noting that the contingency plans could not be ideal as they had arisen out of crisis management, the Director-General proposed that the Board continue over the year, through its Programme Committee, to look again at those plans and to improve them as necessary. He emphasized that, over the years, every opportunity was offered to the Board to increase the transparency of programme budgets.

The Director-General used his introduction to his 1982–1983 biennium budget proposals to comment on the relationship between programme budgeting and programme development. He called for “renewed efforts ... to ensure that WHO’s direct support to Member States actually takes the form of genuine cooperation rather than the provision of assistance, and that the issues for such cooperation are derived directly from those issues for action arrived at through the collective decisions of Member States”. An important vehicle for achieving this was programme budgeting of WHO resources at the country level. There was sufficient time after the biennium budget had been approved by the Assembly for countries to review their specific needs “within the budgetary ceilings allocated to them”.

As matters had not improved by the time the 1986–1987 programme budget was prepared, new managerial arrangements were introduced to govern the programme budgeting of WHO resources at country level. Each government had to be accountable to fellow Member States. The Director-General said this implied “the establishment of national accounting controls in order

to be in a position to provide sound evidence that WHO's resources have indeed been used for the intended purpose, measured for example by the output of the activities or by the degree of achievement of the pre-set targets". Government accountability also required regional committees and the Executive Board to fulfil the monitoring role vested in them by the World Health Assembly (resolution WHA33.17).

These new arrangements were not met with universal enthusiasm. Some governments, continued the Director-General, were not yet accustomed to the idea of using WHO's resources in such a focused and forceful way, and still wanted to use them for gap-filling equipment and supplies, and *ad hoc* fellowships in foreign lands. Also, some staff had displayed feelings of insecurity and even deep anxiety lest technical cooperation degenerated into hand-outs of WHO's funds for indiscriminate use by Member States to the detriment of the Organization's technical functions.

In his introduction to the programme budget for 1988–1989, the Director-General indicated that, with "a very few exceptions", programme budgeting of WHO's resources in countries was still not being properly used. Too few countries in too few regions were making the most of the new managerial framework agreed to earlier in the decade. Country planning figures were still considered by too many ministries of health to be "their acquired property, for use in any way they feel fit, rather than as collective property for the implementation of collective policy".

In response to the unfavourable situation, a new type of audit was introduced, a financial audit in policy and programme terms, which aimed to determine how decisions to use WHO's resources were taken; to what extent joint government/WHO activities complied with the collective policy; and what those activities had achieved. A few audits had taken place on a trial basis. These, and information derived from more conventional audits and from other sources, had revealed "widespread, inadequate programme management beneath the veneer of administrative and financial correctness", the Director-General said. Among the many problems, some had been noted before. Many programme activities, for example, bore little or no relationship to WHO's collective policy, and there were too many unplanned fellowships and cases of fellows not being properly used on their return. Some new problems were also uncovered; reporting requirements for those who received research grants were not being rigorously applied, and there was little evidence of how research findings were being used.

Despite these and other shortcomings, Dr Mahler reiterated his "profound commitment to decentralized management, on condition that it takes place in full conformity with the collective policy defined by the Executive Board and the World Health Assembly, relating not only to technical matters, but also to the functions, related structures and managerial processes of the Organization".

The adverse effects of an unstable economic and monetary situation had already led in 1975 to the Board (resolution EB55.R23) requesting that the Director-General employ all means at his disposal to develop increased resources from external sources to augment WHO's integrated health programme. Established in 1960, the Voluntary Fund for Health Promotion was one of the most important sources of extrabudgetary funds for WHO. It included a general account for undesignated contributions, and special accounts for smallpox eradication, medical research, community water supply, malaria, leprosy, yaws, cholera, assistance to the least developed among developing countries, an expanded programme on immunization, disasters and natural catastrophes, miscellaneous designated contributions, and any others that might be placed in the Fund by the Executive Board or the Health Assembly. In 1981, the special account for the cholera programme was changed to a special account for diarrhoeal diseases including

cholera. The Health/2000 Resources Group was established in 1979 to advise on how to mobilize and rationalize bilateral and multilateral resources to meet the Organization's goal of health for all by the year 2000 (see Chapter 3).

By the end of 1975, about US\$ 110 million had been received since the inception of the Voluntary Fund. The amount channelled through this fund reached US\$ 32 million in 1975, and remained at about US\$ 40 million annually for the next 10 years. In 1986, US\$ 52 million was received, and in 1987 the figure was US\$ 62 million; the two-year combined total represented a 55% increase in contributions from the previous biennium. A major reason for this rapid growth was the universal recognition of the need to control the spread of AIDS, with development agencies taking exceptional measures to mobilize funds expeditiously to support WHO's global programme; a total of US\$ 32.7 million was contributed by various donors to the relevant trust fund.

Among the largest contributors to the Voluntary Fund were Australia, Belgium, Canada, Denmark, the Federal Republic of Germany, Italy, Japan, Kuwait, the Netherlands, Norway, Saudi Arabia, Sweden, Switzerland, the United Kingdom and the USA.

Other important financing sources included organizations within the United Nations system (the United Nations Development Programme; the United Nations Population Fund; and the United Nations Environment Programme) and trust funds (the Special Programme for Research and Training in Tropical Diseases, the Onchocerciasis Control Programme, and the Sasakawa Health Trust Fund). Also included in the category of 'other' sources was the budget of the Pan American Health Organization. The funding total available from other sources was significant. By 1983, the Director-General was able to announce to the 71st session of the Executive Board that these funds were expected to account for "slightly more than the regular budget". At that time, he also pointed out some of the Member States' responsibilities for external funding. In his view, for example, World Bank investment in health would increase considerably in the future, provided Members continued to abide by the policies adopted by WHO and to develop managerial credibility with the Bank in applying such policies. Similarly, the outlook from the United Nations Children's Fund was promising. With regard to the United Nations Development Programme, while its administration was enthusiastic about WHO's policies, it had to abide by the priorities set by its Member States. It was up to ministries of health, therefore, to persuade their governments that health was important to social and economic development.

Equipment and supplies for Member States

The decade began with the Organization buying supplies and equipment for the 1978–1979 biennium with a record-high value of US\$ 74.1 million. The main observed trends characterizing the steady growth were: a marked increase in local purchases by Regional Offices in the context of technical cooperation among developing countries; inflation running into two digits in many industrialized countries, and a falling exchange rate for the dollar, resulting in higher commodity prices and shipping costs; and an increase in the supplies and equipment component of projects. These and other factors contributed to a steady growth in the cost of supplies and equipment, which by the end of the decade amounted to US\$ 140.1 million.

More than half of all procurements were financed from extrabudgetary funds. The more noteworthy operations changed from biennium to biennium and included:

- 1978–1979: emergency assistance to the malaria eradication programme in Turkey; supplies and equipment to the Lao People's Democratic Republic and Viet Nam;
- 1980–1981: emergency assistance following natural or other disasters to Algeria, Burma, Gambia, Italy and Lebanon in the form of drugs, vaccines and other medical supplies;
- 1982–1983: supply of chloroquine phosphate tablets for the malaria programmes of 10 African countries; drugs and hospital equipment for the leprosy programme in India;
- 1984–1985: procurement of high-technology medical equipment for China; support to the long-term programme run by the Office of the United Nations High Commissioner for Refugees in Cyprus;
- 1986–1987: procurement in support of the Onchocerciasis Control Programme in West Africa.

Automation and computerization were increasingly relied on to ensure timely delivery, lowest cost, high quality, reliability and standardization. The computerized supply services system, which became fully operational in mid-1984, led to a faster response time and requests from Member States being handled more efficiently. The new system also permitted better comparison of prices and better control over delivery lead times.

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