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POSITIONING PREVENTION IN  
HEALTH SYSTEM REFORM  
  
A FOCUS ON INTEGRATED  
NONCOMMUNICABLE DISEASES PREVENTION

Report of a Consultation with Regional Advisers on  
Integrated Prevention of Noncommunicable Diseases

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## **1. PURPOSE OF THE CONSULTATION**

1.1 The evolution of the various WHO initiatives in noncommunicable diseases (NCD) has had to contend with rapid socio-economic changes. During the last 20 years, the health systems in most countries have undergone profound transformations which mirrored demographic, geopolitical and socio-economic changes, and the shrinking resources of national and international development agencies to address the mounting global burden of disease. That WHO was able to make major initiatives in NCD prevention throughout this period attests to the priority which the issue commands at regional and country levels as well as to the quality and the scientific basis of its policies and programmes.

1.2 The process of health care reform which is underway in many countries provides a unique opportunity to raise the priority for prevention in the policy agenda of all levels of government, as well as in that of international health and economic development agencies. Underlying health care reform and policies to diminish inequities in health are the need to control health care expenditures and to seek alternatives for cost-effective mechanisms for the delivery of health promotion, disease prevention and health care services. These are areas where NCD prevention strategies have a major contribution to make to the health systems of member countries.

1.3 To take advantage of the opportunity as well as to respond to the financial constraints which are now being experienced by WHO, the NCD Division, after discussion with the NCD Regional Advisers organized a Consultation to:

- Examine accomplishments to date and challenges for the future.
- Share progress on ongoing activities.
- Identify opportunities for enhanced collaboration between WHO Headquarters and the Regional Offices.
- Develop plans for integrated programmes for NCD prevention and control in the interest of efficiency and sustainability of activities within the scope of available resources.

## **2. NONCOMMUNICABLE DISEASES: A MAJOR GLOBAL HEALTH BURDEN**

### **2.1 The burden of noncommunicable diseases**

2.1.1 Noncommunicable diseases (NCD) account for up to 40% of all deaths in developing countries, and almost 80% in industrialized countries, where cardiovascular diseases (CVD) are the first cause of mortality, and cancer the third. The major NCDs - CVD, cancer, and chronic respiratory diseases are responsible for some 23 million deaths each year, of which more than half occur in developing countries (Table 1).

2.1.2 NCD are costly, both in economic and in social terms. This is particularly true in developing countries, many of which still face a double burden: the newly-emerging health problems of an aging population, and continuing high rates of communicable disease. Nevertheless, it is possible for the burden to be lightened: it is estimated that 50% of all CVD and at least 30% of cancers are preventable.

## 2.2 Mandate from the World Health Assembly, Executive Board and Regional Committees

2.2.1 The World Health Organization for over 30 years has been in the forefront of the fight against NCD which also contribute considerably to long-term disability of affected persons and consequently deteriorate their and their families' quality of life. To address issues of disease management, quality of care and palliative care, a number of disease specific programmes (CVD, Cancer, Diabetes, Oral Health, Chronic Rheumatic and Chronic Respiratory Diseases and Genetic Approaches for prevention of NCD) have evolved in WHO to support development of NCD initiatives at community, regional and country level. WHO also played a central role in initiating and providing technical and policy and support to the review of the scientific evidence of NCD prevention.

2.2.2 In years past, the World Health Assembly (WHA) has proclaimed through resolutions the importance that it attaches to NCD prevention and control and more specifically to integrated approaches for NCD prevention. Two landmark resolutions passed in 1985 (WHA38.30) and in 1989 (WHA42.35) state the importance of promoting the prevention of CVD as an example for other NCD, foster community studies aimed at joint control of risk-related NCD at the community level, and sanction the use of intersectoral and integrated approaches to prevention (Annex B).

2.2.3 A number of other resolutions dealing with specific diseases demonstrate the priority that the WHA and the Executive Board has attached to NCD. A sample of selected resolutions is given in Annex B, as follows: CVD: WHA36.32 (1983); Diabetes: WHA42.36 (1989); Cancer: WHA35.30 (1982); Rheumatic diseases: WHA29.66 (1976); Oral Health: WHA42.39 (1989); (Brief description of these programmes' activities, is provided below in section 7).

2.2.4 The WHA resolutions taken as a whole provide guidance on the nature of strategies endorsed by the governing body of WHO; namely: intensive collaboration with countries to support development of preventive services, foster relations with international professional and health organizations concerned with NCD, promote within the WHO close technical collaboration among the various programmes supportive of prevention and control goals, promote relevant research in support of programme actions, promotion of standard methods and approaches for prevention and care and for training, and mobilization of extra budgetary resources. These set of strategies clearly emphasizes the importance of integration and is currently relevant to guide further strategy development of the NCD programme in WHO Headquarters and Regions.

## 2.3 Foundations for monitoring trends of CVD and other NCD: The Monitoring Cardiovascular Diseases Programme (MONICA)

2.3.1 In a relatively short period of time, a number of pioneering initiatives have been started under the leadership of WHO. The establishment of Myocardial Infarction and Stroke Registers in the 1970s and the launching of the MONICA Project (MONItoring of CARDIOvascular diseases) in the early 1980s were major accomplishments which contributed significantly to the pool of scientific methods to document and study the occurrence of cardiovascular disease and its biological and environmental determinants.

2.3.2 The MONICA Project collected information over a period of 10 years on mortality, incidence and case-fatality of coronary heart disease (CHD) and stroke and the prevalence of CVD risk factors throughout a network of 32 centres in 21 countries, for the most part industrialized. The data is unique in several respects. The MONICA data permits investigation of basic issues including

estimation of the relative contribution of lifestyle versus medical interventions to the changing patterns of CVD in participating countries. The fact that it included women, when most CVD studies have not, makes the data extremely relevant to address highly topical issues in women's health agendas.

2.3.3 The MONICA pioneered the methodology for standard population surveys of risk factors. The methodology developed for the project may be modified for use in needs assessment packages in less developed countries. The project served to train health professionals in the participating countries. The network of research centres which has been established is a key asset for WHO with potential to sustain preventive interventions in the areas and communities covered by the MONICA project. The MONICA publications present an opportunity for WHO to draw attention to the public health value of WHO-supported research and to raise the visibility of the NCD Programme.

#### 2.4 The Comprehensive Community Cardiovascular Control Programme (CCCCP): Organizational and scientific basis for prevention

2.4.1 The CCCCCP Programme initiated in 1974 pioneered the application of preventive knowledge in CVD to clinical and public health settings. The programme built upon a network of myocardial infarction (MI) registries and activities of the CVD Unit, first established in WHO in 1959. The Programme was the first major NCD preventive initiative of WHO and created a bridge between the biomedical, clinical and epidemiological research on the one hand, and national health policy and health care on the other. Over a 10-year period, 39 developed and less developed countries participated to varying degrees in testing the feasibility of prevention of coronary heart disease, hypertension control, stroke management and rheumatic fever and rheumatic heart disease control programmes, in the community.

2.4.2 The significance of the CCCCCP is several-fold. In the first place the Programme was in some way the precursor of the INTERHEALTH and the CINDI Programmes (discussed below) which have become major instruments to disseminate prevention knowledge at community, regional and country levels. The experience from the CCCCCP served to design future interventions with a public health perspective, rather than individual prevention approaches in clinical settings. Based on the experience with CCCCCP, the next generation programmes were designed to emphasize: the practical aspects of programming at the community and country levels; the importance of early strategic planning in the designing phase for the institutionalization and sustainability of the long-term interventions once the initial phase of demonstration funding is finished; and the need for macro-interventions, at the regional and country levels to make gains in tobacco control, healthy diets and physical activity.

### 3. PROGRAMMATIC AND POLICY BACKGROUND FOR AN INTEGRATED APPROACH TO NONCOMMUNICABLE DISEASES PREVENTION

#### 3.1 Scientific basis

3.1.1 Epidemiological studies in the 1970s and early 1980s defined that the major risk factors for CVD (tobacco, unbalanced diet and obesity, physical inactivity, alcohol abuse) may also be associated with other NCD such as some types of cancer, chronic obstructive lung diseases, diabetes, etc. The realization that these risk factors were common to the major NCD and that they are rooted

in lifestyles and unhealthy environments which can be modified in the community, paved the way for the landmark 1985 Resolution of World Health Assembly on NCD. This Resolution called on Member States "to apply the available knowledge on the prevention and control of noncommunicable disease by means of integrated community based programmes". This policy endorsement by the highest governing body of WHO supported two major initiatives: the Integrated Programme for Community Health in Noncommunicable Diseases (INTERHEALTH) and the Countrywide Integrated Noncommunicable Disease Prevention (CINDI) Programme.

### 3.2 Programmatic and policy issues

3.2.1 The INTERHEALTH and the CINDI programmes were both conceived as programmes to test and demonstrate the feasibility and value of integrated approaches to the prevention of NCD at the community and country levels stressing the involvement of health professionals as a key element in this initiative. Their components included development and implementation of systems to monitor mortality and morbidity patterns and risk factor prevalence; preparation of guidelines for clinical and public health practice; provision of technical support for policy development initiatives at the country level; creation and management of networks and coalitions involving the public and private sectors; and mobilization of extra-bugetary resources to enable initiatives to proceed. Over the last 10 years, these programmes evolved through different paths: INTERHEALTH as a global initiative included developing countries, whereas CINDI became a programme of the WHO European Region and later, with Canada's membership is being expanded to the Americas. In keeping with the WHO Health for All policy, both these programmes are based on the premise of integration of actions for the control of a number of common risk factors associated with major NCD; development of interventions which straddle health promotion in the community and clinical prevention approaches; and establishment of preventive projects in the fabric of the primary health care system to ensure their viability and long term sustainability.

## 4. THE CHALLENGE OF INTEGRATION

4.1 The need for integrated NCD prevention and control programmes is supported by biomedical and epidemiological findings. The presence of several risk factors confers a degree of risk to the individual in excess to that which might be surmised from their additive effects. Interventions which aim to reduce multiple risk factors in individuals or in entire populations are bound to be, as a rule, more beneficial and cost-effective than interventions which target one risk factor at a time. Well documented and evaluated community intervention studies carried out over the last two decades have demonstrated the value of an integrated approach to building local coalitions, implementing social marketing campaigns and evaluating overall impact of interventions in the community. The need for integration is also appealing for the consumers who experience health from a holistic perspective.

4.2 In practical terms integration means that NCD prevention programmes would combine community and individual approaches and use multidisciplinary and intersectoral modes to plan, deliver and evaluate prevention measures. Health services (primarily primary care and public health) have a leading role to play as they are major stakeholders and gatekeepers for access to the health system. The fact that various types of health professionals are regarded by the majority of the population as credible sources of health information makes it advisable to recruit them for participation in preventive initiatives and to encourage multidisciplinary collaboration.

4.3 To achieve integration in the delivery of preventive services it is necessary to provide appropriate education programmes which introduce the theory, practice and skill building of health promotion and disease prevention. Cases in point are pre- and post-graduate medical and nurse education programmes and continuing education opportunities for practising health professionals. Acquisition of improved skills in NCD prevention by health professionals should enhance the interest of health authorities in providing preventive services as well as increase public participation in preventive initiatives.

4.4 This emphasis on integration in the planning and delivery of preventive programmes is in keeping with the concept of New Public Health and the role of primary health care. The participation of health services in community health coalitions and in partnership building for prevention should make prevention more relevant in the context of health care reform which now affects most countries.

4.5 Integration may occur at various levels, e.g.: conceptual programme design, managerial or organizational, specification of goals, delivery of programmes to various target groups. Clearly, there are limits to the type of integration that is appropriate in a given issue (e.g. a diabetes programme), or setting (e.g. schools, work sites) that cannot be predicated in general, but rather it requires a systems approach to identify the areas where integration adds value and serves the needs of the "client group".

4.6 An integrated approach to NCD prevention and control requires the utilization, as appropriate, of the full array of health promotion, disease prevention, curative and rehabilitation strategies. This implies the need to provide focal points to identify gaps in local and country activities, link existing resources that might be brought to bear on a given problem, and coordinate activities at the country and community levels. In so far as WHO is one such focal point, it is incumbent upon it to provide such linkage and coordination at the global and regional levels through its Headquarters and Regional Offices.

4.7 Integrated approaches also mean that it is desirable, to set up, as appropriate and affordable, multiple health intervention modules to address the major risk factors and its social determinants in all relevant groups of the population. These modules may cover a wide range of interventions (e.g. social marketing, training of health workers, community mobilization) through multiple channels (professional, media, health services).

4.8 As already mentioned, blending NCD prevention measures in the fabric of the primary care and public health systems is essential to make the concept practical and attractive, both in developed and in developing countries. The establishment of links between the public health and the primary care sectors remains a challenge which might well be best addressed in the context of actual interventions where both sectors function as partners in the implementation of a given initiative.

4.9 Commitment to a partnership and to multidisciplinary approaches are logical consequences of an integrated approach. Disciplinary barriers, competition which is not constructive, and sense of territoriality are challenges to be addressed. Members of coalitions, such as Nongovernmental Organizations (NGOs) concerned with cancer, CVD, stroke, chronic lung disease and diabetes may enjoy the benefits of belonging to a network without losing their separate identities or reducing the visibility of their individual agencies, organizational units or programmes. Indeed, there are numerous examples in CINDI and in INTERHEALTH projects where coalitions have been very

successful in joint needs assessment, setting goals, and carrying out specific aspects of a given intervention.

## **5. INTEGRATED APPROACHES TO NCD PREVENTION IN ACTION**

### **5.1 WHO Collaborative Programmes: INTERHEALTH and CINDI**

5.1.1 These two Programmes represent a leap forward in preventive strategy in that they pioneered the concept of integrated action at community and country levels, on the major lifestyle risk factors which account for major NCD, namely: smoking, unhealthy eating habits, lack of physical activity and excessive alcohol consumption. The programmes were developed starting in the 1980's, by a group of WHO advisers and WHO staff following discussions with the EURO Office and the Regional Advisers. Intended originally as a single programme they branched out as the Countrywide Integrated Noncommunicable Disease Prevention (CINDI) Programme to serve the European Region and as the Integrated Programme for Community Health in Noncommunicable Diseases (INTERHEALTH) for global development and essentially to promote interventions in developing countries through the mechanism of twinning institutions in developed and developing countries.

5.1.2 The key concept underlying both the CINDI and the INTERHEALTH programmes is that, since NCD "share" major risk factors, it should be cost-effective to implement a joint approach which integrates action on various risk factors. This approach aims at prevention of several diseases rather than focusing on single ones. Health professionals were seen from the beginning as playing a key role in bridging new public health principles to reality and in ensuring continuity of action between individual and community aimed approaches for prevention.

5.1.3 The INTERHEALTH programme, launched in 1988, focuses on the institutionalization of integrated risk reduction interventions, health promotion approaches, monitoring disease and risk factor patterns in the population and on dissemination of results monitoring - as major strategies for combatting the epidemic. INTERHEALTH has been conceived as a global action-oriented programme being carried out in a broad range of countries: developed market economies, developing countries, least developed countries, and countries with economies in transition.

5.1.4 Following a first WHO Teaching Seminar on Epidemiology, Planning and Design of the WHO Integrated Programme for Community Health in Noncommunicable Diseases, WHO Headquarters initiated development of a protocol for INTERHEALTH. In 1988, WHO Global Scientific Advisory Group defined four major thrusts of INTERHEALTH: development of demonstration projects in a core group of countries; modelling and forecasting; education and training; and research. By 1990, INTERHEALTH had established 16 projects in 13 countries (Annex C).

5.1.5 Some highlights of activities and accomplishments during the first seven years of INTERHEALTH operation include:

- - A comparative baseline survey of NCD risk factors in 13 countries, including some developing countries, where the extent of risk factors was established for the first time.
- - Gathering of evidence that the NCD epidemiological situation in some developing countries is similar to that of the developed countries thirty years ago. It was also shown

that community based integrated NCD prevention resulted in a noticeable decline in risk factors, followed by a decline in the major NCD mortality, can influence NCD risk factors profile at the population level in developing countries.

- Community-based interventions in some INTERHEALTH demonstration projects have fully achieved the effects predicted at the outset.
- Confirmation of unfavourable nutrition trends globally; most countries have either high or rising levels of dietary fat availability and declining availability of vegetable protein and total carbohydrate, particularly from starch.
- Facilitation of technology transfer to improve community health, as well as a health policy formulation, implementation and evaluation.
- Stimulation of discussions among professional, scientific circles and government health departments of the implications of epidemiological monitoring data and their value for the planning and evaluation of NCD programmes patterned after INTERHEALTH.

Resource limitations (namely shrinking WHO allocations for NCD) and inadequate training of health professionals in prevention are two major challenges that INTERHEALTH faces in implementing its demonstration projects.

5.1.6 The activities of INTERHEALTH include training seminars, development of guidelines for the creation of demonstration projects, and provision of technical support to projects through the WHO Global Scientific Advisory Board. Between developing countries the Mauritius project has shown particularly promising results by demonstrating appreciable risk factor reductions in the population after a 5-year community-based intervention period. The contribution of the Ministry of Health and of the WHO Office in Mauritius augurs well for sustainability of the interventions.

5.1.7 The Tianjin and Beijing projects in China have also shown positive results. These projects have implemented a wide range of preventive and health promotion interventions, including anti-smoking campaigns, health education through media, management of hypertensives at the community level and breast self examination. Interventions over a period of 3-4 years have resulted in reductions of prevalence rates of smoking, mean levels of blood pressure, and consumption of salt and alcohol. It is anticipated that the experience accrued from these projects will constitute a valuable input for health care reform in China.

5.1.8 The WHO European Office adopted the CINDI programme as a vehicle to implement the NCD prevention strategy in the Region intended to broaden the repertoire of preventive strategies. A protocol and guidelines for monitoring and evaluating procedures was published in 1987; they have formed the basis for structuring the intervention activities and for gathering baseline data on risk factors in participating countries and demonstration areas. The CINDI Data Centre supported by CINDI Germany, makes available periodic comparisons of risk factors and mortality statistics in member countries.

5.1.9 At present, 24 countries are members of CINDI (Annex D). In more than a third of these countries, the CINDI Programme is active at the national level. The programmes employ a wide range of strategies in the demonstration area and at the country level, including: policy development,

marketing and organizational development, public education, mass media involvement, practice guidelines, professional education and involvement, community mobilization and monitoring, evaluation and research. There are working groups actively addressing ten different issues, ranging from capacity building in policy development to diabetes control and process evaluation guidelines. Partnerships among CINDI teams are stimulated by annual meetings of CINDI Directors, working group activities and cooperation on resource mobilization. One important activity was the development of a CINDI Action Plan for EUROHEALTH in support of the WHO EURO Initiative to address health gaps in Central and Eastern European countries.

5.1.10 Examples of some CINDI countries where the programme is operating at the country level include: Finland (extension from the North Karelia project), Lithuania and Canada. The accomplishments of the North Karelia project, which also belongs to INTERHEALTH, have been well documented in the literature (e.g. BMJ, June 1993). The Lithuania project which also belongs to the INTERHEALTH network, has made noteworthy contributions at the health systems and health policy levels, namely: establishment of a national health information system, national health policy including health promotion and disease prevention, human resources and health services development and innovative intersectoral collaboration for health. The CINDI Canada programme (with the Province of Nova Scotia as its demonstration area) has provided a supporting framework for the development of the Canadian Heart Health Initiative in which the federal department of health is collaborating with the 10 provincial departments in the implementation of a public health strategy for CVD prevention.

## 5.2 Lessons learned from the projects on integrated prevention of NCD

5.2.1 The presentations made at the Consultation showed that in the last ten years the INTERHEALTH and the CINDI Programmes have accrued a wealth of interventional experience.

While a systematic evaluation of the projects in all the countries involved has yet to be made, some important lessons were drawn at the Consultation.

5.2.2 The need for strategic thinking in the development of interventions was acknowledged as a prerequisite to achieve results. This includes adequate needs assessment of communities and/or jurisdictions to be served by the project; the setting up of appropriate systems for monitoring risk factors and NCD mortality; attention to development of partnerships to provide the political support and mobilize the resources needed; and foremost, a clear sense of direction reflected in shared goals and measurable targets.

5.2.3 The most successful projects in INTERHEALTH and in CINDI are those which have planned institutionalization of worthy interventions from the very beginning. To this effect, involvement with the health system is critical for sustainability of the project once the project funding expires.

5.2.4 The point of entry for NCD interventions varies from country to country. Experience has shown that there is a need for flexibility in the design of the intervention programmes. This may require accommodating the interests of a given community for a hypertension control programme, local concerns about oral health or citizens desires to address excess rates of CVD (as in the case of the North Karelia CVD prevention project). By and large, community mobilization with support of frontline health care teams appears to be a good strategy to build on the strengths of the particular

situation; this could be facilities provided by a research institute, or readiness of an industry which seeks support for delivery of preventive services to its workforce.

5.2.5 Implementation of demonstration projects is a proven strategy to show to the health authorities and health professional community, in practical terms, the meaning and benefits of integrated approaches to prevention. Demonstrations must be complemented with appropriate evaluations. Documentation of the interventions, the process followed, and outcomes obtained are necessary to advance preventive knowledge, to market intervention programmes to relevant stakeholders, and to succeed with resource mobilization.

5.2.6 Policy development, i.e. the development of consensus among relevant stakeholders, is effective in creating sound strategic frameworks, garnering support from various levels of governments and health agencies, and establishing a favourable negotiating position with donor agencies. Some CINDI and INTERHEALTH programmes have developed countrywide policy documents to support development of broad initiatives in NCD (e.g. Russia), or specific strategies on high blood pressure control, smoking (e.g. Slovakia).

### 5.3 Future challenges

5.3.1 The participants in the Consultation agreed on the challenge of working intersectorally, particularly since this is an area where public health agencies have relatively little experience. Results from a policy study carried out in CINDI countries indicated that intersectoral collaboration was a particular challenge at the country or central levels.

5.3.2 Project sustainability was seen as an area that requires attention. Partnership building, appropriate policy and political positioning of NCD issues, and grounding the interventions in the existing health system appear to confer a higher probability of institutionalization for a successful project. Marketing is also an important factor in securing sustainability. In this regard it was pointed out that, in most instances, marketing often takes place in an opportunistic, as opposed to an organized and strategic fashion.

## 6. NCD ACTIVITIES IN WHO REGIONS

WHO is globally organized in six regions: African, American, Eastern Mediterranean, European, South East Asia and Western Pacific. Along with the presentations, a number of technical reports published by various Regions were distributed at the Consultation. The reports of the Regional Advisers painted a picture of varying burden of NCD and resources to deal with them. There was a uniform concern for the existing or forthcoming burden of NCD. The priorities in all six Regions are: cardiovascular disease prevention and control, cancer prevention and control, and diabetes control.

### 6.1 The African Region

6.1.1 This region has an enormous burden of communicable diseases as well as a rising NCD burden. The lack of resources to act upon NCD was emphasized. With the aging of the population and changing lifestyles, NCD are an increasing concern. Cancer is increasingly prevalent and some types (e.g. liver cancer, cancer of the cervix) are very common. Although the incidence of coronary heart

disease (CHD) is low by global standards, it is clear that many African countries are now in the threshold of the epidemiological transition; thus hypertension rates are catching up with those in developed countries, as is the prevalence of diabetes, with both conditions being untreated in a large percentage of affected individuals. Rheumatic fever and rheumatic heart disease is a major cause of premature mortality and accounts for one third of all cardiac diseases admitted to hospital. About 2% of newborns are found to be seriously suffering from sickle cell disorder.

6.1.2 In spite of the dearth of resources available to Sub-Saharan Africa, the Regional Office has managed to carry out a significant number of NCD preventive activities; these include: support for cancer registries, training courses in cancer epidemiology, community projects to control hypertension and development and distribution of resource documents on CHD risk factors and on diabetes. It is expected that the re-entry of South Africa in the international scene will result in additional technical and financial resources for the Region.

## 6.2 The American Region

6.2.1 Within this Region, the majority of countries are currently undergoing epidemiological transition and NCD already account for the bulk of mortality and morbidity; cardiovascular disease, cervical cancer and diabetes are among the major NCD issues. A NCD Programme in the Pan American Health Organization (PAHO) has been recently established to address these issues.

6.2.2 Technical cooperation with countries in the Region includes: development of policies, plans and norms (e.g. diabetes); mobilization of resources; dissemination of information through its network of WHO country representatives; training and research. Direct technical cooperation will likely result in two CINDI-type projects (CARMEN, is the South American acronym), in Argentina and Chile. Expected results focus on network for information gathering, capacity for needs assessment, training for formulation of NCD programmes, integration of NCD prevention practices in clinical settings, and demonstration projects inspired by the CINDI protocol. The NCD programme in the PAHO is located in the Division of Disease Prevention and Control; it cooperates closely with the Division of Health Systems and Services Development to support lifestyle and preventive health services activities appropriate to its mandate.

## 6.3 The Eastern Mediterranean Region

6.3.1 This Region constitutes a classical example of countries in the midst of epidemiological transition: increasing rates of obesity, accompanied by growing prevalence of hypertension and diabetes. Two key strategic objectives for the Office are: to support the formulation, implementation and evaluation of national NCD control programmes in Member States; and to develop appropriate strategies for NCD control in the Region. The Regional Office is engaged in intensive collaboration with the countries in the region concerning CVD and cancer prevention and control activities. It has published situational analysis and strategic protocols for CVD prevention and for cancer control.

6.3.2 There is considerable activity with countries and professional associations from outside the Region. Specially worth noting is the systematic approach followed in the development of a Diabetes Prevention and Control Initiative. In less than 4 years, the Office prepared, in collaboration with WHO Headquarters, a situational analysis, constituted a Regional Advisory Panel, provided technical Consultations to participating Member States and issued detailed guidelines for management to participating States. This activity was recognized by the Regional Committee which, in 1994 passed

a resolution urging Member States to formulate national diabetes control programmes. Given the support by Member States to NCD prevention and the point of epidemiological transition in the Region, there is an opportunity, with appropriate evaluation systems to demonstrate the value and cost-effectiveness of primary prevention and health promotion.

6.3.3 Hereditary diseases are extremely common in the Region due to high consanguinity rates, declining infant mortality and better control of communicable diseases. In recognition of the increasing awareness of these disorders, a regional working group on the control of hereditary diseases was established in 1993, in cooperation with HQ. A situation analysis was prepared and region-specific strategies for the control of hereditary disorders recently developed.

#### 6.4 The European Region

6.4.1 In the European Region NCD is a recognized priority which corresponds to the fact that three out of four deaths in Europe are due to this category of diseases. The social and economic changes which countries in Central and Eastern Europe and in the Newly Independent States (NIS) are currently undergoing has brought to the fore the impact of NCD as a public health issue. In about half of the forty-nine countries which comprise the European Region, the rates of CVD mortality (prior to age 65) have increased between 1985 and 1992. The European Office is the home of the CINDI programme and coordinates CINDI activities of its Member States.

6.4.2 The Regional Office is addressing in earnest the issue of health inequalities between Western and Eastern Europe and the NIS through the EUROHEALTH Initiative. The CINDI Programme and CINDI countries have contributed by submitting concrete proposals in the form of a plan of action.

6.4.3 CINDI and other units concerned with chronic disease in the WHO European Office have ongoing collaboration with most countries in the Region and with the European Community in the following areas: monitoring of CVD (building on the European Study on CVD Incidence of Risk Factors, ERICA), stroke management (strengthen networks, consensus on evaluation, bilateral collaboration, quality of care), and hypertension control (monitoring systems and community control policy). Functional areas of increasing importance are: updating intervention packages (e.g.: women and CHD), policy development studies and process evaluation and use of new methods for qualitative analysis, enhancement of capacity for intervention in Member States, health professional training and public education.

6.4.4 Diabetes and quality of care is a component of the "Continuous quality development in improving prevention and control of major NCD" programme which is managed by the WHO European Office. The goal is to establish National Diabetes Action Programmes in European countries. Process or system targets for the Year 2000 include setting up international and country level structures in support of the Action Programmes. This WHO Programme provides technical support and liaison with a good number of countries in Central and Eastern Europe.

6.4.5 "Diabcare France" is one practical tool being developed in the context of the WHO quality of care strategy. A computerized system of tracking forms for diabetic patients and a companion computer system is currently being piloted to encourage primary care physicians to record various aspect of the diabetic profile. When operational, the computerized system should permit comparisons among aggregates of patient profiles in participating practices. Statistical analysis should, in turn, suggest ways in which the variations in practices may be examined and improved.

There are plans to pilot the system in the Internet pending resolution of technical and confidentiality issues.

## 6.5 The South East Asia Region

6.5.1 This region includes some of the poorest countries in the world. It experiences in addition to the burden of communicable disease that of NCD. For example, extrapolation from cancer registry data in India lead to an estimated yearly cancer incidence of 66/100,000 population which translates in about 1,000 cancer deaths per day. Overall, regional statistics suggest that with an average life expectancy of about 63 and above, CVD and cancer are now the two leading causes of mortality. Hypertension has been found to affect up to 15% of the population in India, Indonesia and Thailand. Diabetes, while low in rural areas, reaches in urban populations similar proportions as are observed in industrialized countries.

6.5.2 There are plans to initiate some pilot demonstration projects in India which would include lifestyle risk reduction programmes with appropriate evaluation components. To date, only isolated, non-integrated, NCD control projects have been implemented. Such is the case with projects on diabetes control in some parts of Bangladesh, or control of rheumatic diseases in some parts of Java, or control of CVD in Myanmar. Depending on the outcome of ongoing NCD prevention projects, it is likely that initiatives on NCD-integrated approaches at the community level could emerge in the near future.

## 6.6 The Western Pacific Region

6.6.1 In this Region, epidemiological pattern is the transition from communicable diseases to NCD: increasing prevalence of hypertension and diabetes, increasing rates of smoking and obesity. Most countries of the Region are suffering from the double burden of communicable diseases and NCD which are becoming more prevalent in many Pacific communities. It should be noted that in recent years, Australia, Japan, New Zealand and Singapore have shown a decrease of morbidity and mortality of CVD.

6.6.2 The Regional Office has collaborated closely with Member States and Non Government Organizations (NGOs) in supporting the development of a national policy, priorities for action, programmes and activities for prevention and control of major NCD: hypertension, coronary heart disease, stroke, diabetes and some common cancers which are prevalent in countries in this region. China, Fiji, Republic of Korea, Malaysia, Philippines and VietNam are engaged in intensive programmes concerning CVD, diabetes, and cancer prevention and control activities, training and epidemiological research. The Regional Office is currently collaborating with six countries in the Region (including China) in the development of national programmes of integrated community based prevention and control of NCD (e.g. in Beijing), with a focus on both primary and secondary prevention. Rheumatic diseases and prevention of rheumatic heart diseases are priorities for development in the near future.

6.6.3 With respect to cancer, the office is focussing on strengthening national policies and programmes, prevention of some types of cancers, cancer registries, early detection of breast cancer and cervical cancer and cancer pain relief. The CVD prevention and control programme aims to strengthen hypertension control, implement health promotion approaches and community-based

intervention of risk factors, elaborate epidemiological profiles in collaboration with collaborating centres in the Region.

6.6.4 Diabetes is highly prevalent in many Pacific Island countries and newly industrialized countries of the region. The formulation and implementation of community-based integrated programmes for NCD, mainly CVD, diabetes have been actively conducted in these countries in terms of cost effectiveness and intervention of common risk factors. It was noted at the meeting that considerable prevalence data are now available for this Region.

#### 6.7 Needs and opportunities for collaboration

The presentations and the ensuing discussion made evident that there are numerous opportunities for collaboration among regional offices as well as with Headquarters. Cases in point are the sharing of experiences with implementation of various approaches to NCD prevention at the community level; exchange of information on practical tools for needs assessment monitoring of risk factors; and affordable systems to carry out process evaluation at the community level.

### 7. WHO HEADQUARTERS: INITIATIVES IN NCD PREVENTION

The NCD Division in WHO Headquarters has built technical and scientific expertise in the following areas: cardiovascular diseases, cancer, diabetes, chronic rheumatic and respiratory diseases, oral diseases, genetic disorders associated with NCD, and specific hereditary diseases. Presentations were made by representatives of the corresponding Units and also by representatives of the Nutrition and of the Healthy Aging Units. A number of technical reports were made available to participants in the Consultation.

#### 7.1 Cardiovascular disease

7.1.1 The CVD Unit was first established in 1959. It provided leadership and technical support for the development of the CCCCCP programme that has been described in section 2.4 above. The activities and priorities of the Unit throughout the years reflected the resolutions of the World Health Assembly. Foremost among them was the standardization of nomenclature and methodologies for CVD epidemiologic studies. The Unit was responsible for supporting and providing coordination to the MONICA projects described also in section 2.3 above. Between 1974 and the present time, the Unit has provided support to a broad range of NCD activities, including: guidelines for planning and organization of CVD community programmes, systems for screening, primordial prevention, evaluation, training in CVD monitoring, hypertension control and rheumatic heart disease prevention in developing countries, and establishment of the CINDI as well as INTERHEALTH Programmes.

#### 7.2 Cancer prevention and control

7.2.1 The importance of this group of diseases is growing with an aging population; on a global basis it is estimated that there are over 5,000,000 deaths per year due to cancer. Over the past 12 years the WHO Cancer Unit in the NCD Division has supported the development and implementation of a comprehensive National Cancer Control Programmes (NCCPs) at the country level.

7.2.2 A number of expert groups have contributed to the preparation of the Policies and Managerial Guidelines for NCCPs (WHO, Geneva, 1995). The Guidelines cover primary prevention, early detection, treatment, palliative care and cancer control research. For each of the various issues treated (e.g. tobacco control, cancer screening) a conceptual model (reminiscent of the epidemiological triangle) has been developed to present the various strategies and approaches available to deal with the issue. Thus, in the case of smoking the strategies are education, legislation, and national leadership. The Guidelines specify in a systematic and well organized manner targets for implementation, process measures, impact measures, and short, medium and long term outcome measures.

7.2.3 Clearly, the opportunities for the Cancer Unit to establish collaborative links with other WHO initiatives are considerable. Cases in point are joint work with the Tobacco or Health, Nutrition and general health promotion. The networks established by the Cancer Unit extend to more than 40 countries which are implementing the NCCPs. The collaborative links which the WHO Cancer Unit has established with NGOs support the dissemination of products and packages from other WHO initiatives. These linkages could also be used in the future to further the concept of integrated approaches to NCD prevention and control through cancer prevention and control initiatives. Participants in the Consultation encouraged the identification of instances where such collaboration between WHO units and external partners might be established.

### 7.3 Diabetes

7.3.1 Diabetes mellitus affects approximately 100 million people worldwide. It is disproportionately common in certain developing countries, and in the disadvantaged and minority populations of the developed countries. The cost of diabetes is considerable (it represents about 8% of total health budget for industrialized countries) by virtue of the long term complications, such as blindness, kidney and heart disease, gangrene and limb amputations. Of significance for health policy is that most of these complications may be delayed or prevented through health education measures as well as early detection and intervention both pharmacologic and non-pharmacologic nature.

7.3.2 Recognizing the alarming situation concerning diabetes in the world the Forty-second World Health Assembly adopted a resolution (WHA42.36) on Prevention and Control of Diabetes Mellitus in 1989. The Resolution invited all Member States to assess the national importance of diabetes, and to introduce population-based methods for its prevention and control.

7.3.3 The main areas of work of the WHO diabetes programme include epidemiology and surveillance, professional education, support for national diabetes programmes, and a global information service. In 1993 WHO published the first global database on prevalence of diabetes in adults worldwide. The database is currently being used to forecast the number of diabetic persons in the world up until the year 2025. Public health training courses have been organized with strong WHO involvement on a three-year basis in Cambridge, United Kingdom since 1981. Regional training courses have taken place in Argentina, Japan, Hawaii, Saudi Arabia and South Africa.

7.3.4 The WHO Headquarters programme provides technical support to a number of national programmes and activities in some countries in the Eastern Mediterranean, the Americas, Africa and the Western Pacific Regions. There is also collaboration with the International Diabetes Federation in fostering availability of insulin and organization of activities for the World Diabetes day.

#### 7.4 Chronic non-specific pulmonary diseases/asthma

7.4.1 Asthma is an important risk factor for the development of chronic irreversible pulmonary obstruction and one of the serious disabling chronic non-specific pulmonary diseases (CNPD) with tendency to epidemic outburst. It is considered as a model condition for the development, implementation, and evaluation of the preventive strategy against CNPD in the context of the health care system.

7.4.2 The WHO Headquarters has under way the Global Initiative on Asthma (GINA), in collaboration with the National Heart, Lung and Blood Institute (USA). A WHO Scientific Group Meeting Report "Asthma Management and Prevention" (Geneva 1996) will serve as a basic document for the implementation of GINA. In a first phase implementation will take place in China, Russia, Poland and Morocco. The network of experts involved in the initial consultations, a number of NGOs, governmental organizations and WHO Collaborating Centres will serve as channels for the implementation and evaluation of GINA in all WHO Regions.

#### 7.5 Oral diseases

7.5.1 Preventive methods for common oral diseases have been developed and implemented as integral parts of primary health care. This has resulted in dramatic decreases in oral diseases in industrialized countries. This success has been achieved by a large range of preventive programmes, all based on improved oral hygiene, optimal use of fluorides, prudent use of sugar, complemented by restorative and rehabilitative services. However, in recent years, lack of funds for oral health care programmes and progressive reduction of quality of existing oral care services has been observed both in developing countries and in countries with economies in transition.

7.5.2 Main projects underway are: extension of the Global Oral Data Bank System, reinforcing goal setting; updating of methods for regular assessment of oral care services; performance of wide-scale community preventive programmes using fluoride in milk, salt and toothpaste, development of educational programmes with a new curriculum for oral health.

7.5.3 Oral health programmes were seen by the participants in the Consultation as good entry points for NCD prevention initiatives at the community level. In particular, collaboration among oral health programmes and with those in nutrition and other lifestyle areas in children populations (a priority in the CINDI Programme) seems most appropriate.

#### 7.6 Genetic disorders associated with some NCDs

7.6.1 WHO in collaboration with the MED-PED study (Make Early Diagnoses and Prevent Early Deaths in Medical Pedigrees) in which 14 countries are participating, has built up technical capacity in genetic approaches to identify individuals with familial hypercholesterolemia (FH). Individuals at high risk may benefit greatly from risk reduction by changing or modifying lifestyle. Hence the potential for including NCD integrated approaches in the context of clinical management of individuals affected by these disorders. It should be noted that collaboration might be appropriate with a number of national programmes which include interventions targeted at high risk groups, including individuals with FH.

## 7.7 Hereditary haemoglobin disorders

7.7.1 Hereditary anemias constitute a significant public health problem in a number of countries in each WHO Region. Some countries have already embarked on successful control programmes, while others are just beginning to organize their resources in this direction. It was pointed out that the poorest and least developed countries have yet to acknowledge the need for a control programme, even though the problem is of considerable magnitude.

7.7.2 WHO Headquarters has summarized world experience in community control of hereditary anemias and outlined the objectives of such programmes. WHO has made the case for global comprehensive approaches (improve curative services, establish prenatal diagnosis, develop carrier detection and counselling, and improve education) and for the need to establish some reference centres. WHO has emphasized the usefulness of voluntary groups and community organizations to ensure that approaches are appropriate to individual local social-cultural situations. There is an opportunity for each WHO Regional Office to support and develop regional and interregional working groups on the prevention and control of haemoglobinopathies, thus enhancing the scope of NCD prevention.

## 7.8 Other WHO programmes relevant to an integrated NCD agenda

### 7.8.1 Ageing and Health

Projections of burden of disease for the year 2020 indicate that NCD will account for more than three-quarters of all deaths in developing Regions (currently is about 50%). The Ageing and Health Unit in the Health Promotion Division is participating in an Ad Hoc Committee on Health Research Relating to Future Intervention Options. One of the conclusions of the Committee (October 1995 meeting) has been the need to highlight the importance of NCD prevention and control in the context of healthy aging. An inter-divisional Committee has been established to follow up on this issue and to explore opportunities for developing a strategy which might be used for resource mobilization with the World Bank and other donor agencies. The consultative group agreed that it would be important for the NCD Division to play an active role in the preparation of the strategy, which present also an opportunity to further integrated NCD prevention initiatives.

### 7.8.2 Nutrition

7.8.2.1 Appropriate dietary practices may act as powerful preventative factor for NCD. The relation between diet and CVD and other NCDs is well understood. The Nutrition Unit in WHO has been involved for many years in the preparation of technical CVD reports. Collaboration between the Nutrition Unit and other NCD units in Headquarters is well established. There are possibilities for enhanced cooperation with the various WHO Regions, a fact which may be explored by the Regional Advisers.

7.8.2.2 The Nutrition Unit is currently coordinating the development of new food-based dietary guidelines, an exciting approach which brings closer to the consumer the meaning of scientific recommendations traditionally expressed in percent calories recommended for various macronutrients. Participants in the Consultation agreed that the inclusion of nutrition guidelines in educational primary care packages would strengthen NCD integrated interventions at the community level that might be implemented in the Regions.

### 7.8.3 Information systems

WHO Headquarters has established a WWW "home page" in the Internet which is accessible from anywhere in the world. Point-and-click information on various WHO initiatives, including NCD prevention can now be found through the WWW "home page". This "page" was seen as a useful mechanism to facilitate the sharing of information across the Regions and to market the collection of NCD Norms and Standards being assembled at Headquarters. As a separate item, it was brought up to the attention of the consultative group that the existing information on NCD can be updated and made more accessible if Regional Offices state their specific needs.

## 8. SUPPORT FOR THE DEVELOPMENT AND IMPLEMENTATION OF A GLOBAL PROGRAMME ON INTEGRATED PREVENTION AND CONTROL OF NCD

### 8.1 Potential for enhanced collaboration between the Regional Offices and Headquarters

8.1.1 The Regional Advisers see the programmes as essential resources to draw upon in the Regional development including that of integrated approaches to NCD prevention. The discussions showed the need for collaboration of Headquarter Units and sharing of their resource materials and better collaboration with the Regions in coordination of plans for the future. Much is to be gained from coordinating activities between Headquarters and Regions at the country level. For example, demonstration projects in some countries could be systematically evaluated and experiences and lessons from the projects could be summarized and introduced to other areas of these countries and other countries by joint efforts of Headquarters and the Regional Offices.

8.1.2 Resource mobilization and utilization of available technical resources would benefit from enhanced coordination of activities and from the strengthening of cooperative links among the various WHO Regions and WHO Headquarters. To this effect it would be advisable to build into future strategic plans provisions for collaboration and working partnerships. As a first step, the Regional representatives were encouraged to identify their expectations with respect to activities which WHO Headquarters may undertake to best support implementation of NCD prevention programmes in Member States.

### 8.2 WHO Collaborating Centres in support of integrated noncommunicable disease prevention

8.2.1 Over the years, WHO has established a good number of Collaborating Centres in areas pertaining to NCD prevention and control. In the area of CVD alone there are over 43 such Centres (Table 3). It was noted at the Consultation that there is a good deal of variability in the extent of activities of the Centres and in the support that they actually provide to WHO towards the implementation of its NCD prevention mandate. Some of the concerns were: uneven geographical distribution of the Centres, inability to operate in Regional official languages; flaws in communication and reporting; delayed revision of terms of reference; and quality of products.

8.2.2 The Collaborating Centres are in a large measure unexploited assets. Their contribution to WHO might be greatly enhanced by increasing the frequency and quality of contacts with the Centres and by trying to encourage them to participate in WHO NCD activities. Concerning designation of new Centres and redesignation of existing Centres, it would be desirable to amend the current

practice of designation to include a commitment to submit concrete work plans and measurable results, as well as yearly reports on the support provided to the NCD programme.

### 8.3 Partnerships with International Governmental Organizations and Non-Government Organizations

The Consultation highlighted the added value of working in partnership with IGOs and NGOs and professional organizations at all levels. Views were expressed on the importance of developing and maintaining collaborative ties with these organizations to access their expertise, technical knowledge, and networks. Taking into account the shrinking levels of resources available to WHO, an active search for cooperative ties with economic and health development agencies, NGOs and IGOs is seen as a must to further the development of NCD prevention programmes.

## 9. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Following presentations of regional and headquarter activities, strategic and operational implications for WHO were discussed and the following conclusions were drawn:

9.1 Based on data available for the regions it is evident that NCD's are emerging as a major public health problem in developing countries and Eastern Europe. In all regions except one where countries are currently undergoing epidemiological transition, NCD already account for the bulk of mortality, morbidity and disability.

9.2 In view of the enormous, current and projected NCD burden, there is an urgent need to press ahead with programmes for the prevention of NCD on a global basis, with special emphasis on developing countries.

9.3 Enough is known about the scientific bases for prevention of major NCD. The challenge now is translation of this knowledge into practical action. Attention must be directed to implementation research, namely cost-effective design of interventions through existing health systems at community and country level, to evaluation and broader dissemination of information on existing initiatives and intervention methodology.

9.4 During the past two decades, WHO has built important assets for prevention, including: organizational structures and technical and scientific capacity to initiate and support NCD prevention and control initiatives in developed and developing countries. The coalitions, practical know-how, scientific networks and on-site teams developed under the auspices of WHO projects for monitoring and integrated prevention and control of NCD, such as the MONICA Project, INTERHEALTH and CINDI programmes are of key importance for WHO in operationalizing its Health for All Targets in NCD.

9.5 Of great value are also experiences gained from the development and implementation of national plans within the disease-specific programmes at Headquarters in close collaboration with the Regional Offices which contribute to the integrated approaches for NCD prevention.

9.6 The implementation of integrated NCD programmes need not be too ambitious. There is a variety of entry points to integrated NCD prevention programmes: coronary heart disease, hypertension, diabetes, asthma, cancer, oral health, etc. Starting even with one of these topics and applying the concept of integrated NCD prevention, it is feasible to later introduce other risk factors into the intervention picture with corresponding dividends and efficiencies of planning, development and implementation of programmes.

9.7 It is envisaged that an integrated approach to NCD prevention will require commitment to working in partnerships, breaching interdisciplinary barriers, a focus on team building to complement individual programme initiatives, recognition the need and value of consensus development and emphasis on dissemination of interventions known to be efficacious, as opposed to emphasizing resource expenditures in research agendas.

9.8 To achieve effective partnerships and to ensure from the outset that projects are sustainable at country and community levels, a client orientation is necessary. A careful assessment of needs and an analysis of the planned strategy and its components should therefore be made before launching activities. This systems approach is essential to ensure an effective integration, at all levels, of disease specific WHO norms and standards, with an orientation to the needs of the client.

9.9 In striving for integration of actions on the various risk factors common to major NCD, WHO will need to mobilize all available resources, both internal and external. Within the organization itself, NCD initiatives should strengthen collaborative links with the Regional Offices and other Divisions at Headquarters, such as Health Promotion, Education and Communication; Mental Health and Prevention of Substance Abuse; Food and Nutrition; Development of Human Resources for Health; Epidemiological Surveillance and Health Situation and Trend Assessment. Links need to be further developed and nurtured with international health and economic development agencies, with NGOs, with international health professional organizations and WHO Collaborating Centres concerned with NCD prevention and control.

9.10 Enhanced communications and collaboration between Headquarters and the Regions are essential to develop further global activities for integrated NCD prevention and control. Collaboration should focus on:

- exchanging information on practical tools for needs assessment, monitoring NCDs and process and outcome evaluation;
- sharing experiences with various approaches to NCD prevention;
- coordinating work plans, especially for activities at country level.

Teleconferences, informal sharing and periodic consultations (cost-shared, as a possibility) were seen as practical mechanisms to facilitate sharing and exchange.

9.11 Specific needs were identified by the Regional Advisers concerning: cost-effectiveness of NCD interventions and data on economic burden of NCD to defend priorities for NCD prevention; definition and procedures for a minimum information set for epidemiological assessment in less developed countries, including qualitative assessment tools to determine the readiness and the capacity of countries and communities to undertake integrated preventive interventions. Particularly

urgent are a set of process indicators and approach to process evaluation to permit monitoring of programmes in an economical and practical manner.

9.12 The consultative group expressed concern about the fact that, notwithstanding the importance of NCD as a public health issue and a main source of increasing health care costs, the WHA has not identified NCD as a priority. It seems clear that systematic marketing of and advocacy for the priority of NCD prevention is needed within WHO (headquarters and regions) as well as with Member States.

#### Recommendations

The consultative group expressed satisfaction with the organization of coming together to share concerns, learn about various activities and propose solutions.

The consultative group formulated the following recommendations to the Director of the NCD Division and to the Regional Advisers:

9.13 A priority is the further development of a global strategy for integrated NCD prevention emphasizing community-based and policy-oriented programming. Such a strategy could be used to mobilize resources with health and economic development agencies within countries as well as at the international level. This strategy would be equally helpful to convince governments of member states, especially the developing countries which are in the epidemiological transition to prioritize NCD prevention and control in national health plans.

9.14 To support the implementation of NCD prevention and control programmes at the country and community levels, guidelines, norms and standards for integrated prevention and control of NCD are urgently needed. Priority should, therefore, be given to the development of such guidelines which have to express, as simply as possible, what needs to be done in order to reduce mortality and prevent morbidity and disability as related to NCD. Clear guidance is required for:

- needs assessment, situation analysis at country level (including risk factors, health services and community organization);
- integrated prevention of NCD with major focus on nutrition and diet, tobacco control and exercise as relevant to NCD;
- case management as suitable for an integrated approach;
- programme planning and other areas to be identified at regional level.

In parallel with the elaboration of the guidelines or as a follow-up activity, training packages for their use in programmes for integrated prevention and control of NCD at national or community level should be developed.

In order to fulfill this task, other organizations, agencies and institutions should be invited to join WHO and contribute to this initiative:

9.15 A formal joint Headquarters-Regions publication to promote the need for NCD prevention and the value for money of preventive interventions is urgently required. This task should be coordinated by Headquarters and carried out in collaboration with a subgroup of the participants in the consultation.

9.16 The present report and the Executive Summary should be distributed widely as a means of raising awareness of the importance of NCD prevention as a global issue of concern to WHO and to Member States.

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**TABLE 1. DEATHS FROM NONCOMMUNICABLE DISEASES (IN MILLIONS) BY CAUSE: WORLD, DEVELOPED AND DEVELOPING COUNTRIES, 1990**

	Demographically developing countries		Established market economies and formerly socialist economies of Europe		World	
	Number	%	Number	%	Number	%
Total deaths	39.09	100	10.88	100	49.97	100
Cardiovascular diseases	9.02	23.1	5.33	49.0	14.35	28.7
Cancer	3.70	9.5	2.43	22.3	6.13	12.3
Other noncommunicable diseases:	3.20	8.2	0.81	7.4	4.00	8.0
- chronic obstructive pulmonary diseases (including asthma)	1.86		0.39		2.25	
- diabetes	0.48		0.18		0.66	
- musculoskeletal diseases	0.11		0.04		0.14	
- cirrhosis	0.56		0.15		0.71	
- peptic ulcer	0.19		0.05		0.24	
Congenital abnormalities	0.60	1.5	0.06	0.6	0.66	1.3
<b>Total</b>	<b>16.52</b>	<b>42.3</b>	<b>8.63</b>	<b>79.3</b>	<b>25.14</b>	<b>50.3</b>
Total, including conditions not covered by the WHO Division*	19.55	50.0	9.50	87.3	29.06	58.2

\* In addition to the diseases covered by the Division of Noncommunicable Diseases, this number includes deaths due to nutritional and endocrine, neuropsychiatric, sense organ, and genito-urinary diseases.

*Source:* This table has been prepared by the Division of Noncommunicable Diseases on the basis of data contained in the World Bank's Development Report, 1993, and the World Health Report 1996 - Fighting disease, Fostering development.

**TABLE 2. BURDEN OF DISEASE (MILLIONS OF DALYs\* LOST) BY MAIN GROUPS OF CAUSES, 1990**

	Established market economies	Formerly socialist economies of Europe	Demographically developing countries	World
Cardiovascular diseases	21.9	17.2	108.2	147.3
Cancer	18.0	8.6	52.9	79.4
Other noncommunicable diseases:	10.1	4.1	60.0	74.1
- chronic obstructive pulmonary diseases (including asthma)	2.7	1.5	26.5	30.7
- diabetes	1.3	0.4	6.2	8.0
- musculoskeletal diseases	3.9	1.4	13.1	18.4
- cirrhosis	1.7	0.5	10.8	12.9
- peptic ulcer	0.5	0.3	3.4	4.1
Congenital abnormalities	2.4	1.6	36.9	40.8
<b>Total</b>	<b>52.4</b>	<b>31.5</b>	<b>258.0</b>	<b>341.6</b>
<b>Total, including conditions not covered by the WHO Division**</b>	<b>73.4</b>	<b>43.5</b>	<b>458.5</b>	<b>575.4</b>
Infectious/parasitic diseases	4.1	1.7	363.2	371.9

\* "Disability-adjusted life years".

\*\* In addition to the diseases covered by the Division of Noncommunicable Diseases, this number includes deaths due to nutritional and endocrine, neuropsychiatric, sense organ, and genito-urinary diseases.

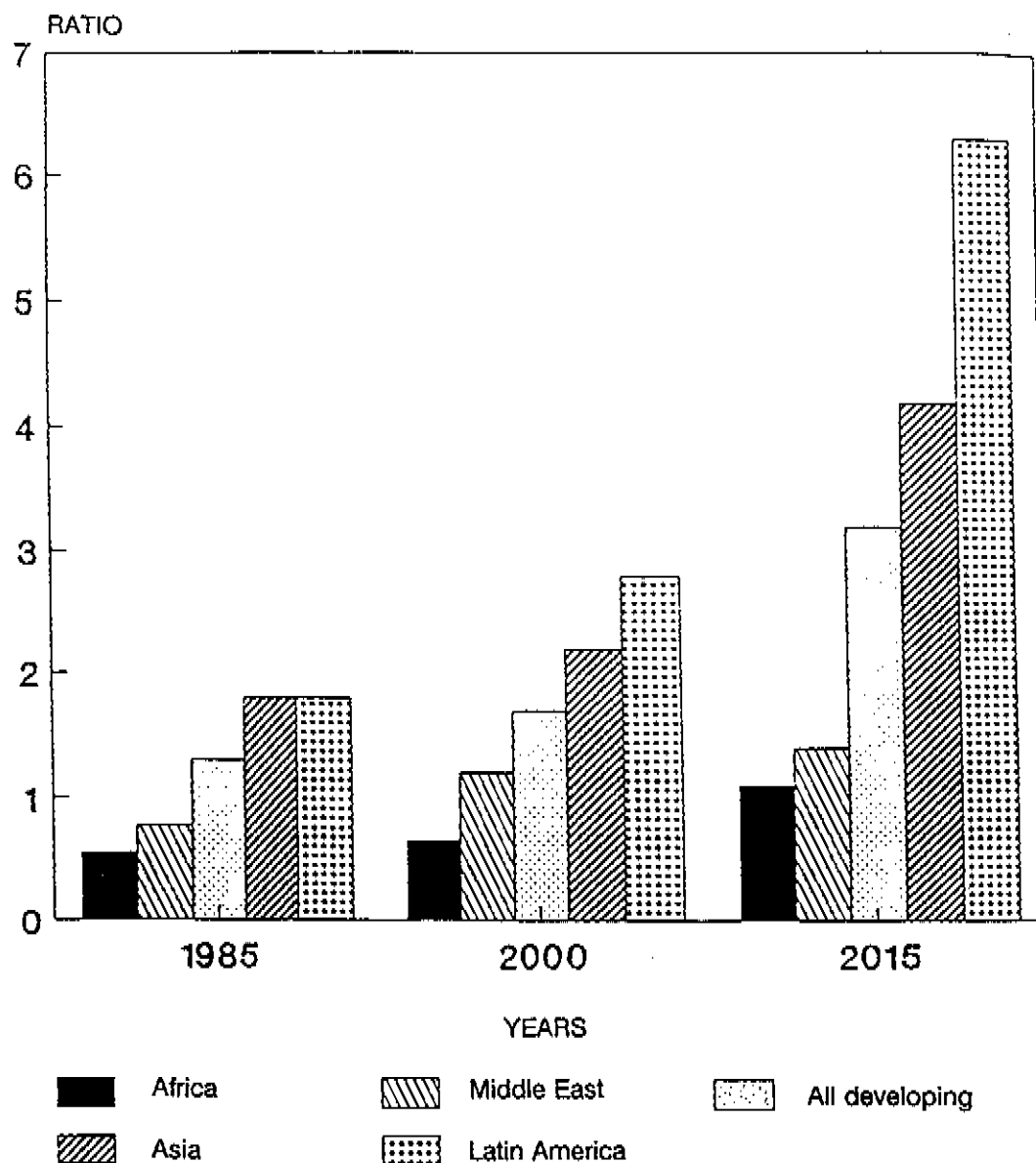
Source: This table has been prepared by the Division of Noncommunicable Diseases on the basis of data contained in the World Bank's World Development Report, 1993.

TABLE 3. REGIONAL DISTRIBUTION OF WHO COLLABORATING CENTRES ACTIVE IN NONCOMMUNICABLE DISEASE CONTROL

Unit/programme/ project	Number of WHO collaborating centres						Total
	African Region	Region of the Americas	South-East Asia Region	European Region	Eastern Mediterranean Region	Western Pacific Region	
Cardiovascular diseases	1	4	1	22	2	13	43
Cancer	-	14	4	12	1	7	38
Diabetes and other noncommunicable diseases	1	17	1	27	2	4	52
Hereditary diseases	-	4	1	9	2	1	17
Modelling and forecasting project	-	2	-	10	-	-	12
<b>Total</b>	<b>2</b>	<b>41</b>	<b>7</b>	<b>80</b>	<b>7</b>	<b>25</b>	<b>162</b>

FIG. 1 EMERGENCE OF NONCOMMUNICABLE DISEASES  
IN DEVELOPING COUNTRIES:

ratio of male deaths from noncommunicable diseases\*  
to deaths from infectious and parasitic diseases\*\*



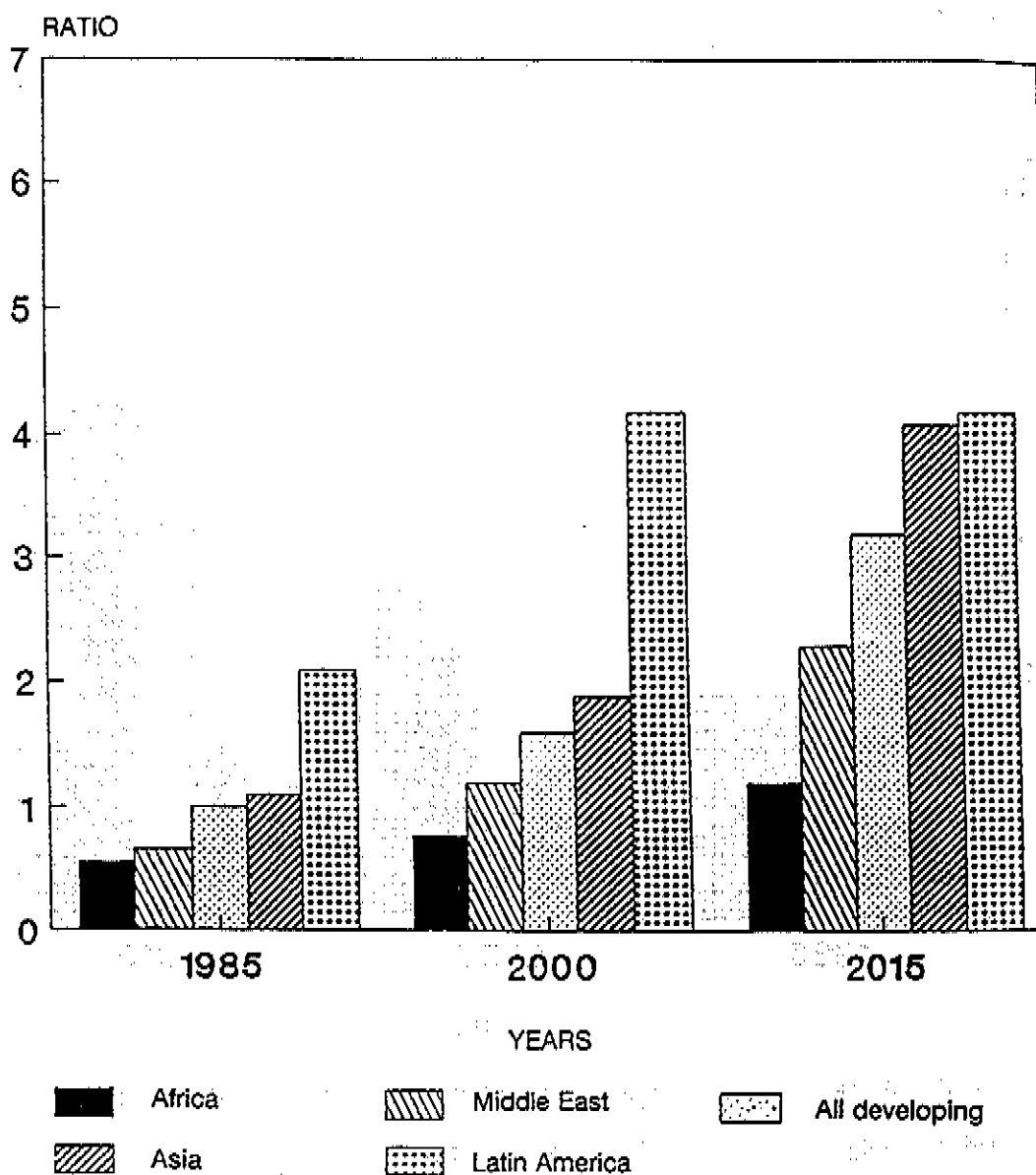
\* International Classification of Diseases, Ninth edition (ICD9) basic tabulation list 08-17, 181, 25-30, 347, 350

\*\*International Classification of Diseases, Ninth edition (ICD9) basic tabulation list 01-07.

Source: Bulatao, R.A. & Stephens, P. *Estimates and projections of mortality by cause: a global overview, 1970-2015*. In: Gribble, A. & Preston, S., eds. *The epidemiological transition*. Washington, DC, National Academy of Sciences Press, 1993.

FIG. 2 EMERGENCE OF NONCOMMUNICABLE DISEASES  
IN DEVELOPING COUNTRIES:

ratio of female deaths from noncommunicable diseases\*  
to deaths from infectious and parasitic diseases\*\*



\* International Classification of Diseases, Ninth edition (ICD9) basic tabulation list 08-17, 181, 25-30, 347, 350.

\*\* International Classification of Diseases, Ninth edition (ICD9) basic tabulation list 01-07.

Source: Bulaçao, R.A. & Stephens, P. *Estimates and projections of mortality by cause: a global overview, 1970-2015*. In: Gribble, A. & Preston, S., eds. *The epidemiological transition*. Washington, DC, National Academy of Sciences Press, 1993.

ANNEX A

CONSULTATION WITH REGIONAL ADVISERS ON INTEGRATED  
PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES

Geneva, 12-14 December 1995

LIST OF PARTICIPANTS

REGIONAL ADVISERS

AFRO: Dr T. Ogada, RA/NCD  
AMRO: Dr F. White, PC, HCN/HCP  
EMRO: Dr A. Alwan, RA/NCD  
EURO: Dr A. Shatchkute, RO/CHR  
Dr K. Staehr-Johansen, RA/QCT\*  
SEARO: Dr H. Sell, RA/H&B & Acting RA/NCD  
WPRO: Dr Han Tieru, RA/NCD

TEMPORARY ADVISERS

Dr J.-Ph. ASSAL, Director, WHO Collaborating Centre for Reference and Research  
in Diabetes Education, Division of Therapeutic Education for Chronic Diseases,  
Hôpital Cantonal Universitaire, Geneva.

Dr R. BEAGLEHOLE, Professor and Head, Department of Community Health,  
School of Medicine, University of Auckland, New Zealand.

Dr CHEN Chunming, President, Chinese Academy of Preventive Medicine, Beijing,  
People's Republic of China.

Dr A. PETRASOVITS, Chief, Cardiovascular Diseases Prevention Unit, Health  
Promotion Directorate, Health Canada, Ottawa, Ontario, Canada.

Dr V. GRABAUSKAS, Rector, Kaunas Medical Academy, Kaunas, Lithuania.

\* unable to attend

SECRETARIAT

- Dr N. Napalkov, ADG
- Dr M. Tsechkovski, Director, NCD
- Dr D. Barmes, NCD
- Dr V. Boulyjenkov, NCD/HGN
- Mr E. Dowd, NCD
- Dr I. Gyarfas, NCD/CVD
- Dr N. Khaltaev, NCD/CRA
- Dr H. King, NCD/DIA
- Dr V. Koroltchouk, NCD/CPL
- Mrs M-H. Leclercq, NCD/MMC
- Dr I. Martin, NCD/CVD
- Dr P. Nordet, NCD/CVD
- Dr G. Pakhomov, NCD/ORH
- Mrs J. Sardo Infirri, NCD/ORH
- Dr J. Stjernsward, NCD/CPL

OTHER HEADQUARTER'S PARTICIPATION

Representatives from:

- FNU/NUT ]
- HPR/AHE,HEP ] for specific agenda items
- PSA/TOH ]

## ANNEX B

### OTHER NONCOMMUNICABLE DISEASE PREVENTION AND CONTROL ACTIVITIES

#### WHA38.30 The Thirty-eighth World Health Assembly,

Recalling resolutions WHA29.49 and WHA36.32, which led to the rapid development of a long-term programme to control cardiovascular diseases, with special emphasis on research into prevention, etiology, early detection, treatment and rehabilitation;

Mindful of the Director-General's progress report on the Global Strategy for Health for All by the Year 2000,<sup>1</sup> in which he underlines the growing importance of chronic noncommunicable diseases, notably those of the cardiovascular system, cancers and diabetes mellitus, as major factors adversely affecting life expectancy and health in general in both developed and developing countries;

Bearing in mind that information is accumulating that points to a number of features common to several noncommunicable diseases, such as their origins in and aggravations by tobacco smoking and other life-style factors including unbalanced nutrition;

Taking also into account the proposals regarding the application of existing knowledge in national health services made by the WHO Expert Committee on Community Prevention and Control of Cardiovascular Diseases,<sup>2</sup> in the report to the twenty-fourth session of the UNICEF/WHO Joint Committee on Health Policy on the prevention of rheumatic fever and rheumatic heart disease,<sup>3</sup> and by the WHO Study Group on Diabetes Mellitus,<sup>2</sup> together with the recommendation of the WHO Meeting on Reappraisal of the Present Situation in Prevention and Control of Lung Cancer;<sup>4</sup>

1. APPRECIATES the Organization's increasing efforts to coordinate scientific activities in the prevention and control of chronic noncommunicable diseases, and welcomes the results attained thus far;

2. CALLS on Member States:

- (1) to assess the importance of noncommunicable diseases in their countries;
- (2) where the problem is of high priority, to promote and introduce community studies with a view to arriving at population-centred measures to prevent and control cardiovascular diseases, lung cancer, diabetes mellitus, chronic respiratory and other noncommunicable diseases, and, where these measures are already being applied, to exchange information on their operation and on the training of relevant personnel;
- (3) to offer other Member States opportunities for training and further education in the community control of noncommunicable diseases as an integral part of existing health services, and to make information available on the national criteria applied in defining persons at risk, early detection, therapy and rehabilitation;
- (4) to make use of the latest findings in chronic noncommunicable disease control with the aim of devising, testing and introducing into existing health services models for the integrated control of several chronic conditions;

3. REQUESTS the Executive Board to consider the inclusion in the Eighth General Programme of Work, as a continuation and intensification of the Seventh General Programme of Work, of research and development aimed at the combined prevention and control of several noncommunicable diseases within health systems based on primary health care;

4. REQUESTS the Director-General, in view of the overriding importance of noncommunicable diseases in several countries in the implementation of their strategies for health for all by the year 2000:

- (1) to intensify measures to promote the prevention of cardiovascular diseases, as an example for other noncommunicable diseases;
- (2) to foster and support community studies aimed at the joint control of a number of risk-related noncommunicable diseases;
- (3) to encourage particularly the coordination within WHO of programmes aimed at influencing risk factors closely related to individual life-styles;
- (4) to ensure the availability of resources for the exchange of study protocols and experience among Member States involved in this initiative;
- (5) to encourage and sponsor workshops in Member States so that information about the practical implementation of control programmes can be quickly exchanged.

May 1985 WHA38/1985/REC/1, 23

<sup>1</sup> Document WHA38/1985/REC/1, p. 107.

<sup>2</sup> WHO Technical Report Series, No. 732, 1986, and No. 727, 1985.

<sup>3</sup> Document IC24/UNICEF/WHO/83.4(d).

<sup>4</sup> *Bulletin of the World Health Organization*, 60(6): 809-819 (1982).

#### WHA42.35 The Forty-second World Health Assembly,

Recalling resolutions WHA36.32 and WHA38.30, which led to the implementation of a long-term programme to control cardiovascular diseases, with special emphasis on research into prevention, etiology, early detection, treatment and rehabilitation, as well as on international cooperation in the field of community control of cardiovascular diseases and other chronic noncommunicable diseases;

Considering that sufficient information now exists to prevent and control cardiovascular and other noncommunicable diseases from childhood through adulthood;

Emphasizing the crucial importance of the optimal use and cost-effective management of the limited available resources;

Emphasizing, further, the increase in the number of cases of cardiovascular and other chronic noncommunicable diseases in developing countries;

Taking into account the proposals made by the two WHO expert committees - on appropriate diagnostic technology in the management of cardiovascular diseases, and on the prevention in childhood and youth of adult cardiovascular diseases - regarding the need to apply subsequent findings in both the health and various other sectors;

1. APPROVES WHO's increasing efforts to stimulate and coordinate activities for the prevention and control of cardiovascular and other chronic noncommunicable diseases, and notes with appreciation the results achieved;
2. CALLS ON Member States to strengthen their efforts to apply available knowledge on the prevention and control of noncommunicable diseases by means of integrated, community-based programmes with priorities according to national requirements;
3. REQUESTS the Director-General:
  - (1) to continue to promote intersectoral and integrated approaches for the prevention and control of cardiovascular and other noncommunicable diseases in childhood and youth;
  - (2) to encourage particularly the elaboration of integrated community control programmes for noncommunicable diseases for application in developing countries, so that the community can participate actively in the prevention of risk factors that engender these diseases;
  - (3) to intensify the distribution of appropriate information, including success stories and the results of studies;
  - (4) to increase support for research aimed at comparative evaluation of different diagnostic, therapeutic and preventive procedures with regard to cost, effectiveness, compliance and side effects, and for the elaboration of appropriate recommendations;
  - (5) to take appropriate action to mobilize further extrabudgetary support for global, interregional, regional and national activities within the programme;
  - (6) to promote the development of appropriate health information systems, particularly in developing countries, for planning, management and evaluation of cardiovascular and other noncommunicable disease prevention programmes.

May 1989 WHA42/1989/REC/1, 38

## CARDIOVASCULAR DISEASES

### WHA36.32 The Thirty-sixth World Health Assembly,

Recalling resolution WHA29.49, which invited the Director-General to prepare a long-term programme in the field of cardiovascular diseases, with special emphasis on promotion of research on prevention, etiology, early diagnosis, treatment and rehabilitation, as well as on coordination of international cooperative activities in this field;

Recognizing cardiovascular diseases as the main cause of morbidity and mortality in virtually all industrialized countries, and aware of their increasing significance as a cause of ill health and death in many developing countries;

Considering that appropriate technology now exists to prevent and control a growing number of cardiovascular diseases such as rheumatic heart disease in children, coronary heart disease, and hypertension resulting in cerebrovascular accident;

Encouraged by the report of the Expert Committee on Prevention of Coronary Heart Disease,<sup>1</sup> which gives detailed guidance for the development of national strategies for the prevention and control of such disease;

Concurring with the recommendation of the seventy-first session of the Executive Board that additional funds be allocated to the cardiovascular diseases programme with particular reference to accelerating the implementation of the programme strategy for the prevention of coronary heart disease;

1. APPROVES the lines of action of the Organization's long-term programme in cardiovascular diseases, which was developed in response to resolution WHA29.49, and notes with appreciation the results since achieved;
2. URGES Member States to pay particular attention to the wide possibilities for prevention and control of cardiovascular diseases as an integral part of their national health plans;
3. REQUESTS those Member States which have the capacity to do so to provide financial and technical support to developing countries in implementing their programmes;
4. REQUESTS the Director-General:
  - (1) to continue and further strengthen the activities of the Organization in the field of cardiovascular diseases as formulated in its long-term programme and implemented during the Sixth General Programme of Work, and as approved in the Seventh General Programme of Work;
  - (2) to take appropriate action to further mobilize extrabudgetary support for global, interregional, regional and national activities within the programme, and to use, when necessary, funds from the Director-General's Development Programme and from the Development Programmes of the Regional Directors concerned;
  - (3) to promote within the Organization close technical collaboration among the various programmes supportive of these goals, and further coordinate the development and implementation of the cardiovascular diseases programme with activities carried out by appropriate nongovernmental organizations, other international organizations, and leading scientific institutes;
  - (4) to report periodically on the progress achieved through his annual reports to the Health Assembly.

May 1983 WHA36/1983/REC/1, 28

<sup>1</sup> WHO Technical Report Series, No. 678, 1982.

## DIABETES MELLITUS

### WHA42.36 The Forty-second World Health Assembly,

Recognizing that diabetes mellitus is a chronic, debilitating and costly disease attended by severe complications including blindness and heart and kidney disease;

Noting that diabetes already represents a significant burden on the public health services of Member States, and that the problem is growing, especially in developing countries;

Aware of the support of the International Diabetes Federation and the WHO collaborating centres on diabetes;

1. INVITES Member States:
  - (1) to assess the national importance of diabetes;
  - (2) to implement population-based measures, appropriate to the local situation, to prevent and control diabetes;
  - (3) to share with other Member States opportunities for training and further education in the clinical and public health aspects of diabetes;
  - (4) to establish a model for the integrated approach to the prevention and control of diabetes at community level;
2. REQUESTS the Director-General to strengthen WHO activities to prevent and control diabetes, in order:
  - (1) to provide support for the activities of Member States with respect to the prevention and community control of diabetes and its complications;
  - (2) to foster relations with the International Diabetes Federation and other similar bodies with a view to expanding the scope of joint activities for the prevention and control of diabetes;
  - (3) to mobilize the collective resources of the WHO collaborating centres on diabetes.
3. URGES Member States to strengthen the development of cancer control measures or, where they are lacking, to consider initiating them, as an integral part of national health plans, allocating resources so as to reach the largest possible segments of the population;
4. ASKS Member States to consider making voluntary contributions to support WHO's activities in cancer prevention and control, including research;
5. REQUESTS the regional committees to review activities for the control of cancer in their regions in the light of WHO's reoriented cancer programme;
6. REQUESTS the Director-General:
  - (1) to ensure that WHO's reoriented cancer control programme is vigorously pursued, making optimal use of all available resources, and that it is properly monitored and evaluated;
  - (2) to continue to promote coordinated action for cancer prevention, control and research, *inter alia* by strengthening the work of the Director-General's Coordinating Committee on Cancer through outside expertise, especially in the field of health services research;
  - (3) to promote, within the programme of the Organization, the further coordinated development and implementation of the long-term programme of international cooperation in the field of cancer, emphasizing optimal integration with other related activities of the Organization and collaboration with other intergovernmental and non-governmental organizations concerned;
  - (4) to report to the Thirty-seventh World Health Assembly on progress in implementing this resolution in the Organization's work.

May 1989 WHA42/1989/REC/1, 39

## CANCER

### WHA35.30 The Thirty-fifth World Health Assembly,

Noting the Director-General's progress report, prepared in accordance with resolution EB61.R29, on WHO's work in the long-term planning of international cooperation in the field of cancer;<sup>1</sup>

Recognizing the continuing growing prevalence of malignant diseases throughout the world and the importance of their health and socioeconomic consequences;

Considering that previous mandates from the Health Assembly in respect of WHO's programme in the field of cancer, set out in resolutions WHA26.61, WHA27.63, WHA28.85 and WHA30.41, request the Organization to play an important role in promoting relevant cancer control measures, including coordinated cancer research;

Noting that the intensification of activities at WHO headquarters and in the regions, and the progress made since WHO's cancer programme has been given a new orientation in accordance with the Global Strategy for Health for All, have enabled the Organization to establish more effective cooperation with Member States in developing and implementing national cancer control programmes;

Reaffirming the necessity for further development of international cooperation in the field of cancer;

1. THANKS the Director-General for his report;
2. ENDORSES the recommendations of the Programme Committee of the Executive Board<sup>2</sup> and of the Subcommittee on Cancer of the Advisory Committee on Medical Research;

May 1982 WHA35/1982/REC/1, 23

## RHEUMATIC DISEASES

### WHA29.66 The Twenty-ninth World Health Assembly,

Having considered the Director-General's report on rheumatic diseases;

Taking into account the importance of such diseases as a cause of long-term disablement and their serious socioeconomic consequences;

1. IS OF THE OPINION that the prevention and control of rheumatic diseases should constitute an integral part of national health programmes, and that greater efforts are required to provide appropriate services within those programmes;

2. NOTES with satisfaction the work of the International League against Rheumatism in having 1977 designated as World Rheumatism Year, which will provide an opportunity for close cooperation between the various organizations concerned with the fight against rheumatic diseases;

3. RECOMMENDS that the World Health Organization should continue to assist governments, on their request, in promoting services for the prevention and control of rheumatic diseases, research in this field, and the training of rheumatologists.

May 1976 233, 42

## ORAL HEALTH

### WHA42.39 The Forty-second World Health Assembly,

Aware that the promotion of oral health is an integral part of health for all by the year 2000, and that the use of fluorides has been highly successful in reducing caries and oral diseases in many countries;

Recalling resolutions WHA22.30, WHA28.64, WHA31.50 and WHA36.14 in this regard;

Realizing, however, that in some countries, particularly the developing ones, oral health status is deteriorating where preventive strategies are not being applied or maintained;

1. REAFFIRMS that it is necessary for those countries which have not already done so to establish national strategies for oral health promotion, the prevention of oral diseases and appropriate care, making full use of the extensive technology now available, including management techniques;

2. URGES Member States to make full and appropriate use of the international collaborative oral health development programme, strengthened by the partnership of WHO with the International Dental Federation, the WHO collaborating centres, and the intercountry centres for oral health, and by the work of the Federation and other nongovernmental organizations;

3. REQUESTS the Director-General:

(1) to continue to support collaboration between WHO and the above-mentioned centres and organizations, and to mobilize resources for action and research for the promotion of oral health as part of primary health care;

(2) to strengthen WHO's programme for the promotion of standard methods and approaches for prevention and care, and for training;

(3) to promote preventive oral health programmes within primary health care.

May 1989 WHA42/1989/REC/1, 41

ANNEX C

List of INTERHEALTH demonstration projects

AFRO: Tanzania  
Mauritius

AMRO: Chile  
Cuba  
USA (Florida, Texas, Stanford)

EMRO: Cyprus

EURO: Russia  
Finland  
Malta  
Lithuania

SEARO: Sri Lanka  
Thailand

WPRO: People's Republic of China (Tianjin), Beijing

ANNEX D

List of CINDI countries

Austria  
Belarus  
Bulgaria  
Canada  
Croatia  
The Czech Republic  
Estonia  
Finland  
Federal Republic of Germany  
Hungary  
Israel  
Kazakhstan  
Kyrgyzstan  
Lithuania  
Malta  
Poland  
Portugal  
Russia  
Slovakia  
Slovenia  
Spain (Catalonia)  
Turkmenistan  
Ukraine  
United Kingdom

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