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THE INTERCOUNTRY MEETING ON INTEGRATION OF NON-COMMUNICABLE DISEASES INTO PRIMARY HEALTH CARE

Alexandria, Egypt, 29 November - 2 December 1987

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WORLD HEALTH ORGANIZATION
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1. INTRODUCTION

The WHO Regional Office for the Eastern Mediterranean convened a Meeting on Integration of Non-Communicable Diseases into Primary Health Care at the Regional Office (EMRO) from 29 November to 2 December 1987, with the following objectives:

- to review the situation of non-communicable diseases (NCD) in the Eastern Mediterranean Region (EMR);
- to introduce participants to the essential elements in national action programmes, emphasizing community-oriented prevention and control;
- to outline a plan of action for integration of NCD into the existing health services and primary health care (PHC).

In his inaugural address, Dr Hussein A. Gezairy, Regional Director for the Eastern Mediterranean, highlighted the change that has taken place in the epidemiological profile of the Region. While prevalence rates for morbidity and mortality related to communicable diseases are decreasing, prevalence rates for non-communicable diseases, including cardiovascular and cerebrovascular diseases, cancer and mental illness are increasing. The main reason for this change is the intensification of programmes related to prevention, cure and care of communicable diseases, coupled with improvements in environmental sanitation and, above all, greater accessibility of these services to the people through the primary health care approach. He emphasized that due to the importance of optimal utilization of national resources, particularly in primary health care, the trend of WHO's work was to promote integration of NCD activities into primary health care. He stated that promotion and strengthening of this programme, together with health education and commuity participation, were in the front line of activities in this field. The present meeting is a follow-up action of Resolution WHA 38.30 passed by the World Health Assembly in 1985, wherein the Director-General was asked to "foster and promote community studies aimed at the joint control of a number of risk-related non-communicable diseases". Finally, the Regional Director noted the role of changing life-style factors in affecting NCD incidence and pointed out that health education was the key strategy to bring about the desired changes in population behaviour conducive to healthy living.

In conclusion, the Regional Director wished the Group every success and hoped that its deliberations would provide the Region with necessary recommendations and proposals for the development of an integrated programme for community control and care of non-communicable diseases in the countries of the Region.

Dr Lu Rushan, Assistant Director-General, in his address to the group, stressed the importance of developing and improving a strategy for health promotion in general but relating to non-communicable diseases in particular. He noted that coronary heart diseases and cancer, are among the biggest killers in the world, and stressed the fact that unhealthy life styles head the list of reasons for high incidence of major non-communicable diseases.

Dr Shigan, Director NCD, WHO, Geneva, referred to the social and demographic trends in many countries which are introducing new challenges to public health. He stressed that with the increasing control of communicable diseases and existence of intensive public health programmes, emphasis is shifting towards non-communicable diseases as being of increasing importance, not only in developed but also in developing countries. According to available data more than 80% of deaths are caused by non-communicable diseases in developed countries. This proportion is nearly 50% in developing countries. Thus the high prevalence rates of NCD warrant immediate concern. Dr Shigan then described the developmental aspect of the NCD programme at Headquarters, Geneva. He noted that it used to deal with the development of individual programmes such as cardiovascular diseases, cancer, diabetes, etc., in addition to programmes oriented toward risk factors, e.g. smoking, diet, etc. While these programmes are proceeding in the right direction with the realization of their stated objectives, a new programme was launched some years ago as an Integrated Programme for Commuity Health in Non-Communicable Diseases, INTERHEALTH. This programme combines, in a feasible manner, resources and approaches currently being devoted to the prevention and control of selected NCD (cardiovascular diseases, cancer, diabetes mellitus, respiratory diseases and risk factors) through the vertical programmes.

He explained in considerable detail the operational frame-work of the INTERHEALTH programme and the development of demonstration projects in several countries in different Regions of the world. He hoped that the deliberations of the meeting would enable decision-makers in the countries of the Eastern Mediterranean Region to formulate and implement this programme through the development of one or more demonstration projects.

The following participants were unanimously elected as Officers:

Dr Qais Habib from Iraq, as Chairman
Dr J. Bajaj, WHO Consultant, as Rapporteur

2. EPIDEMIOLOGICAL SITUATION OF NON-COMMUNICABLE DISEASES

Global situation analysis of non-communicable diseases

Non-communicable diseases represent a growing and costly public health problem in developed countries and are rapidly encroaching on developing countries as well. In addition to major NCD like cardiovascular disease and cancer, other NCD bring untold suffering and are a burden to all societies. According to the World Health Statistics Annual (1984), sixteen developing countries of the Western Pacific Region of WHO reported, for the first time, more deaths from NCD than from infectious and parasitic diseases. More recent data indicate similar trends in other Regions.

In the general context of the world health situation, the pattern in industrialized continues to be characterized by cardiovascular problems which are of paramount importance while that in developing countries - encompassing the great majority of the world's population - shows clearly that cardiovascular diseases are emerging as a public health problem of major importance there too. As communicable disease control is more and more

successful resulting in increased life expectancy, increasing industrialization and urbanization produce cultural and environmental changes which accelerate the development of NCD.

Health priorities for most of the developing countries are nutrition, communicable diseases and environmental hygiene. However, economic and social changes are modifying demographic and health conditions, and bringing about changes in age distribution patterns, life expectancy, and consequently, new public health priorities. Such trends have been documented in many developing countries, e.g. Cyprus, Jordan, Kuwait and Qatar.

Hypertension is ubiquitous, and prevalence rates of around 150 per thousand exist in both developed and developing countries. Its main complications, cerebral stroke and heart failure, are world-wide problems, especially in older age groups, and it is also a risk factor for ischaemic heart disease. A multi-national WHO-coordinated programme on community control of hypertension has demonstrated that, despite differences in health care systems, control of elevated blood pressure in entire populations is feasible and cost effective. The programme was carried out over a period of five years in each centre, and in most populations a decline of 20-30% in the incidence of cerebrovascular stroke was already evident by the third year.

Based on current estimates, about one third of cancers are potentially preventable today. Enough is known about the causal relationship in the development of common tumours such as skin, lung, oral and liver cancers to allow active measures to be taken to prevent them. At least one third of cancer patients can be cured provided the diagnosis is made sufficiently early. For certain tumour sites like cervix, skin, mouth, breast, rectum, and prostate, many years may elapse between the cellular inception and the established tumour, thus permitting early detection when the cancer is still amenable to cure.

Diabetes mellitus affects more than 80 million people throughout the world and the number is increasing rapidly, especially in developing countries. Epidemiological surveys conducted in several developing countries show that prevalence rates of diabetes mellitus vary from 1 to 4% in the populations studied.

Estimates made on the basis of the projected population and changes in the demographic profile in developing countries, indicate that the number of diabetics will rapidly increase and in the year 2000 reach about 65 million people.

A major step towards the prevention of insulin-dependent diabetes mellitus (IDDM) is the identification of people who are genetically susceptible to the disease. Such people appear to have a defective immunological mechanism which, under the influence of some environmental "trigger", attacks their own insulin-producing cells. With further research it should be possible to prevent such attacks or to control the self-damaging process before the disease is irreversibly established.

Recent epidemiological, clinical and laboratory investigations have highlighted contrasts in diabetes mellitus between and even within countries. This heterogenity is illustrated in the revised classification of diabetes

mellitus and appearance of malnutrition-related diabetes mellitus (MRDM) as a major clinical subclass, ranking with IDDM and NIDDM (non-insulin-dependent diabetes mellitus). Characteristically occurring in poor communities in tropical developing countries, MRDM affects large numbers of young people, causing chronic ill-health and early death.

Modern trends in the morbidity structure of diseases show an increasing role for genetic conditions in human pathology. Hereditary diseases cover a wide spectrum of conditions ranging from severe congenital disorders to complex and variable genetic predisposition. The incidence of congenital disorders in infants is estimated to be about 40 per 1000, half of which are severe conditions which can cause early death or life-long chronic diseases.

The importance of genetic services in health care systems is justified by the fact that in developed countries congenital disorders now account for the majority of physical and mental handicaps in childhood. It has been shown that 5% of all children at age seven suffer from some kind of impairment, and that at least 80% of these handicaps are congenital in origin. In developing countries where under-nutrition and infectious diseases can be prevented, congenital disorders have emerged as a major residual cause of infant mortality and morbidity. Health statistics in such countries indicate that about 20% of infant mortality is due to congenital malformations and hereditary diseases. In addition, many infants with a severe congenital disorder are likely to be susceptible to infections, and, thus, most affected children simply die in infancy without attracting special attention.

3. REGIONAL OVERVIEW

It is well known that health priority areas for many of the countries of the EMR and for a large proportion of its population are still undernutrition, communicable diseases, maternal and child health and environmental hygiene. However, the rapid and drastic socio-economic changes currently being experienced are modifying demographic and health conditions, along with traditional modes of life and behavioural patterns, and bringing about shifts in age distribution and life expectancy. Consequently, new public health problems are appearing and new priorities and strategies will have to be set up.

3.1. Health situation and health-related problems

(a) Demographic situation

The total estimated population of the Region is 336 million. National populations vary considerably from countries with less than one million to countries with nearly 100 million. Six of the 23 countries of the Region account for approximately 75% of the total population of the Region, i.e. some 260 millions.

(b) Socio-economic conditions

In the EMR there is the broadest possible variety of socio-economic development. Per caput incomes range from the world's highest to the lowest.

(c) Morbidity

Available information from the Region indicates that 45% of deaths are due to infectious diseases, 14% to cardiovascular illness, 10% to perinatal conditions, 4% each to cancer and injuries and 23% to other causes.

(d) Health care delivery infrastructure including manpower and health resources

In most countries of the Region there is a three-tiered system of health services at central, regional and peripheral level. Priority is still given to large hospitals and high-level medical care in urban areas with, often, neglect for the remote districts. Nevertheless, there is a trend toward the development of a health care system based on PHC in many of the countries of the Region.

The coverage of health services and medical care in remote areas, and for special groups such as nomads and refugees, is still a serious problem in a number of countries. In addition, both the nature and the quality of medical services available in the above-mentioned situations vary considerably, depending upon availability of financial resources and of medical and other health manpower, and upon pre-existing services and prevailing health policies and traditions.

There is no reliable information on expenditure on health; however, such expenditure by governments and other sources is steadily increasing, although proper distribution and utilization of resources within the health services often present problems.

(e) Patterns and trends in health-related behaviour

It is generally accepted that human behaviour greatly influences all aspects of health and disease. For example, there is a close relationship between ischaemic heart disease and hypertension, smoking, over-eating, sedentariness, the abuse of animal fats and refined sugar as well as of alcohol and coffee, etc.

Abuse of alcohol has not yet emerged as a major health problem in the Region largely due to the strong influence of the predominant religion, Islam. However, smoking is widespread and is gradually increasing, particularly among women and youth. The same trend applies to over-eating and abuse of animal fats and refined carbohydrates, especially in certain social layers and affluent societies.

There are very few major epidemiological studies evaluating the 'risk profile' on a nation-wide scale in the Region. Some epidemiological studies have been carried out on myocardial infarction and hypertension in some countries, but a general scientifically-based picture of this matter is still lacking.

3.2. Major non-communicable diseases in the EMR countries

(a) Cardiovascular disease (CVD)

Among the chronic NCD, CVD (including coronary heart diseases, stroke and rheumatic heart diseases) is an important factor contributing to disability. It is the leading cause of death in six countries of the Region, followed by either infectious or parasitic diseases or accidents. There is a large variation in the proportion of deaths caused by CVD (from 10.3% in Syrian Arab Republic to 55.8% in Jordan).

In some countries of the Region a large number of deaths due to cardiac arrest or cardiac failure are recorded under cardiovascular diseases. On the other hand, many cases of death due to hypertensive encephalopathy or renal failure are recorded under nervous system or kidney diseases. The rate of CVD mortality in the general population of EMR countries is not exactly known. With the increase of certain life styles and general improvement of socio-economic conditions and the known close relation between these factors and ischaemic heart disease, it is expected that the latter will increase.

(b) Cancer

Until recently cancer was considered a relatively minor health problem in the EMR but is now emerging as a major health hazard, mainly due to rapid changes in socio-economic conditions. The most important types of cancer contributing to this situation are bladder cancer, largely related to infection with schistosomiasis; uterine cervix carcinoma, mostly related to inadequate hygiene conditions; mouth and lung cancer due to smoking and chewing tobacco; oesophageal abdominal lymphoma due to poor socio-economic conditions during childhood; nasopharyngeal carcinoma due to Epstein-Barr virus; and skin and breast cancer.

It is estimated that neoplasms account for between 3 and 20% of all deaths in the Region, reflecting various patterns of health problem. However, neoplasms are believed to account for only 1 to 4% of all causes of morbidity.

(c) Diabetes mellitus

Diabetes mellitus, especially the non-insulin-dependant type, is one of the most common NCD in the Region and is a cause of mortality and disability, especially blindness. Prevalence rates vary considerably. For example, in Kuwait the rate is 14.8 per thousand for nationals and 12.2 per thousand for non-Kuwaitis, while in Jordan, the West Bank and Gaza and the Syrian Arab Republic the prevalence rate is between 6 and 8 per thousand. Although the precise picture of the incidence and prevalence of the disease is not yet clear, information available indicates an increase in the number of reported cases. The disease has been recognized as a major health problem in Cyprus, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Tunisia and West Bank.

3.3. Other areas of non-communicable diseases

(a) Mental health

Among NCD, mental ill health constitutes one of the largest causes of morbidity. It is estimated that serious mental and neurological disorders such as psychosis, epilepsy, dementia and mental retardation, affect ten to twenty persons out of every thousand. The number of so-called minor, but nonetheless debilitating, mental disorders such as depression, anxiety, hysteria, and psychosomatic disorders are thought to constitute four to five times this number. It is further estimated that more than 20% of persons who visit primary health care centres have no definitive organic illness; their symptoms are largely due to psychological stress.

However, the importance of mental health lies not only in the high prevalence of mental illness. A large number of physical illnesses and some of the major causes of death, e.g. cancer, cerebrovascular diseases and heart diseases, as well as traffic and other accidents, can be directly linked to negative behaviour and unhealthy life styles. A recent WHO report points out that over 50% of mental and neurological disorders are now preventable. Similarly, new evidence exists that a large number of NCD are preventable. In view of this the introduction of behavioural sciences and mental health principles into health programmes assumes even more crucial importance than it did before.

(b) Accidents and injury control

Accidents of all types, especially those involving road traffic, are among the leading causes of morbidity and mortality in all countries of the Region, especially among productive young males.

(c) Oral health

There is a high prevalence of dental caries and, to a lesser extent, of periodontal disease as evidenced by the situation assessment undertaken in the majority of Regional countries. Some countries have established national oral health programmes integrated with PHC. These involve dentists, oral hygienists, health educators, school teachers and primary health care workers.

(d) Hereditary diseases

Among hereditary disorders, thalassaemia appears to be one of the most comprehensively reviewed. Prevalence of thalassaemia has been reported as being 1-2.5% in some of the countries of the Region, and is definitely perceived as a health problem by two of the Member States in the Region.

4. COUNTRY PRESENTATIONS

Bahrain

Data was provided which demonstrated that the incidence of morbidity and mortality due to infectious and parasitic diseases has declined sharply. Concurrently, there has been an increase in the percentage of reported death rates from cardiovascular disorders and cancer, the former now being the

leading cause of mortality in Bahrain. The PHC system has been strengthened to include preventive programmes of NCD, with the identification of major targets including:

(a) strengthening of the surveillance system for the collection of data on prevalence, incidence, morbidity and mortality of NCD, especially cancer, cardiovascular diseases, diabetes mellitus and chronic respiratory diseases;

(b) development of measures specific to cancers that are preventable, so as to achieve a significant reduction in their incidence;

(c) assessment of the extent of the problem of cardiovascular diseases, the identification of risk factors responsible for the high prevalence of these diseases and the promotion of activities aimed at preventing the development of such risk factors; and

(d) identification of risk factors for non-insulin-dependent diabetes mellitus and the initiation of measures to bring about the desired changes in life styles of the population as appropriate remedial action.

The main strategy for implementation of the programmes would be through the integration and strengthening of health education activities within the frame-work of primary health care services.

Cyprus

Cyprus, as a small island with about half a million citizens has a fairly well developed health care system consisting of a large public sector (covering 70% of the population with medical care free of charge) and a smaller private sector, backed up by a high standard of living amongst the average population. These factors are expressed in the comparatively good health indicators. National efforts to combat thalassaemia and, increasingly, major non-communicable diseases like diabetes, cancer (for which hospital-based registration is in operation) and hypertension should be particularly stressed. A register relating hospital discharges and outpatient attendences was established some years ago; however, an acceptable means of gathering mortality statistics will be implemented in 1988 only. A feasibility study was performed a few years ago in order to estimate the prevalence of certain health problems and common risk factors for major NCDs.

Health education programmes promoting NCD prevention (diabetes, cancer, hypertension, accidents) have been implemented through television, radio, newspapers and other media-oriented channels. Particular television programmes are aimed at schoolchildren and a number of steps in the direction of community organization have been successfully made.

Based on the experiences gained, it has been decided to launch in 1988 a formal demonstration project for prevention of major non-communicable diseases, in two administratively defined areas of Cyprus (an intervention and a reference area). A project protocol and manual of operation is being prepared. This project will cover all the necessary elements of information systems support to planning and management of PHC. The baseline survey will be implemented by the end of 1988.

Jordan

Statistics for 1986 showed that, while infectious diseases continued to constitute the major cause of death among children under five years of age, NCD, including coronary heart diseases, hypertension, cerebrovascular disease, cancer, and traffic accidents, were the main cause of morbidity and mortality for all age groups.

The Ministry of Health has taken the necessary steps to:

- conduct studies regularly on the morbidity and mortality of NCD among the Jordanian population;
- improve the notification system of these diseases;
- strengthen health education programmes at central and peripheral levels to promote the interest of communities so as to bring about a desirable change in life styles; and
- integrate NCD services into PHC programmes.

Iran (Islamic Republic of)

Non-communicable diseases like CVD, diabetes and cancer play a dominant role as health problems. Statistics are based, however, mainly on estimates from different sources; rheumatic heart disease is prevalent in both children and in adults according to estimates from hospital figures. But of NCD mortality 27-35% is due to CVD and about 8% to coronary heart disease. Hypertension prevalence is age-dependent and varies from 10 to 35%.

About one million Iranians have been estimated to suffer from diabetes mellitus. Cancer mortality is about 6.8% with the main sites being skin, oesophagus, stomach, breast and bladder.

A national PHC programme is underway to ensure that by 1991 the total population is under coverage. NCD prevention has been given increasing attention, particularly aiming at public health education and key groups like medical professionals. Currently, hypertension, diabetes, rheumatic fever and ischaemic heart diseases, and cancer have high priority. An important element of the nation-wide approach aims at banning smoking and stopping cultivation of tobacco within the next 21 years. Vertical programmes for the above-mentioned diseases have been agreed, consisting of primary and secondary prevention, including treatment, and setting-up of an information system (e.g. cancer registry) wherever possible.

For early diagnosis and detection of some common cancers in women the teaching of breast self-examination and the PAP smear have been integrated into all family health services of PHC.

The health sector is supported by legislation prohibiting the advertisment of tobacco as a main risk factor for NCD. The support of mass media is also applied in increasing public awareness about responsibility for health and risk factors.

Iraq

In spite of the fact that no sufficient or accurate statistical data are available for NCD, comparison between the official health statistics 1976-1984 shows a definite increase in mortality due to CVD and traffic accidents and a notable decrease in mortality due to infectious diseases, including tuberculosis.

Among NCD, traffic accidents are the major cause of mortality (32.5%) while cardiovascular disease and malignant tumors account for 21.8% and 12.4% respectively.

During the last few years the Government has established a nation-wide programme for prevention and control of major non-communicable diseases, especially hypertension, rheumatic fever and rheumatic heart diseases and diabetes mellitus. Research in the field of diabetes mellitus, hypertension, and RF/RHD has been developed. There is a general consensus about the role of the major risk factors in NCD such as smoking, overeating, unbalanced nutrition, and excessive physical activities.

The Ministry of Health is prepared to support the integrated approach utilizing community participation for the prevention and control of major NCD.

Kuwait

The data indicates that there has been an increase in the prevalence and incidence of cancer, diabetes mellitus and cardiovascular disorders. For cancer, the crude annual incidence rose from 32.7% to 36.2% over a period of eight years. The annual incidence of diabetes mellitus was 40.95% in 1985. Hypertension represents 1.8% of out-patient attendances. The rate of hospitalization for acute myocardial infarction in Government Hospitals (per 100 000 pop.) was 72.8 in 1978 and 170.56 in 1984. As part of national health policy it was decided in 1980 to bring down the rate of undiagnosed or untreated cases of hypertension to 25% or less by 1985 and to 10% by 1990. It was also decided to reduce the existing incidence and death rates of CVD by 25% every ten years. In Kuwait it has been recognized that NCD result from unhealthy life styles and, accordingly, steps have been taken and a programme is at the implementation stage. It will cover school health education, family and community health education, and training of medical professionals in health-related problems and health education.

Lebanon

The major NCD in Lebanon are allergy, hypertension, heart diseases, diabetes, respiratory disease and thyroid diseases.

Hypertension and ischaemic heart diseases are the major causes of mortality and morbidity among NCD, followed by cancer and diabetes mellitus; chronic respiratory diseases and allergic conditions, are the other major important NCD.

These chronic conditions were analysed in a sample of 13 735 Beirut residents. This population sample represents the permanent residents of Beirut, irrespective of nationality, during one year. However, the lack of

basic adequate health information in Lebanon has blocked the activities of the Government at different levels of health care. In addition, the prevailing conditions of the past twelve years have increased the problem, leading to the disintegration of health services throughout the country.

Pakistan

The incidence and prevalence of major non-communicable diseases has increased over the past 10-15 years. The major non-communicable diseases are cardiovascular diseases, diabetes mellitus, cancer, and chronic respiratory diseases.

Coronary heart disease, rheumatic fever and rheumatic heart disease are major causes of mortality throughout the country. Diabetes mellitus has increased over the years and some estimates indicate that its incidence is around 2% in Pakistan. Cancer is becoming another major cause of morbidity and mortality. The minimum estimate for incidence of cancer is 40-50 per 100 000 of the population. Chronic respiratory diseases have also increased during the past few years. These diseases, such as asthma, bronchitis, emphysema and bronchectasia are extremely common and pose major health problems. The following preventive measures have been established.

CVD: Large district hospitals and some private hospitals have facilities for coronary care. Facilities for early detection and treatment of hypertension are available at hypertensive clinics in these hospitals. An anti-smoking campaign has been in operation for 6-8 years. The media are being used effectively to introduce nutritional education and promote a healthy life style.

Cancer: There are nine functioning nuclear medical centres in the country for early detection of cancer. They have out-patient facilities for screening and early diagnosis and in-patient facilities for long term investigation and treatment.

Diabetes: Prevention is practised at primary, secondary and tertiary level through genetic counselling and teaching change in life style as part of the role of PHC in management of diabetics.

Respiratory diseases: The Government has accepted its responsibility to promote action to control smoking as part of the general health education. Mobile units with chest X-ray machines for early detection of these diseases are operating.

Sudan

Accurate data is lacking as far as vital statistics and certain health indicators are concerned. It was estimated, however, that the prevalence of cardiovascular diseases rose from 8.6 per 1000 in 1984 to 12 per 1000 in 1985. This trend applies also in chronic respiratory diseases (67.1 to 268 per 1000), diabetes (2.4 to 4.5 per 1000) and cancer (0.3 to 0.9 per 1000).

In order to incorporate preventive measures into basic medical care, nurses and community health workers, midwives, etc, have been trained in health education through lectures, posters, individual communication, etc. This is being backed up by information through television, radio, cinema and

other media. In November 1984, a seminar was organized in Khartoum in collaboration with the MOH, WHO and the International Union for Cancer concerning smoking and health. Thus several national preventive activities have been launched.

Tunisia

Tunisia, with a relatively young population (40% under 15 years of age) of 7.6 million has a well developed medical care system. Between 1962 and 1985 the number of the Ministry of Health-related institutions increased from 4 to 20, university hospitals from 0 to 16 and local hospitals from 53 to 75. The situation regarding certain health indicators of the population and vital statistics are in accordance with the Regional overview.

Some studies have been performed to achieve better insight into the health burden from major NCDs. Hypertension has become highly prevalent in the population over the last 40 years (males 26%, females 37%) and even more so in women using oral contraceptives (50.5% against 8.8% in non-users). Diabetes mellitus has a prevalence of 2.3% and is increasing for those above 50 years of age. One fifth of the population is obese, of whom a high proportion suffers from diabetes mellitus. No valid figures are available for the general population regarding cancer. Chronic bronchitis is significant particularly in higher age groups and smokers: 3.8% in non-smokers, 14% in smokers, and 17% in moderate smokers compared with 29% in heavy smokers (over 20 cigarettes per day). Asthma is fairly frequent affecting 2.34% of the population; although prevalence does not vary much according to sex or urban/rural factors, it does differ between north and south.

The health care system at large is aware of these health burdens and the necessity to intervene both in the population at large and in defined groups at high risk. Improvement of the situation should be reached both through primary and secondary prevention, and within the frame of the developing PHC and specialized care systems.

A non-communicable diseases programme does not as yet exist because of lack of financial resources and the increasing cost of treating coronary heart disease, chronic respiratory diseases etc.

5. NON-COMMUNICABLE DISEASE PREVENTION AND HEALTH PROMOTION

5.1. Present trends of major NCD

In the developed countries mortality from all NCD has fallen in the last ten years. If this trend continues without preventive action being taken, the differences between developed and developing countries may increase. Since it is not easy to reduce already high risks for a population, efforts should be directed toward maintaining a low risk-factor profile wherever possible (i.e. in developing countries).

The first step toward disease prevention is to establish a suitable system for gathering information concerning the main health burden on a country through monitoring mortality, morbidity and risk factors. Since reliable population-based data, and trends for morbidity and risk factors are almost completely lacking in EMR, mortality data and some other official

statistics are absolutely essential for evaluating preventive projects and for planning PHC.

The economic features of certain populations are inversely associated with NCD mortality trends: e.g. as gross national income has risen, CVD mortality has fallen in European countries. It might be interesting to look into such figures in developing countries.

Although, for the time being, only crude death rates are available for countries of the EMR, there seems to be no relation between NCD mortality rates in general, and energy or fat intake; there is a positive relation for these in industrialized countries. However, crude CVD mortality rates from some developing countries do indicate a relation with energy intake, as in industrialized countries. This may be expressive of that same imbalance in diet in certain layers of the population which causes high infant mortality but which also, ironically, prevents CVD in later life. There are also, now, clear indications in the Region of changes in food habits toward higher risk foods, particularly in the richer countries. It is, therefore, necessary to look into these statistical relations through demonstration projects for NCD prevention, within PHC, but with a research component included in order to support the local, national and Regional strategy for HFA 2000.

5.2. Strategies for integration of NCD into primary health care

The identification of clusters of possibly related non-communicable diseases has provided an understanding of causes and mechanisms. The link may be common or related causes e.g. lack of physical activity and obesity for non-insulin-dependent diabetes mellitus and coronary artery diseases, or it may be a cause and effect relationship, e.g. enhanced arteriosclerosis leading to cardiovascular disease in non-insulin-dependent diabetics. Thus, in a given population, the occurrence of such disease clusters provides leads for the design and implementation of intervention programmes. Integration of those approaches that focus various intervention strategies on a single disease or that apply a single strategy to the prevention of several diseases, constitutes the conceptional basis of Interhealth. It has been defined as an integrated programme for the prevention and control of NCD. Resources and approaches are devoted to the prevention of related conditions and permitting joint single management of activities that should lead to the prevention and control of major NCD and to the promotion of health in whole communities. The operational feasibility of such an approach is supported by the rationale that control of risk factors and facilitation of interaction among health and other services may have a major synergistic impact on a much larger set of disease conditions, with obvious benefits in terms of enhanced effectiveness and reduced costs.

The principal long-term objective of such an integrated programme is to reduce the impact of more than one major NCD in the community, while the intermediate objective is to address several risk factors or other related factors, as identified through epidemiological studies. The immediate short-term objective relates to the implementation of pre-identified intervention activities through the combination of the resources of health services and community organization.

The intervention strategy is based on the premise that control and care of NCD should be a part of PHC, and should effectively combine with the

existing health care services and available health manpower resources to provide a holistic, rather than a vertically structured approach. Thus, the main thrust of the programme must revolve around PHC.

Several experiences in the past, such as that of the North Karelia programme in Finland with its focus on CVD and the Kashmir programme in India with its focus on diabetes mellitus, indicate the validity of such conceptual planning in both developed and developing countries and are further justification for enlarging the scope of such activities to include other major NCD.

5.3. Experiences of recent and current NCD prevention activities

The results from recent and current international projects in NCD prevention present overwhelming evidence that these diseases can be just as easily influenced as their causes.

Major risk factor trials in hypercholesterolaemia, hypertension and smoking have made very useful attempts to substantiate the causal role of risk factors. The design of this type of study, however, concentrating as it does on a single factor, is rather artificial, since all major NCD are caused by a number of factors. Moreover, influencing one single factor may lead to general changes in attitudes toward health with resultant influence on other factors.

More natural approaches, including risk factor studies with a multifactoral approach, were also considered to be artificial. Generally, it was not their aim to modify health attitudes and behaviour of the general population with its network of different interactions (between risk factors and between diseases) at different social and other levels. These factors are determined by individual and community responses to health education and disease prevention.

Community-based studies clearly indicate that NCD programmes are feasible and effective (in terms of changing risk factor profile and disease outcome throughout the population). Many of these demonstration projects, however, were too small to prove all the effects in a proper statistical analysis. Possible short-comings have been recently stressed: inefficient prevention, unnecessary dichotomy between primary prevention and treatment, difficulties in changing the attitudes of general practitioners, inequalities in education, limited support from governmental bodies, improper analysis of reasons for motivation and non-motivation and lack of relations between research and routine practice in PHC.

5.4. Education of health personnel and the public

The growth and development of health services and manpower in developing countries generally reveals that: (a) health services and health manpower have been developing in an isolated manner, without any proper linkage; (b) the process of health manpower development has not been as rational as it might have been, due probably to less concern for manpower resources as compared to concern for physical, technical and technological facilities; (c) there has not been an appropriate balance between planning, production and management in the health manpower development process; and (d) there has been

far less concern, almost amounting to negligence, for the planning and production of allied health professionals, as compared to that for medical manpower.

A key element of primary health care, or any health care system that attempts wide population coverage at relatively low cost, relates to health manpower development (HMD). The essential components of HMD are planning, production and management of health manpower. A prerequisite for health manpower planning is the availability of essential data on the categories, number, functions, deployment and utilization of all health manpower in any country. The main objective of health manpower production is the education and training of various types of required personnel in predefined numbers. Health manpower management aims to ensure the appropriate deployment and utilization of those trained, with an essential focus on monitoring and evaluation, so that appropriate feed-back is provided to ensure necessary mid-course corrections and adjustments in relation to social needs and social dynamics.

5.5. Nutrition and NCD

Over some two million years mankind developed, through biological evolution and selection, physiological mechanisms which have become genetically fixed, such as the sodium-saving mechanisms of the kidney, mechanisms to accumulate body fat to survive phases of food deficit, ability to synthetisize vitamins and need for complex carbohydrates for normal function.

The modern dietary situation, of the developed countries at least, does not fit in with this genetically built background: too much energy, sugar and salt and too few complex carbohydrates (dietary fibres), vitamins and polyunsaturated fatty acids, creating an imbalance between animal and vegetable products.

Although a dietary deficit still exists in many countries of the EMR, per caput consumption figures have, in the last twenty years, started to indicate a trend similar to that in developed countries. In 1977, Cyprus, Egypt, Iran (Islamic Republic of), Libyan Arab Jamahiriya, Sudan, Syrian Arab Republic and Tunisia already exceeded the "average world intake" of energy; the fat intake in these countries is generally increasing due, in part, to increased meat supply. Sugar intake in the Region increased on average almost 30% and exceeds the "average world intake" in Cyprus, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Pakistan and Tunisia. Vegetable product intake is increasing at a slower rate particularly for complex carbohydrates (e.g. dietary fibres).

It is worth noting that dietary-related factors which induce hypertension were missing in the foodstuffs of prehistoric hunters and gatherers as they are also in present-day populations with low mean blood pressure and low prevalence of hypertension; particularly missing was excess of salt, saturated fat, high calories and alcohol. Likewise, dietary factors promoting health and preventing disease were more frequent in the diet of prehistoric mankind just as they are in populations leading a "natural" life style today, i.e. dietary fibres, vitamins, (poly-) unsaturated fatty acids, and generally a diet poor in fat and rich in fibres, vitamins and trace

elements. A diet which prevents hypertension also promotes health and prevents other NCDs such as cancer, diabetes etc.

5.6. Intersectoral cooperation

An essential element of programme implementation and strategies is the establishment of intersectoral cooperation between the different elements of a programme. This intersectoral cooperation is not only applicable in programme management but at all levels, including PHC. Before starting the community-oriented programme it is necessary to identify the key element for such cooperation in the community. The activities required of the various sectors at different levels of implementation are listed below.

Ministry of Health

- Operation of national plans, with short and long term objectives;
- establishment of information system;
- training of health professionals, especially physicians and nurses;
- re-examining the primary health care level with a view to incorporating programme activities;
- monitoring and evaluation of programme, etc.

Ministry of Agriculture

- Continuous effort to stimulate the production and consumption of healthy foods;
- development of labelling of agricultural products and the provision of statistics on their consumption.

Ministry of Education

- Information about health as a part of all school and kindergarten training curricula;
- modifying the curricula for training of health and social services personnel.

Ministry of Finance

- Taxation on tobacco and alcohol products;
- subsidies on all beneficial foodstuffs.

Other ministries, such as Transport, institutions and mass media also have a key role to play in intersectoral cooperation.

Agriculture and Health

The eating of certain agricultural products, when combined with other factors such as stress, poor work conditions and sedentary living, can cause or accelerate a variety of severe, often fatal, diseases, including cancer,

heart failure and stroke, mainly among persons over 40 years of age. Agricultural policies can improve health, by taking into account the health implications of the agricultural processes.

Tobacco and narcotics have become major causes of ill health and mortality in the developed world, and are becoming significant health hazards in developing countries. Undoubtedly the strategies used to combat these health risks must be at the centre of global as well as national health strategies.

The balance of agricultural products and government subsidies, together with policies related to processing and demand for farm products, determines whether consumers are offered more or cheaper saturated fats, tobacco, or refined sugar instead of fibrous foods, polyunsaturated fats, or complex carbohydrates. The food and nutrition policy in Norway is a good example of the initiatives taken in an industrialized country to evolve an intersectoral consensus on policies and actions for achieving nationally accepted nutritional goals. It illustrates how the agriculture and health sectors have cooperated in management of food policy.

5.7. Information system support

Participants were shown how to draft a demonstration project protocol including items which were to be considered essential: justification, choice of the area, hierarchy of objectives, methods and components, intervention, evaluation, timing and management.

Main emphasis was given to evaluation and a necessary information system; process and outcome evaluation were thought to be essential elements. Essential tools of evaluation are mortality statistics for the disease groups under consideration and statistics on population, the health care system, living conditions, and, particularly, diet and smoking (per caput statistics). Individual data (by survey) are also essential in order to describe the risk factor profile, usual behaviour and health status.

Means of selecting samples of the population and examining them were reviewed. It was stressed that a certain research element is necessary to justify the benefit of preventive measures implemented in the daily practice of PHC or other forms of NCD prevention or health promotion.

6. WORKING GROUP DISCUSSIONS

The participants were divided into two groups to discuss the essential elements in national action programmes for integrated NCD prevention and control, core NCD and risk factors and to set up priority areas for action. The following were the comments of the two groups.

6.1. Justification for an integrated programme

It was noted that comprehensive data on morbidity and mortality were lacking in most country reports. However, all the reports mentioned clearly the fact that communicable diseases are declining in the Region while, at the same time, non-communicable diseases, in particular CVD, cancer and diabetes are increasing. It was also noted that coronary heart diseases and cancer

are the greatest killers in most countries in the Region. It was, therefore, felt necessary to have a joint programme for the control of these NCD.

The justification for this integration is based, not only on epidemiological grounds, but also on other factors such as: acceptability and accessibility of the PHC concept; escalating costs of medical treatment; lack of resources to deal with these chronic diseases; common factors related to lifestyle; greater fasibility and effectiveness of a programme designed to control these diseases in an integrated way rather than separately; savings through coordination of the work of various specialized vertical programmes.

6.2. Integration with PHC

All countries of the Region are full committed to the declaration of Alma Ata and to the concept of Health for All by the Year 2000 and as all the Member States have established some sort of primary health care system, it was confirmed that NCD services should be integrated into the PHC delivery system of a country.

6.3. Core diseases

The groups suggested the following as diseases and problems which might be considered to form a core group to be integrated in a single NCD programme:

- cardiovascular diseases;
- cancer;
- obesity;
- chronic respiratory diseases;
- mental illnesses;
- accidents
- diabetes mellitus;
- allergic problems;
- genetic disorders;
- drug abuse.

These were reviewed carefully and, taking into consideration the common risk factors which make it easy to implement a concerted attack on a group of diseases rather than on individual ones, it was felt that five diseases should form a NCD core. This core is constituted as follows:

- CVD;
- cancer;
- diabetes;
- accidents;
- chronic respiratory diseases.

Two points have to be mentioned here: (i) the ranking of these diseases may differ from one country to another depending on their priorities; (ii) a country can add to or delete from this core according to the national situation.

6.4. Risk factors

Studies conducted during the past twenty years have identified a number of factors that increase the risks of developing one or more NCD such as

heart disease or cancer. Most of the risk factors fall into two broad categories, negative life style and environmental hazards.

CVD

Three major risk factors have been identified: diet, high blood pressure, tobacco and cigarette smoking. The higher the level of each, the greater is the risk. Several minor risk factors have also been identified, the most important of which are physical inactivity, diabetes and stress. The presence of more than one risk factor increases the risk of developing heart disease.

Cancer

Diet plays an important role in developing some cancers. Cigarette smoking is responsible for most lung cancer and also increases the risk of developing cancers of the mouth and bladder while excessive alcohol consumption is a risk factor for cancer of the oesophagus, stomach and liver. Studies have shown that alcohol and cigarette smoking have a synergistic effect. Toxic substances in the environment and the work place are thought to contribute to cancer rates, but have not been precisely quantified.

Diabetes

Diet, lack of exercise, environmental pollution and genetic factors pose risks for the the development of diabetes. Furthermore, smoking may act synergestically with diabetes in producing CVD in the elderly.

Respiratory Diseases

The two main risk factors for the development of respiratory diseases are smoking and air pollution which cause lung diseases.

Traffic accidents

The most important risk factor for traffic accidents is the excessive consumption of alcohol and drug abuse. Minor risk factors are stress and negligence while driving.

In conclusion, the risk factors cited as common for most of the prevalent NCD are all factors related to unhealthy life styles. The integrated approach should therefore include a common strategy for promoting change in life style; this would have an impact on the risk factors for a number of NCD.

6.5. Programme for NCD control

It was found that most countries of the Region have not yet formulated a national programme for the control and prevention of NCD. Some Member States have realized the importance of the control of NCD and have initiated some activities in this respect. However, it is felt that a comprehensive programme should be outlined and tested as a demonstration project in some countries of the Region. It was suggested that Bahrain and Cyprus might be suitable venues for such projects. The group then identified the following

priority areas for the development of strategies and approaches for an integrated programme of NCD.

Health manpower development and the role of the health system

The main principle is to develop the existing health and health-related systems by improving their services, including planning and management. Reorientation of health services toward primary prevention is needed (i.e. a certain initial investment is necessary). This includes secondary health care services and other health-related sectors. Risk factors should be controlled simultaneously (including hypertension and diabetes). The PHC team should actively support a healthy style of living, indirectly by delivering information and training through the educational system, and directly through personal communication with patients and high risk groups.

Education of the public to change attitudes and social values

Real attempts should be made to set up health education for the public which may include personal counselling, group work, the media, posters, leaflets etc. Local traditional healers should be involved as much as possible. Health education should be continuous and part of the daily practice, it is supposed to be the routine activity of the PHC team and others such as religous leaders, teachers, midwives. An atmosphere should be created that makes the healthy life style socially acceptable and desirable (non-smoking, non-obese, physically fit etc). Attempts should be made to implement health education in school curricula (dietary education, no-smoking, physical exercise etc.).

Measures to facilitate changes in the risk factor profile

It is necessary to obtain some support from other sectors, e.g. agriculture, food industry, to promote healthy diets (restaurants, shops selling foods etc.). Restaurants etc. should be encouraged to assist by regularly offering healthy meals. Such restaurants should receive special support (e.g. certificate). Community organizations should be convinced of the benefit of delivering information and training (motivation, skills) to the population regarding the harmful effects of smoking, improper diet and lack of physical activity. Support is needed from specialists (medical doctors, psychologist, sociologist, behavioural scientists) in order to adapt people to stress, and to supply the project with appropriate methods for changing inadequate behaviour (role modelling, social learning etc.). Appropriate resources for recreation and physical activity should be made available for the public.

Role of the government and international bodies

Ministries of health should acknowledge indicative NCD as a major health problem and, thus, support the demonstration project and apply the incoming results to their national policies. Other administrative bodies should also become involved, on both a local and a national level (agriculture, food industry, education, finance etc.). Initiatives are needed from governments at the international level to share experiences and problems of NCD prevention and health promotion. WHO should support the project with expertise, fellowships, training courses, educational material and specific funds.

7. CONCLUSIONS

1. The meeting came to the conclusion that there was epidemiological evidence from most of the countries of the Region indicating an increased rate of morbidity and mortality due to non-communicable diseases especially cardiovascular diseases, cancer, and diabetes mellitus. Due to varying socio-economic developments within the countries of the Region, communicable diseases are, and continue to be, the most significant cause of morbidity, mortality and disability in some countries of the Region, especially in the age group below five years.

2. There was a consensus of opinion that the evidence for the causal relationships between a number of life style and environment-related risk factors and major NCD was scientifically sound. It was also indicative of future trends wherein an increase in the morbidity and mortality due to NCD in all countries of the Region was anticipated, unless action for community-based health intervention is initiated.

3. It was recognised that the clustering of a number of NCD, on the basis of common causal risk factors, and possible strategies and approaches which may reduce the burden of morbidity and mortality of a number of NCD, provides scientific basis for intervention through an integrated approach to community care and control of NCD.

4. There was a consensus of opinion that cardiovascular diseases, cancer, diabetes mellitus, mental and psycho-social disorders, chronic respiratory diseases and road accidents constitute the core of NCD which are of major interest in the EMR. It was agreed that Member States should consider this as a flexible grouping and modify, add or delete other diseases according to local situations.

5. The meeting appreciated the role of WHO in stimulating the development of an integrated programme for community health in NCD as a global strategy, with emphasis on development of Regional initiatives.

6. It was recognised that primary health care systems in all countries of the Region, with major emphasis on health promotion, disease prevention and development of support, link and referral services, were at different stages of development and operationalization.

7. Irrespective of the stages of development of PHC in the countries of the Region, the need was recognized to incorporate the integrated programme of NCD into the existing PHC system.

8. It was agreed that the high-risk approach which is mainly used in primary health care, and the mass strategy approach involving the reduction of risk factors in the whole society, are complementary and facilitate primary prevention.

9. There was unanimous expression of the need to establish health information systems within the countries where these do not exist, and to strengthen and support such systems in other countries, so as to generate an appropriate and sound data base for supporting primary health care and for implementation of an integrated programme for NCD.

8. RECOMMENDATIONS

1. There is a need to develop integrated programmes for community health in NCD in the countries of the Region.

2. Where appropriate, the existing PHC systems should be supported and strengthened so as to be receptive to an integrated approach to community care and control of NCD.

3. Re-orientation and training of existing health manpower should be undertaken with a view to optimizing performance in relation to defined tasks for the care and control of NCD. Such curricular reforms should be incorporated in the courses and training of all categories of manpower including doctors, nurses and allied health professionals.

4. Community resource persons such as religious leaders and school teachers should be provided with appropriate learning experience so as to enable them to serve as important instruments for triggering and catalyzing desired behavioural changes in the community.

5. Other community resources, such as practitioners of traditional systems of medicine as recognized in some countries, should be gainfully utilized wherever there is a community acceptability of such resources and therefore a likelihood of effective compliance facilitating desired behavioural outcome.

6. Action strategies should be evolved to make health education more pervasive and with the potential to make a discernible impact on health-related behaviour in individuals, families and the community. Special target-groups including policy-makers, planners and decision-makers should be sensitized so as to enlist active support and cooperation.

7. The health manpower requirements for PHC, with special emphasis on the community care and control of NCD, must take cognizance of the fact that individuals, families and the community constitute a most important resource of health manpower. Educational processes at all levels, including school education, must aim at the incorporation of such learning experiences that may lead to desired changes in health behaviour.

8. Social, moral and mental health and physical education must constitute a holistic approach. The curricular contents of training courses for school teachers, and more particularly of instructors of physical education, should include health-related components so as to make them more responsive to health needs.

9. Voluntary organizations should be identified so as to ensure a participative interaction with the health professionals and facilitation of programme implementation.

10. Health service strategies should be improved in quality and realistic projections made regarding additional health manpower skills required for implementation of an integrated programme, made so as to ensure expeditious and effective implementation of the programme.

11. An inventory of learning materials and educational software available for NCD programmes should be developed by WHO through the possible cooperation of several agencies in different sectors. The materials and software so produced should be made available to the countries of the Region for further modifications and adaptations.

12. Social and behavioural scientists should be actively involved in Regional programme development so as to provide appropriate methods for changing inadequate or inappropriate behaviour leading to development of healthy life-styles in the individual and the community.

13. Intersectoral cooperation between health, education, social welfare, human resources development, agriculture and all other related sectors should be developed both at district and sub-district organizational levels and central coordinating levels.

14. Demonstration projects in selected countries of the Region should be developed so as to evaluate their replicability within the countries, and also within the Region. The instruments to be used in such demonstration projects should be made available to the countries and a meeting of experts belonging to a variety of disciplines should be convened so as to make such instruments more relevant to the needs of local programme and demonstration projects.

15. Every effort should be made to increase operational, health-care-oriented research as a special component of demonstration projects. Such research should be both formative (related to process evaluation) and summative (related to the project outcome).

16. WHO should undertake periodical reviews of existing knowledge on the causes of major NCD with a view to disseminating this information to the countries of the Region.

17. Periodical reviews of existing methodologies for community-based interventions should also be undertaken, and relevant and useful information provided to the countries.

18. Steps should be taken to promote educational training for health personnel in health promotion and disease prevention strategies through exchange of consultants, fellowships, training courses, and organization of one or more workshops, specifically related to the development of national protocols for demonstration projects and the training of allied health professionals.

19. Epidemiological, behavioural and health system research, planned and coordinated as a multi-disciplinary activity, should be supported to generate information that would facilitate the realization of defined objectives.

20. Regional mechanisms should be developed by EMRO in consultation with Member States so as to facilitate the development of planning and monitoring of an integrated programme for NCD.

Annex 1

AGENDA

1. Opening session and election of officers

2. Overview of WHO activities

2.1. Regional overview (health and health-related problems with reference to major non-communicable diseases (NCD)

2.2. Global overview (WHO programme of NCD)

3. Country presentations

4. Epidemiological situation of NCD

5. Justification of NCD prevention and health promotion in PHC

5.1. Present trends of major NCD and life-style patterns, compared with primary and secondary prevention in developed countries with outlook for developing countries

5.2. Integration of prevention and control of major NCD into PHC

5.3. Experience of recent and on-going NCD prevention activities in developed countries

6. Nutrition and NCD

7. Practical issues of NCD prevention and PHC strengthening

7.1. Information system needed to support PHC and NCD prevention

7.2. Risk factors in NCD - Methods of identifying persons at risk

7.3. Education of health personnel and health education of the public as part of PHC planning and management

8. Intersectoral cooperation

9. Working Group discussions (implementation of NCD in PHC and drafting a pilot protocol for national demonstration projects)

10. Conclusion and recommendations

Annex 2

LIST OF PARTICIPANTS

BAHRAIN	Dr Rifaat A. Mahmood Director Public Health Directorate Manama
CYPRUS	Dr Charitini Komodiki Senior Medical Officer Department of Medical and Public Health Services Ministry of Health Nicosia
EGYPT	Dr Abdel Hay Kamel Marzouk* Curative Medicine Ministry of Health Cairo
	Dr Mohamed Hammouda Member General Administration of Primary Health Care in rural areas Ministry of Health Cairo
IRAN (ISLAMIC REPUBLIC OF)	Dr Parviz Vazirian Director General Non-Communicable Diseases Ministry of Health and Medical Education Teheran
IRAQ	Dr Qais Dhahir Habib National NCD Focal Point Ministry of Health Baghdad
JORDAN	Dr Qais Halawah Director PHC Centres Ministry of Health Amman

* did not attend

KUWAIT	Dr Yousuf Al-Mumen Ministry of Public Health Kuwait
	Dr Mansour Sarkouh Ministry of Public Health Kuwait
LEBANON	Dr Abdalla El Ajouze Medical Officer Ministry of Health Beirut
PAKISTAN	Dr Banday Ali Syed Physician Allama Iqbal Memorial Hospital Sialkot
	Dr K.A. Azeem Consultant Physician Federal Government Services Hospital Islamabad
SUDAN	Dr Abdel Raouf Suleiman Mustafa Public Health Specialist Preventive Medicine Ministry of Health Khartoum
	Dr Babiker El Khalifa Mohamed Senior Consultant Physician and Cardiologist Planning, Treatment and Teaching Ministry of Health Khartoum
SYRIAN ARAB REPUBLIC	Dr Akram Shaal* Head Epidemiological Department Ministry of Health Damascus
TUNISIA	Dr Mohamed Taoufik Skhiri c/o Ministry of Health Tunis

* did not attend

WHO SECRETARIAT

Dr Hussein A. Gezairy	Regional Director	WHO Eastern Mediterranean Regional Office
Dr Lu Rushan	Assistant Director-General	World Health Organization, Geneva
Dr M.H. Wahdan	Director, Disease Prevention & Control	WHO Eastern Mediterranean Regional Office
Dr E. Shigan	Director, Non-Communicable Diseases	World Health Organization, Geneva
Dr A. Modjtabai	Regional Adviser, Non-Communicable Diseases and Secretary to the Meeting	WHO Eastern Mediterranean Regional Office
Dr L. Heinemann	WHO Consultant	Central Institute for Cardiovascular Research, Berlin
Dr J. Bajaj	WHO Consultant	All India Institute of Medical Sciences, New Delhi
Ms A. Hetata	Conference Office	WHO Eastern Mediterranean Regional Office
Mrs N. Mourad	Secretary	WHO Eastern Mediterranean Regional Office