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WHO INTENSIFIED PROGRAMME FOR CORONARY HEART DISEASE PREVENTION

REPORT OF A

MEETING OF NATIONAL PROGRAMME MANAGERS

Geneva, 20-22 November 1985

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1. INTRODUCTION

Dr V.J. Grabauskas, Director, Division of Non-communicable Diseases, opened the meeting and welcomed participants on behalf of Dr H. Mahler, Director-General of WHO. In his introductory remarks, Dr Grabauskas stressed the importance of the WHO Expert Committee on the "Prevention of Coronary Heart Disease" (1), held in December 1981, which formulated a comprehensive strategy for prevention of coronary heart disease.

As a result of this Expert Committee and its report published in 1982, the 36th World Health Assembly held in May 1983, requested the Director-General in its Resolution WHA36.32 to intensify the WHO programme in prevention and control of cardiovascular diseases. This programme was formulated in 1984 including two components, namely, an action for the prevention of coronary heart disease, and an action for the prevention of rheumatic fever/rheumatic heart disease in developing countries. Of the 40 Member States who responded to a letter from the Director-General, 24 expressed their interest in coronary heart disease prevention component. The purpose of this meeting of national managers from member states interested in the programme of coronary heart disease prevention is to review the present situation in their countries and to discuss the future steps in implementation of the programme.

Several of the risk factors for coronary heart disease are also the risk factors for other non-communicable diseases. It is, therefore, essential to discuss the possible integrated approach to prevention of these diseases.

Effective prevention of coronary heart disease and other non-communicable diseases in industrialised as well as developing countries would be an excellent contribution to the overall WHO goal of "Health for All by the Year 2000".

Dr J. Huttunen was elected Chairman, Dr C.J.M. Lenfant and Dr R.G. Oganov Vice-Chairmen, and Dr Z. Piša Rapporteur. The Agenda is attached as Annex I and the List of Participants as Annex II.

2. ONGOING AND PLANNED ACTIVITIES

2.1 WHO Activities

During the last 30 years, research in epidemiology, prevention and control of cardiovascular diseases has led to an accumulation of knowledge on how some of the cardiovascular diseases could be prevented and controlled. Already, in 1959, the World Health Organization has established a CVD Unit with the intention to promote research and activities aimed primarily at prevention and control of these diseases. WHO has established its international position specifically in the area of epidemiology and preventive population studies. Through close collaboration with non-governmental organisations, specifically then with the International Society and Federation of Cardiology, its role has also been recognised in the scientific cardiological community.

In 1976, the World Health Organisation Assembly, through its Resolution WHA29.49, requested the Director-General to initiate a long-term programme in the prevention and control of cardiovascular diseases. The result was that several scientific projects have been started and in reports of several expert committees and scientific groups the present knowledge in CVD prevention and control was summarised and approaches to practical application proposed. (1, 2, 3, 4, 5, 6, 7, 8) The comprehensive strategy to prevent coronary heart disease, suggested by the Expert Committee on Coronary Heart Disease Prevention (1), decisively influenced the policy of governmental health authorities and their approach to deal with the epidemic of this disease in industrial as well as developing countries. In 1983 then the World Health Assembly adopted a Resolution WHA36.32 in which it requested the Director-General to further intensify the WHO cardiovascular disease prevention and control programme and instructed him to seek and allocate necessary funds for its implementation in cooperation with the Member States.

As a result a WHO Intensified Programme for the Prevention of CVD was formulated in 1984. The major objective of this proposal was to overcome the gap between knowledge and its application specifically for the prevention of coronary heart disease and rheumatic fever/-rheumatic heart disease.

To facilitate the communication and implementation of the programme, WHO approached member states to identify in their countries "national focal points" (institutions and/or individual experts).

In order to make the scientific and technical knowledge readily available, WHO has made arrangements for collaboration not only within WHO Headquarters, but also with the respective WHO Regional Offices. The use of available international expertise through collaboration with NGOs, specifically with ISFC, is being further promoted. Last but not least, a network of collaborating centres is being established as required by the Programme.

To facilitate the role of the CVD Unit HQ in the international coordination, a WHO Collaborating Centre for Coordination of the Intensified Programme for Prevention of Coronary Heart Disease has been established in cooperation with the Government of the ČSSR in the Research Department of Preventive Cardiology of the Institute for Clinical and Experimental Medicine in Prague.

2.2 Country Statements

2.2.1 Australia

Since 1967 when the mortality rates for cardiovascular diseases (CVD) in Australia were highest, there was an approximate reduction of 50 % in death rates for men and women in the age group 30 - 60 years. CVD still accounts for 42 % of all deaths in males in this age group and for 30 % of all deaths in females. The coronary heart disease (CHD) mortality rates fell between 1967 and 1983 by 41 % for males and by 45% for females. In 1983, in the age group 30 - 60 years the rate was 169 for males and 51 for females per 100,000 population. The causes of the falling mortality rates for CVD and CHD are not fully understood, but are thought to include factors such as better and more widespread control of hypertension and changes in the prevalence of other risk factors. Earlier and better treatment of CHD, particularly acute myocardial infarction, might also play a part.

At the present time, the activities directed to prevention of CHD and other CVD concentrate around the National Heart Foundation, founded in 1960. This organisation systematically promotes educational activities addressing the entire population. They are mainly in the form of education programmes. The most recent ones were dealing with hypertension (1984), with heart attacks, including information and recommendations concerning preventive action (1985), and with the control of smoking (1985). There is an intensive training programme on risk factors and cardio-pulmonary resuscitation, promoted by education officers to different community groups throughout the whole country. In addition, Risk Assessment Clinics assist in screening for risk factors in the population. Services to improve the health status of school children are also being organised (1985). The National Heart Foundation also financially supports several research activities, e.g., the two Australian centres collaborating in the MONICA Project. The national risk factor prevalence studies which provided the necessary information for the MONICA project are being carried out by the National Heart Foundation and the third survey is now being planned for 1988.

The Government of Australia has established in 1985 a "Better Health Commission" and commenced hearings to formulate a national programme. The Commission is expected to report by mid-1986.

The Department of Health initiated in 1985 plans for activities aimed at the development of a National Health Plan for Australia in prevention and control of cardiovascular diseases. Present intentions are to set up groups of experts to prepare documents identifying specific problem areas, to define their nature and formulate goals for an action plan.

2.2.2 Czechoslovakia

Cardiovascular diseases (CVD) are the leading cause of death in the country. In 1983, they were responsible for 54.3% of total mortality. Coronary heart disease (CHD) is the single most important cause of death, being responsible for 45% of all CVD mortality. During the last 15 years, the mortality rates for CHD in the younger age groups did not change. However, in 1982, the rates per hundred thousand population in the age group 40 - 69 years were for CHD still 443.4 for men and 134.9 for women.

Since 1972, the Government and specifically the Ministries of Health of the Czech and Slovak Socialist Republics promote activities related to prevention and control of cardiovascular diseases. The existing system of health care services which is accessible free to all people is utilised. In 1976, a "National Social Programme for the Prevention and Control of CVD" was launched. In its first phase it concentrated on acute coronary care. As a result, all patients with a suspicion of AMI are now in the whole country immediately hospitalised, and appropriate coronary care is provided in the intensive care departments.

Since 1983, the concept of the "National Programme of Prevention of Cardiovascular and other Non-communicable Diseases" was accepted. It is designed to implement the preventive activities utilising the existing health care system, specifically by its "first line". The approaches are tested in several administrative districts (approximately 100-200 thousand inhabitants each).

At the present time, two variants are being developed.

The first one aims at reaching the final objective to prevent CVD and other NCD through the prevention of coronary heart disease. It is coordinated by the Research Department of Preventive Cardiology of the Institute for Clinical and Experimental Medicine in Prague, in collaboration with the Ministry of Health of the CSR and is planned in two phases. In the first phase (1984 - 1990) the programme concentrates on the implementation of a "National Programme of Hypertension Control". It is also expected that it will also provide the necessary experience for a population approach in the prevention of coronary heart disease which should supersede the hypertension programme in 1991. Six administrative districts covering 600,000 inhabitants are involved. They are simultaneously the MONICA project areas. Through the MONICA project, necessary database is provided for evaluation of the programme.

The second approach is the development of an "Integrated Programme for the Prevention and Control of Non-communicable Diseases". It is coordinated by the Department for Curative and Preventive Care of the Ministry of Health of the CSR. The base-line surveys assess the levels of risk factors, attitudes of population and medical profession and other parameters according to the project protocol, designed by the WHO Regional Office for Europe. It is being carried out in eight administrative districts.

The data from both projects available now show the high prevalence of risk factors among the populations of the age groups between 25 - 64 years, both males and females.

The present experience in carrying out both programmes in the same country shows that the activities are complementary. Coordination of the programmes is ensured by the participation of the responsible principal investigators of each of the programmes in the steering committees of the programmes.

The governmental authorities of Czechoslovakia appreciate these activities promoted by WHO and in this respect also their collaboration with WHO, and provide full necessary support. The data provided by the projects are used by the Ministry of Health for planning purposes.

2.2.3 Finland

A marked increase in the coronary heart disease (CHD) mortality occurred in Finland from the 1950s until the 1960s. In late 1960s, CHD mortality began to decline and this

decline still continues. In the age group 35 - 64 years the average annual decline of CHD mortality in 1970 - 1980 was 1.8% for men and 3.4% for women. The decline has occurred in all counties in Finland, but the greatest change (2.7% per year) has taken place in North Karelia.

The decline in CHD mortality has been preceded and paralleled by the improvement of hypertension control and by reductions in dietary fat consumption, in population mean levels for serum cholesterol and in the prevalence of smoking among adult Finnish men. These changes have been particularly prominent in North Karelia, where a comprehensive community-based intervention programme was launched in 1970s.

Prevention of CHD has been pursued both at the national and local level. Health education for CHD prevention is coordinated by the Health Education Office of the National Board of Health. Advertisement and promotion of tobacco products and selling of tobacco products to minors was banned by a special antismoking law in 1978. Expert committees appointed by the Ministry of Health have prepared a national plan for the control of hypertension and goals and guidelines for healthy nutrition. Experience from the North Karelia Project is used to strengthen and to promote action at the local level. Special funds have been assigned for research on prevention of CHD.

A workshop with representatives from a wide range of disciplines and with expertise in the fields of health administration, health education, primary and secondary health care, food and agriculture, was held in November 1985 to discuss National Programme for Coronary Heart Disease Prevention. An action plan will be prepared on the basis of these discussions and will be ready in the spring months of 1986.

2.2.4 France

In 1982, the mortality for cardiovascular diseases (CVD) for all ages represented 36% of the total mortality. Out of it, 25% were due to coronary heart disease. The rates per 100,000 population for coronary heart disease were 121 in 1968, 134 in 1975 and 127 in 1980.

The analyses of the regional death rates showed that for men aged 34 - 64 years, it was higher in the north-east part of the country than in the southern part. Similar differences were found for other heart diseases and strokes.

The myocardial infarction registers reveal lower attack rate of myocardial infarction compared with other countries, namely, 2.1 per thousand men per year and 0.15 for women.

The consumption of alcohol tends to decrease as is the number of smokers. There is a lasting problem of the high tar yields of French cigarette tobacco (34 mg) which are the highest among industrial countries.

Among the OCDE countries, French population takes fifth place concerning the meat and poultry consumption and the first place concerning the consumption of cheese. Mean consumption for vegetables is similar to that of other industrialised countries than to that of other Mediterranean countries (44.2 gr/day compared to 57.8 gr/day respectively).

The population studies on the health priorities and attitudes to health issues showed that CVD are only the fourth place being preceded by problems of drugs, alcohol and cancer.

Since 1981, besides this nationwide action, special funds are allocated to Regional governments with the intention to promote their health activities, especially in the field of health education. One billion French francs were allocated to specific CVD prevention programmes. Health promotional and observational committees are being established on the regional level.

The French Health Educational Council acting on behalf of the Ministry of Health and Social Affairs launched national campaigns against risk factors and coronary heart disease, directed specifically against alcohol consumption (1976 and 1984), and to improve

nutritional habits (1984). Most nationwide programmes are now repeated at local level and are carried out by district health education committees.

In May 1985, the prevention of non-communicable diseases and mainly CVD were identified by the Government of France as a "Health Priority". A "National Commission for Cardiovascular Diseases" was established in June 1985. This multi-disciplinary group includes health professionals as cardiologists, nutritionists, dieticians and health educators, as well as representative of various Ministries (Health, Industry, Research and Technology, Agriculture). Its task is to prepare a plan for CVD prevention on the national level.

The WHO MONICA project has started in 3 collaborating centres with the full assistance of the highest governmental authorities.

The presently planned intervention activities are:

- (a) Approaches both to population and individuals;
- (b) Formulation of time-related targets, and preparation of a time related plan of action at national level.

2.2.5 German Democratic Republic

The mortality age rates for CVD in the age group 35-74 years are both for males and females at a medium level among the European countries. The CVD mortality was between 1968 and 1983 decreasing in females but fairly stable in men. Between 1968 and 1978 the trend in this age group was for men - 0.2 % annually, and for women - 1.4 %. Between 1978 and 1983 there was a decrease in CVD mortality of - 1.2 % annually for males and 2.0 % for females. However, there is a remarkable increase of CHD mortality in men according to the national statistics. But their methodological problems should be taken into account.

Concerning the morbidity, the results from the acute myocardial infarction registers show no decrease in the attack rate. The pre-hospital fatality was reduced markedly and the hospital fatality remained stable. Pronounced effect was registered in the field of rehabilitation after acute myocardial infarction, assessed by the percentage of persons returning to work. While in 1969 35 % returned to work, in 1983 it was already 75 % of survivals.

The different surveys done in the country in connection with epidemiological projects including MONICA show the following prevalence of risk factors in the adult population:

- hypertension: 20 %;
- smoking habits: 30 %;
- hypercholesterolaemia: 20 %;
- obesity: 20 %.

The mean cholesterol level in men is now 235 mg/dl. Concerning the trends in the risk factors, there is a certain improvement. While in 1970 50 % men were smokers, in 1983 only 40 % of them smoked. Physical activity among men increased during these years from 30 % to 40 %. The food consumption however is still high in the population. In 1983, meat consumption was 98 kg per person per year, and total fat intake was 33 kg per person per year.

The public health authorities of the country give priority to the programmes in cardiovascular disease prevention, concentrating specifically on prevention and control of myocardial infarction and control of hypertension.

Great attention is being paid to the development of data collection systems, specifically through the MONICA programme which started in 1983. At the present time, 3.1 million inhabitants are being covered by this project. Studies of nutritional and psycho-social factors are linked with it.

The "Integrated Programme of the NCD Prevention", as proposed by the WHO Regional Office for Europe for 1982 - 1992, covers five districts with 387,000 inhabitants included

in the intervention group and six other districts with 440,000 inhabitants serving as reference areas. A survey of a random sample of the population in the age group 30 - 69 years was carried out in 1982.

All projects are being coordinated from the Central Institute for Cardiovascular Research of the Academy of Sciences, GDR, with the help of different universities and medical institute departments as well as some of the county hospitals (e.g. Zwickau). A Research Council for Cardiology serves as the Scientific Advisory Committee to this Programme for the whole GDR.

2.2.6 Germany, Federal Republic of

Cardiovascular diseases (CVD) are, as in other industrialised countries, a major cause of death. In 1981, 240,000 men and women died prematurely of heart diseases. This represents one third of all deaths and a rate of 443 and 241 per 100,000 men and women respectively. The dramatic reduction in ischaemic heart disease (CHD) as seen in some countries over the last decade, has not been reproduced in the country. However, non-ischaemic heart disease is decreasing.

Overweight is a problem in one quarter of all adults. Higher serum lipid levels are seen in all age groups. They increase with age. Approximately 40 % of total energy intake of the population comes from fats in a diet that is more than adequate in energy. Salt consumption is high, averaging approximately 12 gr per day per person. Cigarette smoking and elevated blood pressure levels are also common. The use of oral contraceptives is widespread and one third to one half of all women in the reproductive age use this method of contraception.

A national intervention programme against hypertension is currently underway. Additionally, the Federal authorities are supporting the German Cardiovascular Prevention Study (Deutsche Herz-Kreislauf-Prävention Studie) which is the most costly medical research project under way in FRG at the present time. This study will attempt to reach half a million individuals in five regions. Its objective is to identify preventive measures which are most effective in changing lifestyles and risk profiles of the population. The speed and degree of the changes in risk profiles in the population are being monitored as are the changes in morbidity and mortality. The goal is to achieve a 10 % reduction in cardiovascular and cerebrovascular deaths in the age group 30 - 64 years in the intervention areas.

There are three intervention approaches involved in this project which began in 1985. Firstly, there is an intensive and creative use of modern mass media; secondly, the involvement and integration of the community leaders and personalities in this programme should multiply the effects of the health education provided through the mass media. Finally, there is a strong support given to the development and dissemination of the information about the available health services and availability of healthy foods on the market to make the choice of a healthier life style easier for the population.

The experience from this project will provide the basis for a national intervention strategy.

2.2.7 Ireland

Ireland is among the countries with the highest death rates from CHD and stroke. Over the past decade, when mortality from causes other than heart diseases has fallen, the relative proportion of deaths due to CHD has increased. Of the causes of premature death in Ireland today, CHD has ranked number one for more than two decades. 51 % of all deaths each year are due to CVD. Of this figure, 30 % die from CHD, 20 % from stroke and 1 % from other forms of heart disease.

Lifestyle characteristics associated with the epidemic of heart disease are hypertension, hypercholesterolaemia, cigarette smoking and obesity.

In Ireland, community health care is not directed in any structured programme towards the prevention of CVD including CHD.

Nevertheless, there are certain activities initiated recently which aim at the prevention of CHD:

- (a) A Mediscan is a programme of systematic screening for risk factors in the industry, and community centres.
- (b) Both primary and secondary schools are involved in a five year programme of Heart Health education of their pupils.
- (c) Health education is promoted by films, lectures at community centres and clubs.
- (d) Blood Pressure Clinics have been established in conjunction with the National Health Boards and 95 of them are now open to the public. Approximately 17,000 persons are being examined each year.
- (e) Cardiopulmonary resuscitation (CPR) is being promoted by the Irish Heart Foundation in a series of courses for industrial staff, Lions Clubs, Community Centres etc.
- (f) In collaboration with the Department of Health, the Irish Heart Foundation initiated the Kilkenny Health Project in 1985. It is a community health programme which aims at altering the environmental behaviour characteristics in the defined population of 70,000. It is planned for five years and the major objective is the modification of the risk factor levels and the risk of the population for CHD. The project is based on the North Karelia programme.

At the present time, national action is being conducted/planned in the following areas:

- (a) To maintain, develop and evaluate each year the schools' Heart Health educational programmes (1985 - 1990);
- (b) The Kilkenny Health Project (1985 - 1990);
- (c) To extend the role of the Blood Pressure Clinics to include blood cholesterol check;
- (d) To develop and expand the Mediscan/CPR in public screening/educational programmes;
- (e) To design and implement a medical educational programme on the treatment and management on CVD risk factors.

These activities involve the work and collaboration of the Irish Heart Foundation with the Regional Health Boards and the Department of Health.

2.2.8 Israel

Heart disease remains the number one cause of mortality in the country. In 1979, the age-adjusted CHD mortality for the age group 25 - 69 years was 347 per 100,000 population among males, and 205 for females. Concerning trends in mortality, between 1963 and 1979, there are two distinctive periods. While between 1963 to 1974 a slow continuous rise was recorded in annual mortality from CHD reaching the peak in 1973/74 of 452 per 100,000 population for males, and 303 per 100,000 population for females, between 1975 and 1979 a decline was registered. By 1979, a drop in CHD mortality was recorded of 23 % in males and 32 % in females. This was also reflected in the overall annual mortality trends from all causes which declined from 1,290/100,000 population to 1,160 for males and from 1,080/100,000 population to 870 for females.

A review of smoking habits, nutrition and physical activity during this period could not reveal any significant changes. The only major factor possibly related to this favourable trend was the significant rise in hypertension control. 75 % of persons with hypertension are now known compared to 39 % earlier. This is reflected in cerebrovascular mortality which decreased in the age-group 55 - 64 years between 1968 to 1978 by 27 % in men and 43 % in women. The age-group of 75 years and over recorded a decline of 20 % in cerebrovascular mortality during this period.

Concerning the population programmes in prevention of CVD, besides the very positive change in hypertension control, other intervention programmes were tried only on a limited basis. Recently, a combined project of the general public and the association of cardiologists, called "Heart to Heart Israel", has been established with the objective to

promote education of the general public for risk factor modification, cardiopulmonary resuscitation (CPR), development of rehabilitation centres and support for related research. There is a need to increase the involvement of governmental authorities to take the necessary action on the national level.

3.2.9 Japan

The mortality from coronary heart disease (CHD) is among the lowest in the world being 46 per 100,000 population in males and 38 per 100,000 population in females. The age standardized mortality rates for CHD are appreciably declining both in men and women. However, the trends for mortality for acute myocardial infarction are decreasing to a lesser extent. The analyses of the incidence of the CHD in some population seems to indicate that there is a slight increase. However, because of the very low rates, it was not easy to justify major preventive efforts on a national scale.

The prevalence of hypertension in the population is decreasing. There is a good compliance with the anti-hypertensive therapy, both non-pharmacological and drug treatment. The national figures for salt consumption are according to the National Nutrition Survey, of 12.4 gr per day per person. The mean cholesterol was 20 years ago around 160 - 170 mg/dl and is increasing through 190 mg/dl. The surveys show that the intake of fats and oils is increasing and approximately 24 % of total calories intake comes from fats. It is worthwhile to know that obesity is not yet a serious problem in general. The average body weight in Japanese is still several kilograms lower than the "desirable" weight as presented by a Japanese life insurance company. However, according to the recent National Nutritional Survey, the national averages in the intake of most nutrients already exceeded the estimated requirements for the Japanese people.

The smoking habit among Japanese men is the highest in the industrial countries. A slow steady decrease is recorded now. Smoking rates in women are the lowest in industrial countries, in general also slightly decreasing. However, among young women, the smoking habit is on increase.

Considering the present national health priorities, the first place is taken by research and prevention of cancer. The prevention of stroke receives the second priority, while the prevention of CHD hopefully will never get the top public health priority. Nevertheless, it could be a subsidiary programme in the national efforts and projects in the field of cerebrovascular disorders.

The present programmes directed at health promotion in the aged include certain elements which also deal with the prevention of CHD. It is the new "Health Act for the Aged" which integrates and promotes already existing activities based on different Acts prepared earlier. Its main objective is to provide their health and welfare by comparative efforts in the prevention and treatment of stroke and coronary heart disease. Its target is the Japanese population over 40 years of age. The Act covers primary and secondary screening, follow-up of persons with risk factors, medical care and rehabilitation, both in and outside hospitals. Based on the Labour, Health and Safety Act, the employees of industry and offices will have obligatory medical examinations every year and medical care will be provided in their workplace, or in hospitals. A problem remains with the incomplete practice in urban areas and follow-up of the employees in small companies.

A series of related epidemiological research activities being carried out in Japan, include the international cooperative studies, such as MONICA, INTERSALT, and CARDIAC.

The National Cardiovascular Centre, the local National Cardiovascular and/or Cerebrovascular Centres, the Universities, the Japan Heart Foundation, the Japan Medical Association, the Japanese Association for Cerebrovascular Disease Control and many other public and private organisations are playing a key role for the implementation of national programmes for the prevention of stroke and coronary heart disease. They closely cooperate in the promotion of the health educational activities targeted on the entire population, or specific professional groups.

The Japanese Government, specifically its Ministry of Health and Welfare and Ministry of Education, organise series of nationwide surveys utilising random samples of population (Annual National Nutrition Survey, Annual National Medical Record Survey, Annual National Health Attitude Survey and every five years the National Public Health Survey on cardiovascular diseases complemented every ten years by the National Survey on the circulatory disorders and the National Schools' Health Survey).

2.2.10 Jordan

Jordan has a population of 3 million out of which 52 % are below the age of 15 years. Only 11 % of the population are above the age of 45 years. 80 % of the population is insured medically by a National Health System, the rest being cared for by private doctors.

The medical care in the field of cardiovascular diseases is very well developed in the country. The leading institute is "The Queen Alia Heart Institute" in Amman. It carried out in 1985 a successful heart transplantation.

The activities in the field of prevention of CVD and CHD are non-existent. Nevertheless, the recent legislation on smoking is related to the prevention of CHD. It, for instance, requires to put warning signs on cigarette packets.

It is presumed that coronary heart disease is the first single leading cause of death in the country. However, the extent of the problem is not assessed yet. Reliable statistics on mortality and morbidity are not available. There are no surveys which could provide the reliable data concerning the prevalence of the risk factors. The percentage of smokers among men must be very high. The exact figures for the prevalence of elevated blood pressure and hypercholesterolaemia are missing. Hypercholesterolaemia, however, might be a problem in the population. Analysing the data from patients admitted to the hospitals for acute myocardial infarction, it is suggested that an important risk factor is also diabetes mellitus. At the present time there is not a national programme or a strategy being planned to prevent and control CHD in Jordan. However, it is expected that the collaboration with WHO might promote such an action.

Future efforts should concentrate preferably on defining exactly the extent of the problem of CHD and CVD among the population, collecting the data on mortality, morbidity and invalidity, and eventually prevalence of the disease in the population and attempting to assess their lifestyles.

In the nationwide strategy to prevent CHD, the first priority should be given to an anti-smoking programme, including legislation, a programme to control hypertension and to activities promoting the health education among different sectors of the community.

The Government is interested in the collaboration with WHO in this area, and would welcome direct contacts to collaborate on the formulation of a national strategy and national action plans in prevention of CHD.

2.2.11 Malta

In 1984, the cardiovascular diseases (CVD) were responsible for 55.2 % of total mortality. The mortality rates for coronary heart disease (CHD) are significantly higher when compared to other European Mediterranean countries (e.g. the standardised mortality rate for CHD for men aged 40 - 59 years is almost twice as high as that in Italy). The rates are at the level of Northern Europe. The explanation for this phenomenon is lacking.

The Malta Department of Health is committed to a programme of intervention aimed at lowering the mortality and morbidity caused by CHD. The planning and implementation of an intensified CHD Prevention Programme in Malta is in some ways facilitated and in other ways limited by the size of the Maltese population (332,000 inhabitants) and its geographic insularity.

The lifestyle characteristics of the Maltese population show a high and rising prevalence of smoking with a striking increase in the percentage of smoking females. There seems to be more physical activity among the population, although the precise quantification is lacking. The prevalence of hypertension is high as is the prevalence of diabetes mellitus.

The Government has given in 1984/85 a priority to professional education in prevention of CHD. A "core" document has been prepared summarising the evidence and discussing the available materials for preventive approaches. The document also presents guidelines and proposes targets to be achieved as far as the decrease in the risk factors levels in the population is concerned. The priorities for the immediate future are the continuing health education of teachers and an intensified health education programme for school children with appropriate revision of the curricula in schools.

In 1985, it was proposed to formulate a "National Action Plan for the Prevention of CHD" using the above mentioned "core" document as a basis. The Department of Health aims at integrating this plan into an overall plan and programme for prevention and control of non-communicable diseases.

2.2.12 New Zealand

In New Zealand, coronary heart disease (CHD) accounts for 1/3 of all deaths. As in the USA and Australia, New Zealand's mortality rates for CHD have also declined since 1968 by 17.0 % for males and 14.0 % for females. The reasons for this decline are uncertain.

Although sport and physical activity, especially jogging, are popular in the country, the New Zealanders tend to be overweight (a recent survey found 20 - 25 % of adult males and 30 - 40 % of adult females in this category). They consume a high fat high energy diet in spite of it that during the last decade there was a 20 % decrease in dairy consumption. The Health Department of New Zealand, the Cancer Society and the New Zealand Heart Foundation have all contributed to a prolonged anti-smoking campaign over the past 20 years. Smoking rates have fallen to 34.0 % for men and 28.9 % for women.

Following the publication of the Report of the WHO Expert Committee on the Prevention of Coronary Heart Disease (1), the New Zealand Department of Health recommended and the Minister of Health fully supported a proposal that the Department should adopt prevention of cardiovascular diseases (CVD) as one of its three priority programmes for the period 1986 - 1991.

In effect, planning and resources will be directed to:

- (a) A specific disease prevention programme involving clinical specialists, general practitioners, public health nurses, and other health personnel in a health promotional and secondary prevention programme working through professional groups, non-governmental organisations, such as the New Zealand National Heart Foundation, the New Zealand Medical Association, the New Zealand Royal College of General Practitioners;
- (b) A general life-style programme directed to CVD prevention initially, and general health improvement ultimately, working through a national health promotion advisory committee and community and educational workers and the mass media, aimed at reducing of smoking, dietary modifications, and encouraging more general moderate daily physical exercise.

A Technical Advisory Committee of experts (cardiologists, epidemiologists, and senior health administrators) has been established. This Committee has fully endorsed the recommendations of the WHO Expert Committee Report on Prevention of Coronary Heart Disease (1) and will now work closely with the Health Promotion Committee in devising guidelines for a national action plan/programme for the prevention of CVD.

The responsibility for the implementation of this programme will be undertaken by the Division of Health Promotion of the Department of Health working together with non-governmental organisations, voluntary organisations and other governmental departments

as Agriculture, Trade and Industry. The objective is to promote and coordinate activities at the community and national level.

The MONICA Project organisation in Auckland and the data provided by it are used in planning and will be used in the evaluation of the progress of the programmes as well as its impact on the health of the population.

2.2.13 Singapore

Coronary heart disease (CHD) mortality has risen sharply in Singapore over the last two and a half decades. It rose from 78 per 100,000 population aged 30 years and above in 1957 to 119 in 1970 before stabilising at annual level of around 198 between 1980 - 1983. In 1984, the rate rose once again to reach 215 per 100,000 population. At the present time CHD kills approximately 2,400 Singaporeans each year, and strokes add to it another 1,500 deaths. Mortality rates for CHD among males are twice as high as those for females. The rising trend is essentially seen among the older age groups, namely those aged 50 years and above. Inter-ethnic data show that Indian males are particularly prone to dying from CHD. The sex/ethnic specific mortality rates for males aged 30 years and above in 1984 were 815 for Indian males, 218 for Chinese males and 353 for Malay males per 100,000 population. Mortality rates among females of the three ethnic groups are more comparable, and averaged between 150 - 230 with the Indian females having slightly higher rates.

Levels of risk factors among the population have shown a decline in smoking rates from 23 % in 1977 to 19 % in 1984. The rate in males decline from 42 % to 35 %, while in females it declined from 4.5 % to 3.5 %. Prevalence of hypertension is 14 % in the population (ranging from 7 % among those aged 20 - 29 years and rising to 40 % among those aged 60 - 69 years).

Serum cholesterol levels were found to average 200 mg/dl and were similar among all the ethnic groups.

During the last decade, there has been a marked strengthening of activities related to the prevention and control of CVD in the country. Legislative action against smoking in public areas and on cigarette advertising were introduced in the '70s. A large scale national health campaign against harmful life-styles was mounted in 1979. The Ministry directed its main activities in the '80s against CVD. Mass media and health publications are being used to address and reach the general community as well as the work sites with the aim to introduce modifications of harmful life-styles with regard to risk factors. Health education was incorporated in the health curricula of primary schools. Teachers and health professionals organised seminars to educate school children and their parents in proper life-styles. The Health Education Department is undertaking a collaborative programme with WHO aimed at primordial prevention among school children.

In late 1985, a steering committee was set up with representatives from health policy makers, cardiologists, epidemiologists, health educationalists, members of the National Heart Association and the Sports Council. Its purpose is to formulate and develop a comprehensive National Programme to control CVD in the country. The targets set for the programme are to reduce the mortality rate from CHD by around 25 % by the year 2000. This would mean that the rate of mortality for CHD would be lowered to 170 per 100,000 population aged 30 years and over.

The comprehensive preventive programme to be developed is aimed to include a national hypertension screening programme involving doctors from primary medical services, both working in the governmental and private sectors, factory doctors and private specialists. Further, a nutritional educational programme would be considered, aimed to reduce fat and sodium consumption in the population. To increase habitual physical activity, a comprehensive sports and exercise programme is also being promoted among the population, and last but not least a comprehensive intensified anti-smoking programme.

The screening programmes to identify high risk individuals will be approached in a comprehensive way. The expertise and resources of specialists in cardiology, cardiothoracic

surgery, cardiac rehabilitation, neurology and neurosurgery, working in the governmental sector, will be harnessed with the aim of providing enough knowledge about the approaches to preventive actions for high risk individuals and persons at risk as well as to introduce systematic secondary preventive measures to patients after myocardial infarction and stroke.

There is a concrete plan to improve the information on morbidity for myocardial infarction and a myocardial infarction register in Singapore is being planned to be established with the assistance of WHO's consultant services in 1986/1987.

2.2.14 Sri Lanka

Sri Lanka is an island of 25,000 square miles with a population of 50 million, which has a state-run free medical service. In spite of producing about 400 doctors and 600 nurses yearly, due to the "brain drain" there is a manpower shortage and the medical services are run with less than half the required number of doctors and nurses.

The mortality statistics issued by the Register General show that cardiovascular diseases (CVD) are in the first or second place as the cause of death, and the clinical impressions suggest that coronary heart disease (CHD) is as common as in the developed countries. This has been attributed to the high consumption of coconuts, rich in saturated fat. Coronary heart disease (CHD) in Sri Lanka affects all social classes, and the consumption of coconuts does not defer much among them. While this finding concerning coconuts is not confirmed in all the population, there is definitely a wide range of possibilities for further research concerning the pathogenesis of atherosclerosis in the Asian population of Sri Lanka in relation to food habits. It has also been found that in spite of it that the "atherosclerotic index" in Sri Lanka is lower than in the Western countries, those among the inhabitants of the country who acquire atherosclerosis tend to develop a very florid form.

The national action to prevent and control CVD is being planned after several surveys carried out in the pilot areas will be finalised and evaluated. A cardiovascular survey has been done in the field practice area of the National Institute of Health Sciences from February 1983 to September 1984 utilising the family health workers. It has proved that a survey of such a type can be carried out by the primary health care personnel. For lack of resources this type of survey could now be extended only to another three areas. A survey on blood lipids is now being carried out in the towns of Colombo and Kandy.

After these surveys have been finalised, several new projects might be initiated. There might be a "coconut hypothesis" project of the intervention programme in a population where the coconut oil will be substituted by soya oil. The levels of blood cholesterol will be recorded.

It is planned to set up "The Sri Lanka Atherosclerosis Group" which should study various aspects of atherosclerosis in Sri Lanka. Studies are continuing on "young myocardial infarctions" including those under 40 years of age with the first MI. This seems a common problem in Sri Lanka and in some parts of India. Smoking seems to be the important etiological factor.

In its efforts to prevent and control CVD, the Ministry of Health has already set up an interdisciplinary "anti-smoking" committee which has already prepared a new anti-smoking legislation, and is planning an educational programme addressed to school children to prevent them taking up the smoking habit. The anti-smoking activities are influenced by the fact that the country is exporting and producing tobacco and therefore the vested interests have to be taken into account.

The focal point for all these activities in the country is the Institute of Cardiology of the General Hospital in Colombo, with the involvement of the Ministry of Health, Ministry of Teaching Hospitals, the National Institute of Health Sciences and the Faculties of Medicine of Sri Lanka Universities.

2.2.15 Switzerland

The country can be included among the "low incidence countries" as the mortality rates are low compared to other industrialised countries. The trend in CHD mortality between 1970 - 1980 among males was stable, and among females the rates were decreasing. Among males, the Swiss-Italians have higher risk than the Swiss French or Swiss Germans.

Concerning the risk factors in the population, the information available is based on the National Research Programme and on the MONICA data. The prevalence of smoking among males is 36 % and among females 28 %, while among young females the tendency to acquire the smoking habit is increasing. Hypertension has a prevalence of 11.7 % among adults and 14 % of adults are among those with cholesterolaemia equal or above 265 mg/dl (7.25 mmol/l).

Concerning the country health policy, priorities are cardiovascular diseases, cancer, accidents, suicides.

Regarding activities in the area of prevention of CHD in Switzerland, three phases can be described. The pilot programmes with regular scientific evaluation have been carried out in 1974 - 1982 with the objective to determine whether community health education can reduce cardiovascular risk factors in whole population groups. Two towns in the French-speaking part of the country and two towns in the German-speaking part of the country were selected for intervention or comparison. A final assessment was carried at the end of 1980 and showed that while in the intervention town 26.2 % of smokers quit during the study period, in the control area only 18.1 % did so. An additional significant increase was recorded in the proportion of hypertensive patients under effective control. Concerning the blood cholesterol levels, a reduction was recorded in both the intervention as well as reference towns with no difference between them. However, cholesterol levels in a sub-group of women participating in programme activities as compared to those not participating were significantly reduced. As a result of these studies a series of communes in different linguistic regions of the country started devoting their own activities since 1982. Prominent is the Canton of Tessin where a comprehensive programme making extensive use of mass media has been running since 1983.

For 1986 until the year 2000, generalisation of the experiences is being planned. A series of issues specifically related to the highly decentralised health care system are studied. The particularly important ones are the following:

- integration of the national/regional mass media campaigns and decentralised health care;
- improvement and efforts to involve doctors and other professionals in preventive control activities;
- promotion of special research activities related to the studies on health behaviour in relation to different socio-economic groups and groups with different levels of education.

The participation of Switzerland in the MONICA Project is considered a development of an information and data collection system for scientific evaluation of the intervention programmes.

2.2.16 United Kingdom

The mortality rates from cardiovascular diseases in all parts of the UK are high and relatively stable. As a result CVD and specifically CHD are of great concern both to the Department of Health and Social Security and to the scientific community.

The U.K. was one of the first countries to respond to the stimulus of the WHO Expert Committee on Prevention of Coronary Heart Disease (1). In 1981 the DHSS published a booklet, "Avoiding Heart Attacks", in which the importance of risk factors was explained and measures to reduce them recommended. In 1983 a conference, attended not only by cardiologists and health professionals but also by experts in agriculture, the food industry, the mass media and other related disciplines, was organised in Canterbury in order to draw up a national

plan of action to prevent CHD. Its report, published the following year, attracted widespread interest and served to draw attention to the problem.

The present strategy approaches the prevention and control of CHD primarily through programmes designed to reduce risk factors. In the area of control of smoking, legislation to ban TV advertisements was adopted as early as 1965 and a voluntary agreement with the tobacco industry curtails advertising in general. Further reduction of tar content of cigarettes is being introduced. Health education is directed mainly at young people with the aim of discouraging them from taking up smoking.

A most important development in the area of diet was the publication in 1984 of the report "Diet and Cardiovascular Disease" produced by an expert panel of the Committee on Medical Aspects of Food Policy (COMA) and the adoption of its recommendations as official Government policy. This report recommended changes in the national diet including a reduction in the proportion of food energy obtained from saturated fat. These recommendations have been translated into practical advice to the general public by the Health Education Council in their booklet "Eating for a Healthier Heart". Proposals on food labelling are currently under discussion.

Emphasis is placed on health education as a means of raising public awareness of the problem and altering behaviour. The Health Education Council has major programmes in hand aimed at the reduction of risk factors, particularly smoking, and designed to encourage healthier eating habits and a more active lifestyle.

The Health Education Council in collaboration with the Welsh Office has also established a demonstration project in Wales. This is a comprehensive community-based heart-health programme planned to extend over a five-year period in order to develop and evaluate a regional strategy which could be used as a pilot by other regions.

Within the National Health Service, health authorities will be invited to include programmes for the prevention of coronary heart disease in their strategic plans for disease prevention and health promotion.

Screening programmes in primary health care are being developed in order to identify persons with elevated blood pressure and thus enable appropriate treatment to be introduced.

A National Co-ordinating Committee has been set up to assist the coordination of the many activities being undertaken by the various bodies active in this field; professional, governmental, private and voluntary.

2.2.17 Union of Soviet Socialist Republics

In the Soviet Union, CVD, the major proportion of which constitutes CHD, rank first as a death cause accounting for 50 % of the total mortality. Therefore, CVD control is an extremely important research and public health problem.

The development of the scientific basis for CHD and arterial hypertension (AH) mass preventive strategies are conducted by a number of research institutions and other medical establishments under the supervision of the USSR Cardiology Research Centre in Moscow. The implementation of the research results into the function of the existing health services is performed by the USSR Ministry of Public Health, directly through its Department of Cardiology.

In 1976, the USSR Cardiology Research Centre launched cooperative programmes on multifactorial prevention of CHD among open populations and on arterial hypertension control among the employees of industrial enterprises.

The characteristic feature of these programmes was their close collaboration with the existing public health care (municipal outpatient clinics, medical departments at industrial enterprises) and that they were aimed not only at the solution of scientific tasks, but at

the evaluation of the feasibility of preventive actions implemented through the existing health care system.

In 1985, two centres (Moscow and Kaunas) from six (remaining are Tashkent, Frunze, Minsk, Kharkov) will finish a five-year intervention period of the cooperative study on multifactorial prevention of CHD.

Screening of middle aged male population (aged 40 - 59) conducted in 1977 - 1981 in the six cities in the framework of the study (30,000 examined subjects) demonstrated that only 17 % - 25.3 % in various centres had neither CHD nor study risk factors. From 11 % to 15 % examined persons had at the time of the screening a history of CHD or cerebral stroke.

The evaluation of the complex preventive measures after five years permitted to assess its feasibility and efficiency in outpatient clinics. The most marked success was attained in the correction of risk factors, such as AH and smoking: over the first four years of the programme's implementation, a stable clear cut-effect was also demonstrated in respect to the decline in the prevalence of elevated blood pressure (diastolic pressure ≥ 95 mmHg) and in significant reduction of systolic and diastolic blood pressure mean levels. The decline in the prevalence was associated with a considerable improvement in the treatment status of hypertensives and with the reduction in the incidence rates.

The number of smokers tended to decrease in both groups. However, only the intervention group demonstrated a significant decline (from 40.1 % to 30.6 %, ($p < 0.05$)).

At the same time, no significant changes in cholesterol levels, body mass, physical activity were revealed between the two groups over four years. This fact is chiefly explained by the failure to alter dietary habits and physical activity patterns by the accepted preventive measures. The role of medical establishments in the transforming of life-style patterns is undoubtedly limited since traditionally the community is not in the habit to turn to a physician to receive advice on how to preserve the health.

A preliminary analysis conducted in Moscow demonstrated that in the community where intensive intervention actions were conducted the total mortality was lower by 16.6 %, CVD mortality by 35.3 %, and myocardial infarction mortality by 28 %.

In the course of the multifactorial prevention programme, recommendations were formulated on CHD mass prevention for medical establishments (outpatient clinics), which are tested in two outpatient clinics of a Moscow administrative district for further implementation in all medical establishments in this area.

On the basis of data available from the conducted hypertension control programmes, an experiment was designed and initiated to introduce the up-to-date methods of CVD mass prevention (at its first stage, the methods of hypertension control) into the function of primary care services. To this end, 51 community outpatient clinics and medical units of industrial enterprises were selected in different communities.

The experiment implies that the above out-patient clinics set up specialised preventive units. All subjects referred to an out-patient clinic are supposed to visit the unit irrespective of the cause of their complaints. There the blood pressure is measured, and the subjects who are suspected to be hypertensives, are forwarded to a more thorough examination; if the diagnosis is confirmed, they are referred to a general practitioner for treatment and follow-up at the same out-patient clinic.

Resulting from the actual experience obtained in the course of the first stage of the experiment, the most relevant forms of hypertension control will be introduced country-wide into primary health care practices.

It should be taken into account that the general practitioners who constitute the most numerous group among the health workers are not only to be involved into CVD prevention, but into other non-communicable diseases control. It is advisable in this context to search for

an integrated approach to the prevention of major non-communicable diseases, to combine the efforts of various specialists in the development of this approach and to pass it to general practitioners. Moreover, the CHD shares the main common risk factors with other non-communicable diseases. Thus, the five year death rate analysis among 11,000 Moscow and Kaunas examined subjects demonstrates an association of smoking not only with CVD mortality, also with mortality for oncological and all causes. It should be underlined that not only smoking itself, but also its intensity affects total mortality and mortality due to oncological causes.

The example of this risk factor substantiates the need and feasibility of actions to correct risk factor levels to decline morbidity and mortality for the major chronic non-communicable diseases. In this connection, the integrated prevention programme was launched in 1983 in the Lithuanian SSR, and the preparatory activities to initiate it in Moscow community are under way. This programme utilises the main approaches and principles developed in the course of multifactorial prevention programme.

2.2.18 United States of America

In the United States an "epidemic" of cardiovascular, especially coronary heart disease had begun by the 1940s. By 1963, the mortality rate from coronary heart disease reached a peak with a progressive and accelerating rate of decline since then. Not only has the percentage decline been large (since 1970 34.4 % for CHD and 49.4 % for stroke), but the impact on the total number of deaths in the U.S. is also large and has led to an increase in life expectancy. In fact, the recent rate of improvement in life expectancy compares to that seen in the 1940s when tuberculosis and other infectious diseases were being controlled. In 1978, a 45-year old person could, on the average, expect to live 2.3 years longer than would have been expected in 1968. Estimates suggest that three-fourths of this declining total mortality rate is due to the decline in coronary heart disease. The decline in death due to cerebrovascular disease has been less of a contributing factor because it is less prevalent. Although cardiovascular disease is still the number one cause of death, it now accounts for slightly less than half of all deaths (49.5 %). CHD alone is responsible for the death of 550,000 persons per year.

The general attitude of the population to health and to the control of risk factors has become quite positive. There has been a decrease in weight, reduction in smoking and an increase in habitual physical activity. Average adult blood cholesterol levels in men fell from 217 mg per dl in 1960-1966 to 211 in the late 1970s. Per capita consumption of several foods changed over the 20 year period from 1964 to 1984. Vegetable fats and oils rose from 32.5 pounds to 48.1 while animal fats and oils fell from 18.3 pounds to 13.5; butter fell from 6.9 pounds to 5.0, and eggs fell from 40.3 to 33.0. Mass media are playing a large role in this change of attitudes as they are frequently reporting on health and disease.

Since the U.S. Surgeon General's first report on smoking and health in 1964, there have been marked reductions in the proportion of people who smoke cigarettes, ranging from a drop of 27 % in white men, to 13.7 % in white women, with black men and women having declines intermediate between them. Heavy smoking, i.e. 25 cigarettes or more per day, continues to be a more serious problem with a decline occurring only in black men and dramatic rises of 50 % and 46 % in black and white women respectively, and essentially no change in white men.

A decisive movement in the national activities concerning prevention and control of CVD was the National High Blood Pressure Education Program which started in 1972. At that time, 51 % of people with hypertension were aware of it, 37 % were receiving treatment and only 16 % had their hypertension under control. By the late 1970s, 56 % of the people who are hypertensive were receiving treatment and 34 % were now under control. Preliminary, more recent data suggest an even more remarkable improvement. At the present time a new program is being planned, namely the "National Cholesterol Education Program" facilitated by the new methodology of serum cholesterol determination. This program will focus initially on professional and patient education and public education with additional efforts in worksite education and school education. This collaborative programme will be coordinated between the National Heart, Lung, and Blood Institute and a large number of other federal, state,

professional and voluntary organisations which are already involved in, and experienced in the cholesterol field and/or in strengthening the U.S. health care system.

There is increasing participation in the education program on the professional as well as the public side, and close contacts are being developed with industry, specifically the egg, meat and dairy industry, to provide choices to persons who want and need to change their nutritional habits. The experience from the studies being carried out suggest that all educational programs must be interesting, must sustain interest in the target groups and must provide them with options. The approach has to be positive.

The strategy in prevention and control of CVD and CHD specifically is based in the country on education and not on regulation. The population awareness about its blood pressure, cholesterol and about the danger of smoking is being systematically increased. It is also necessary that when elevated levels are found in individuals, that the medical care system is able to take appropriate action to reduce and control the levels of blood pressure and cholesterol.

2.2.19 Yugoslavia

Yugoslavia belongs to the group of countries with low mortality rates in CVD and CHD. However, they are on an increase both in males and females.

The area of Novi Sad has been involved for many years in governmental programmes of CVD prevention and control. The data provided by these studies show that CVD are responsible for approximately 20 % morbidity, 40 % of invalidity, and 54 % of total mortality.

The results of epidemiological surveys on random samples of populations aged 25 - 64 years show a high prevalence of risk factors among the population.

The following levels of risk factors have been recorded in the surveys:

- obesity - 44 %;
- smoking habit - 41 %;
- hypertension - 26 %;
- hypercholesterolaemia - 13 %;
- physical inactivity - 35 %;
- diabetes mellitus - 5 %.

In the Novi Sad area, it was shown through an intensive education programme that it was possible to decrease the prevalence of hypertension and smoking in the population as it was possible to influence and decrease the levels of blood cholesterol. The systolic blood pressure decreased from 137.2 mmHg in 1976 to 133.2 mmHg in 1984 for men and from 142.9 mmHg to 130.0 mmHg for women. Their diastolic levels for the same period declined from 86.9 mmHg to 84.2 mmHg for men, and from 87.3 to 81.7 mmHg for women. While in 1976 only 34 % of hypertensive patients had their blood pressure controlled, this figure is now 60 % for men and 67 % for women. The percentage of smokers decreased from 53 % for men in 1976 to 50 % in 1984 and in women from 24 % in 1976 it increased to 31 % in 1984.

The activities being carried out are based on the following principles: the prevention of CVD is mainly done through health education aimed at behaviour changes (smoking, diet, physical activity) and with control of biological factors as is arterial pressure and blood-cholesterol. It provides possibilities of early detection of high risk groups and individuals and provides the necessary treatment of them. It includes the continuing education of health workers and other educators like teachers, etc., in relation to the prevention of CVD.

The planning is generally for five years, supplemented by yearly action plans.

The orientation is to utilise existing health services, especially on the primary health care level for the implementation of this Programme.

Special attention is being placed on inter-sectorial cooperation although there are some obstacles in this respect, for example, with the food industry.

Meanwhile, it is encouraging that on a Federal level, a political climate for easier realisation of the preventive and control programmes is being created. A resolution has now been adopted which gives enough space and opportunities for prevention of non-communicable diseases. Further, the management was facilitated by appointment of institutions for the management of these programmes on federal as well as provinces level. The Novi Sad experience is being utilised as an example and is being adopted for nationwide action.

3. NATIONAL PLANS OF ACTION ¹⁾

3.1 The Need

Coronary heart disease remains the leading single cause of death in most industrialised countries despite the fact that during the last two decades its mortality rates have shown a decline in the majority of them. In developing countries for which statistics are available, mortality due to coronary heart disease is increasing.

There are several arguments that demonstrate that this disease is preventable and therefore a public health action is justified. CHD is in most industrial countries responsible for approximately 20 - 30 % of total mortality.(9) In most cases its cause is atherosclerosis. In countries with high prevalence of coronary heart disease atherosclerotic changes in aorta and coronary arteries have been found already during the first two decades of life.(11) Atherosclerosis has an insidious development and its clinical manifestation appear only later when underlying disease is already advanced. A substantial part of the mortality for the coronary heart disease is caused by sudden death which prevents the medical care to be provided in time to the majority of affected persons.(10) Despite unquestionable advances in treatment of coronary heart disease, the mortality among survivals of acute myocardial infarction is still high accounting approximately for 10 % in the first year and for 5 % yearly later (10).

It is also established that there might be groups of population within a country which do not record mortality trends similar to the overall national trends. It was repeatedly demonstrated that groups of population with higher education have more favourable trends in mortality compared to population groups with the lowest education. It was also shown that there might be different mortality rates in migrants who have accepted new style of life of the host population. The contribution of occupational factors to the development of CHD remains largely unknown and deserves further research.

Considering that the life style changes required for decreasing the risk of the disease are the principles of healthy life style, there is sufficient assurance in the safety and efficacy of the preventive measures that are being recommended. The present evidence of the major benefits from preventive action at the population level is strong enough to justify a public health action based on properly developed and planned policy.

3.2. Preventive Strategy.

The present strategy in prevention of CHD was formulated by WHO Expert Committee in 1981 (1). It is composed principally of two approaches:

a) A population approach, which aims at altering the mass characteristics of life styles and environment which are considered as the underlying cause of mass disease. This approach is

1) To facilitate the task of preparing the necessary documentation on national level, the Meeting of National Programme Managers accepted a document "Formulation of National Plans of Action for Coronary Heart Disease Prevention - Guidelines" which is attached as Annex III.

based on the findings that in high incidence countries the distribution curves of risk factors are positioned on higher levels than in countries with low incidence of CHD. Further, most of the CHD cases attributable to the risk associated with a specific factor occur from the large number of those who have only slightly elevated levels of this risk factor. Even a slight shift in the average levels to lower values of the underlying factors would, therefore, substantially effect the number of persons suffering the disease in the community.

In developing countries in general, life-styles leading to an increase in the population risk of CHD are only starting to develop. It is imperative to prevent now the emergence of predisposing conditions in these countries.

b) An individual approach aims at identifying individuals at elevated risk within the population and providing them proper treatment. Sometimes, it is also called the "high-risk strategy". It is applied in persons who require more intensive preventive treatment than can be provided by the population approach alone.

It is necessary to stress that the population and individual (high risk) approaches are complementary. Screening and the population approach are not exclusive. On contrary, both have their place in prevention programmes in all countries.

The present strategy of coronary heart disease prevention is fully in the agreement with the concept of health promotion which is an integral part of the overall goal of the World Health Organization "Health for All in the Year 2000". It requires participation of each individual as well as the whole society. It is an advanced stage compared to the presently established concept of disease prevention which was mainly the task of the health profession.

3.3 Programme Formulation and Planning.

The task to apply this preventive strategy requires a systematic approach based on political will of the country, proper planning and systematic and continuous implementation of the decisions. The coronary heart disease risk of the population and of the individual is significantly influenced by a number of personal and population characteristics (such as smoking, elevated levels of blood cholesterol associated with eating patterns, lack of physical activity, elevated blood pressure) and their combination which are largely determined by social and cultural factors. The efficient implementation of the preventive strategy requires therefore a multisectorial approach involving not only medical profession, but also other sectors of the society such as agriculture, food industry, education, mass media etc.

This is valid both for countries with high incidence of CHD or countries where the problem is just emerging.

The formulation of a "national plan of action in prevention of coronary heart disease" for both groups of countries might facilitate the whole process required to achieve the objective, namely the prevention of CHD in the entire population.

Each country might have a different approach based on its actual initial situation and available resources.

The "action plan" should have clearly formulated objectives which are generally understandable. It should include time-related targets and time-based plans of activities.

Most of the actual work will be carried out on community level and the role of a "primary health care team" must be considered.

In some countries or localities, an integrated approach with the prevention of other non-communicable diseases might be considered. This, however should not diminish the initiative created by the CHD prevention approach as the CHD is most common among the chronic diseases as a single cause of death and the knowledge about its risks and benefits of the prevention is mostly well known.

3.3.1 Base-line Information.

To plan and initiate a "national action plan for CHD prevention", a certain amount of basic data is essential. It is required for development of a policy in prevention of CHD, for decisions by policy makers as well as for information and involvement of the public. Without its participation the programme would fail. Further, data are required for the evaluation of the progress. Alternative approaches might be tested to make the programme most effective.

The essential part of this data-base is the assessment of the extend of the problem of CHD in the respective population in relation to the overall health situation and other health priorities requiring public health action.

For this purpose following data should be collected preferably in specific sex and age groups: national demographic data, mortality rates for different disease groups, information on causes of permanent and partial invalidity, assessment of prevailing trends in mortality, morbidity and invalidity, and information on the therapeutical approaches. Where feasible, the information on the prevalence of the risk factors and their profiles in the population should be (specifically on serum cholesterol, HDL-cholesterol, blood pressure, smoking habits, weight and other additional information which might be relevant to specific national programme).

Further, it would be helpful to have information on the present life-style and if possible on its trends, namely in the area of current dietary and smoking habits and attitudes to physical activity.

Careful consideration should be given to the assessment of the information on the resources available in the community as well as on the existing as well as possible constraints which might arise. They would include the analysis of the role and possible contribution of the existing health services, the attitudes and utilisation of medical profession and other health workers; the willingness and possibility of involvement of health professional organisations; last but not least, the assessment of the financial resources available presently and to be required in the future.

As the programme concerns the entire community and its success depends on its active participation, it is essential to explore the possible role of other non-medical organisations such as trade unions, educational institutions, different voluntary organisations, local communication possibilities and even different political parties.

It is essential to utilise the already available experience in the community related to the preventive activities in general. Assessment of past as well as present activities in the health field is essential so that the programme might take an advantage of the complementary utilisation of resources.

Many of the studies carried out in the field of epidemiology of cardiovascular diseases in the past might provide at least partially information required for the provision of the above mentioned data and assessment of the initial situation.

In developing countries there is a lack of reliable epidemiological data on the extent of CHD and other cardiovascular and other non-communicable diseases in the population. Epidemiological research should there get full national and international support.

3.3.2 Definition of Feasible Time-related Targets

It is necessary that the overall objectives of the programme are formulated. However, considering the profound changes which will require not only the adaptation of the life-style of the population, but also reorientation of the agriculture, food industry, education, mass media with resulting financial implications for individuals, organisations and the governmental authorities, the whole process of implementation of the programme will have to be prepared in phases.

For this purpose a definition of feasible time-related targets corresponding to the local situation based on careful and detailed analyses of the available base-line data is required. While, e.g. a target of less than 30 % of the total calories coming from fats might be a final objective, the decrease of the actual consumption might to be planned in phases and necessary provisions made which are at the present time feasible and acceptable.

These targets then should be considered when specific action programmes for the population are being prepared.

3.4 Programme Implementation.

A complex programme like the "national action plan for prevention of CHD" includes in its planning, formulation, promotion, management and implementation different activities and involves different sectors of the society.

It is understood that the leading role and the initiative will come from the medical profession and the health services will have to be fully involved and participating. The success of the programme requires also participation and involvement of different educational institutions (general, medical, mass media, others) and other community organisations both political and non-political.

3.4.1. Special Activities.

The "action plan" will include a programme of control and prevention of hypertension on the population level, a programme improvement of national patterns of eating, activities and legislation for control of smoking, a systematic plan to reduce alcohol consumption and last but not least a plan and programme for improvement of physical activity.

An active cooperation and advanced planning has to be ensured with the sector of agriculture, food industry and food marketing.

3.4.2 Health Education.

There is a vast diversity of opinion concerning how, when, and by whom the health education approaches should be implemented. While it is accepted that both the population as well as the individuals with identified risk should be addressed in various options proposed, there is not enough knowledge available about the most appropriate and efficient methods of health education. This is specifically evident in the problem of addressing diverse groups of population as for example school children, adolescents, different working groups and professional groups and even different groups of the health profession. There is now already evidence that different groups with different levels of education or socio-economic status have different attitudes to life-style changes.

3.4.3 Mass Media.

The role of mass media is in this context so substantial that a systematic policy concerning the approach to healthier life-style should be considered by its management.

It is recognised that in all areas of health education which should lead to life-style changes a systematic research is needed utilising proper evaluation methodology. Here the help of communicational experts might be useful and their assistance sought.

3.4.4 Primary Health Care Team.

In this new concept of "health promotion" an important role will have "the primary health care team" which through its direct contact and work with the community and individual inhabitants might decisively influence the acceptance of the new approach. The composition of this team should reflect the new philosophy, and its membership has to be carefully considered according to the local traditions and possibilities. As community action is required many of the activities required in health promotion can be better done by non-medical people. On the other hand, the expertise of the health personnel will continuously be required and its leading role will be generally accepted.

3.4.5 Education.

For the new tasks a new approach to education of health professionals has to be developed. It is essential that the general practitioners nurses and other health personnel have clear guidelines as far as dietary measures, physical activity, control of smoking, control of hypertension, is concerned.

This education, however, should already be initiated during the undergraduate training and the continuity in the post-graduate period should be ensured.

The information of the public should be initiated already at school. Teaching materials for elementary, secondary and high schools on health promotion and the problems of risk factors should be prepared and corresponding teaching carried out.

This approach might lead to development of new methods of training, development of new technologies which might be in certain circumstances applicable by the lay people or by the individuals themselves.

3.4.6. Evaluation.

For evaluational purposes, there is a need for development of new methods and approaches in epidemiological research which could provide readily available information on the changing situation. The linkage of data from already existing resources to provide such information should be explored.

3.5. Cooperation with Agriculture and Food Industry.

The programme of CHD prevention will have in its results inevitable consequences and impact specifically on agriculture and food industry. The need for reorientation in the production due to changes in demand would have profound consequences for the producers. The experiences from several countries have already shown that a dialogue of the organisers of the preventive programmes with the representatives of the agriculture and food industry lead to mutual understanding, cooperation and consequently collaboration. With proper preparation, appropriate changes and restructuring of the production were achieved without unfavourable economical consequences for the producer.

3.6. Demonstration Programmes

Because of the diversity of the situation in individual countries, it is very difficult to transfer already available experiences directly in new conditions. For these reasons, demonstration programmes in parts of the country preferably corresponding to the administrative division of the country are recommended. The populations should be large enough to show a suitability of the proposed methods of programme implementation and to make evident the constraints which the programme might encounter. The size of the areas, however, should also be manageable so that the evaluation of the specific approaches could be ensured.

3.7. Governmental Authorities.

The involvement of the governmental authorities in the "national action plan" is essential. Most of the decisions required are reaching over the influence of medical sector. The endorsement of the recommendations of the WHO Expert Committee reports (1, 6, 7) would provide a necessary authority and also prove the political will of the national leaders in this respect. The governments should insist on the formulation of a "National plan for prevention of coronary heart disease" and support the whole process of developing necessary activities.

The support of these goals would also prove that the governmental authorities recognise that the decisions which profoundly influence the underlying causes of diseases should not be taken just on purely economic or political grounds by different governmental departments and agencies, but that the health authorities should be able to influence all decisions which include considerations of the national health.

Further, in several areas, there is a need for new legislation. These areas should be identified in each country and the governmental authorities should ensure its materialisation as well as implementation. The most sensitive areas are smoking control, the food standards and labelling of the products, problems of individual advertising in different areas, national nutritional and food policy as well as agricultural policy and standards.

Further, the role of the governmental authorities will be required in collection of essential statistical data which should be provided by methods which are internationally comparable and respect required international standards.

The support from the governmental authorities which are not directly involved in the health field requires factual, however, from the health professionals precise and convincing evidence and information.

3.8 Programme Management.

The organisation of a "National action plan" requires a certain organisational structure which will depend on the actual country situation, its organisation and its health care system. The organisation must ensure not only the daily implementation and execution of the activities but also the continuous contact and cooperation with other sectors of the community and the society.

A management committee which would draw its membership from different sectors of the society might be created on governmental level. It should ensure the proper implementation and organisation of the programme and transfer of actual information in different non-medical sectors so that they could adjust in time to newly developing situation. Such an interdisciplinary body should be composed of representatives with enough authority in each specific area so that its co-ordinative role and recommendations are respected.

3.9 Integrated Approach to Prevention of Non-communicable Diseases

In the last decade attempts were started both in WHO as well as in some countries to use an integrated approach to prevention of several non-communicable diseases simultaneously. The main reason is that the known major risk factors are common for several of these diseases. Therefore, e.g. the required improvements in life-style should have much wider impact on the health of the population.

Wherever feasible, this approach should be seriously studied as it reflects the aims and goals of public health strategy. However, it should not diminish the initiatives created by the "CVD only" approach, in such situation the approaches should be complementary, not competitive.

4. ROLE OF WHO AND OTHER UN AGENCIES

The World Health Organization has initiated the international effort and promotion of "National action plans in prevention of CHD" as a result of the recommendations of the Expert Committee meeting in 1981 (1). It also undertook the role of a coordinating centre which facilitates the exchange of information and assists the individual countries in establishment and promotion of the programmes.

For the future its role should be enlarged preferably in training. This might be carried out in already established courses with special attention to training in the use of computers in the epidemiological studies.

In connection with training, there is a need for preparation of manuals on education in control of smoking, assessment of dietary habits, assessment of physical activity.

WHO should promote and facilitate international studies on different aspects as e.g. assessment of diets.

Very much could be already now achieved by ensuring workable communication within WHO with divisions and units with related interests in the headquarters as well as in WHO regional offices.

WHO should establish collaborative links with non-governmental and governmental organisations in this programme. As an immediate action, official co-operation in this programme should be established with FAO, UNESCO and UNICEF as well as with the interested non-governmental organisations in official relation with WHO.

5. GENERAL CONCLUSIONS AND RECOMMENDATIONS

1. CHD remains the leading single cause of death in most industrialised countries despite the fact that during the last two decades its mortality rates have shown a decline in most of them. In developing countries for which statistics are available mortality due to CHD is increasing.

2. Changing trends in CHD mortality in different countries, in groups with different levels of education in the same country, in groups of migrants, and the ability to modify risk factor levels and risk by environmental changes demonstrate that this disease is preventable.

3. Scientific evidence about the role of risk factors in CHD development is at the present time strong enough to justify preventive action. On the other hand, there might be other as yet unrecognised risk factors which justify further research into the etiology and pathogenesis of CHD and its underlying causes.

4. The balance of evidence further indicates sufficient assurance in the safety and efficacy of the preventive measures that might be taken, assumes the likelihood of major benefits from preventive action at the population level, and is similar in nature and strength to that governing past public health policy and decisions on, e.g., air pollution control, sanitary improvements and information on nutritional requirements.

5. Present preventive strategy is composed of approaches targeted at entire populations and at individuals. These approaches are complementary. High risk approach including screening and the population approach are not exclusive. On the contrary, both have their place in prevention programmes in all countries.

6. To initiate, plan and implement a "National Action Plan for CHD Prevention", a certain amount of basic data is essential be it for decisions by policy makers or by the participating public. Data required for programme evaluation should be included. Further it is essential to formulate objectives of the "Action Plan", time related targets and time based plan of activities.

7. Different approaches might be considered to ensure proper planning and implementation of different national CHD prevention programmes. This task depends on individual countries and their socio-economic structure and different stages of programme development. The close collaboration of national institutions in programme implementation must be ensured. In some countries, intersectorial committees might be established at the governmental level.

8. At the community level there is a need for a permanent dialogue among different sectors to advance knowledge about the current status of CHD prevention and ensure continuous attention and commitment. There might be different ways of achieving this depending on different local situations.

9. In implementing CHD prevention programmes wherever feasible an integrated approach with other NCD should be considered without, however, diminishing the initiatives created by the "CVD only" approach.

10. There is a vast diversity of opinion concerning how, when and by whom the health education approaches should be implemented. While it is accepted that both the population as well as the individuals with identified risk should be addressed and various options

proposed, there is not enough knowledge available about the most appropriate and efficient methods of health education when addressing such diverse groups as, e.g. school children, health professionals, working groups, the mass media, or groups with different levels of education or socioeconomic status. It is recognised that in this area systematic research is needed utilising proper evaluation methodology. The use of communications experts should be considered in developing programmes in health education.

11. To promote prevention programmes, special attention should be paid to promotion of training, development of appropriate technology and establishment of epidemiological research.

12. WHO should facilitate the work of the programme managers in Member States by:
- ensuring a permanent exchange of information on ongoing activities in collaborating countries (e.g. by preparation of a newsletter);
 - initiating a study on innovative approaches to exchange of information and improvement of communication among the collaborating countries;
 - wherever required assisting in the promotion of programmes in individual countries through its contacts with governments;
 - identifying areas where special research (e.g. on health education) is needed;
 - providing assistance to studies that might be required;
 - facilitating training of personnel preferably in already established courses (e.g. Ten-Day International Teaching Seminar on Cardiovascular Prevention and Epidemiology, North Karelia Project International Visitors' Programme);
 - identify the best approach to training seminars on use of computers in epidemiological studies;
 - establish collaborative links with ISFC, UNESCO and FAO in this programme;
 - promoting studies on assessment of diets and standardised methodology to be used internationally;
 - preparation of manuals on education in control of smoking, assessment of diets, assessment of physical activity;
 - ensuring workable communication within WHO with divisions and units with related interests in HQ as well as with WHO Regional Offices.

AGENDA

1. Opening of the meeting.
2. Introduction by WHO:
 - Background and terms of reference of programme.
 - Organization of programme
 - Role of WHO/HQ
 - Role of Regional Offices
 - Role of NGOs
 - Role of Collaborating Centre, Prague.
3. Country statements
 - Constraints.
4. Review of guidelines prepared by the Prague Collaborating Centre.
5. Preparation of individual plans of operation:
 - Developed countries - CVD only
 - Developing countries
 - Countries who have signed agreement on NCD/EURO programme.
6. Requirements of countries:
 - WHO input
 - Information/scientific evidence
 - Documentation
 - Financing.
7. Recommendations and timetable with targets.
8. Date and content of next meeting.
9. Other business/closure of meeting.

ANNEX II

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ANNEX III

FORMULATION OF NATIONAL PLANS OF ACTION FOR
CORONARY HEART DISEASE PREVENTION
GUIDELINES¹⁾1. Introduction

This document summarizes the recommendations of the WHO Expert Committees on Prevention of Coronary Heart Disease (TRS 678, 1982) and on Community Prevention and Control of Cardiovascular Diseases (TRS 732, 1986).

Its purpose is to facilitate the orientation of the national experts who are responsible for the formulation of plans of action for prevention of coronary heart disease (CHD) in their respective country.

It is understood that no specific guidelines applicable generally for all countries can be proposed. Therefore, in this paper, only a general approach could be considered.

2. Arguments for prevention of CHD in the populationThe need for prevention:

- the size of the problem in the population,
- the early onset and insidious development of atherosclerosis, whose clinical manifestations appear when underlying disease is already advanced,
- sudden deaths which occur earlier than medical care can be provided,
- despite advances in treatment, the mortality among survivors of acute heart attack is still high (10% in the first year, 5% yearly later).

The preventive potential

is demonstrated:

- by the changing trends in the CHD mortality and incidence from country to country and even among groups of population with different socio-economic or educational levels in the same country,
- in different rates in migrants,
- by the ability to modify the risk factor levels and risk by environmental changes.

The balance of evidence

- indicates sufficient assurance of safety and efficacy of preventive measures,
- suggests sufficient probability of major benefits to warrant action at the population level,
- is similar in nature and strength to that governing past policy decisions on air pollution control, sanitary improvements and information on dietary requirements.

3. Preventive strategy

is composed of both:

a) population approach

- in high incidence countries alters the mass characteristics of life-style and environment which are the underlying cause of mass disease;
- in low incidence countries prevents the development of disease precursors (primordial prevention).

b) individual approach

- identifies and helps individuals at specific risk within a population;
- prevents recurrences and progression of disease (secondary prevention).

¹⁾ prepared by the WHO Collaborating Centre for Coordination of the Intensified Programme for Prevention of Coronary Heart Disease, Prague, Head Dr Z. Pisa and accepted by the meeting.

The rationale of the population approach

In high incidence countries, the distribution curves of risk factors are positioned on higher levels. Most of the CHD cases attributable to the risk associated to a specific factor occur from the large number of those who have only slightly elevated levels of the risk factor.

Even a slight shift in the average levels of the underlying factors in the direction of "biological normality" would therefore effect a substantial number of persons in the community.

The rationale of the individual approach

This approach - the high risk strategy - is necessary in persons with elevated risk factors who require more intensive preventive treatment than can be provided by population approach alone.

4. Formulation of targets

CHD risk is significantly influenced by a number of personal and population characteristics and their combination. These are largely determined by socio-cultural factors and are, therefore, modifiable. Such characteristics include smoking elevated blood pressure, elevated levels of blood cholesterol and the associated eating patterns, lack of physical activity .

It is recommended that certain targets be reached by the population and preferably by most individuals. Each plan has, however, to consider their feasibility in view of the actual national situation. The approaches should be formulated in steps related to time intervals. As guidance it is recommended to use the relevant chapters of the reports of the Expert Committee meetings (1, 2, 3, 4, 5, 6).

5. Formulation of national plans of action

Items to be considered:

- collection of baseline information on the extend of the problem of CVD and CHD in the population including the assessment of their priority in relation to other diseases requiring public health action. Data to be provided (in specific sex and age groups):
 - national demographic data,
 - mortality rates,
 - invalidity,
 - trends in mortality, morbidity and invalidity,
 - relevant medication,
 - prevalence of risk factors and their profiles in the population (serum cholesterol, HDL-cholesterol, blood pressure, smoking habits, weight and other additional information relevant to specific national programme);

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- 1) Prevention of coronary heart disease, Report of a WHO Expert Committee, TRS 678, Wrlld. Hlth Org., Geneva, 1982
 - 2) Community Prevention and Control of Cardiovascular Diseases, Report of a WHO Expert Committee, TRS 732, Wrlld. Hlth Org., Geneva, 1986
 - 3) Arterial Hypertension, Report of a WHO Expert Committee, TRS 628, Wrlld. Hlth Org., Geneva, 1978
 - 4) Primary Prevention of Essential Hypertension, Rep. of a WHO Scientific Group, TRS 686, Wrlld. Hlth Org., Geneva 1983
 - 5) WHO Expert Committee on Diabetes Mellitus, Report of a WHO Study Group, TRS 646, Wrlld. Hlth Org., Geneva, 1985
 - 6) Controlling the smoking epidemic, Report of a WHO Expert Committee on Smoking Control, TRS 636, Wrlld. Hlth Org., Geneva, 1979

- assessment of life-style:
 - current dietary habits,
 - awareness of healthy behaviour in the population including smoking habits, and attitude to physical activity;
 - attitude of the population to changes;
- assessment of resources and constrains according to their present role and future potential involvement:
 - health care system - its organisation,
 - medical profession, its attitudes and practices,
 - other health workers,
 - health professional organisations,
 - trade unions,
 - educational institutions: general, medical, mass media, others;
 - voluntary organisation,
 - political parties,
 - local communication possibilities
 - financial resources
- definition of feasible time-related targets corresponding to the local situation based on the above analysis is essential;
- action of the population: specific programmes to be prepared for:
 - the control and prevention of hypertension,
 - improvement of national patterns of eating,
 - physical activity,
 - control of smoking,
 - reduction of alcohol consumption;
- sectors of society to be included in programme promotion, management and implementation:
 - medical profession,
 - health services,
 - educational institutions,
 - community organisations (political, non-political, occupational, trade unions),
 - the sector of agriculture,
 - food services and industry,
 - mass media,
 - entertainment and sports;
- the need for governmental involvement

The involvement of the governmental authorities is essential as most of the decisions are reaching over the influence of medical profession.

The governments should:

 - endorse the recommendations of the WHO Expert Committee Reports and work towards their implementation;
 - insist on the formulation of a national plan for the prevention and control of major cardiovascular diseases embodying quantified feasible costed and time related targets;
 - recognise that decisions which profoundly influence the underlying causes of disease are often taken on purely economic or political grounds by many governmental departments and agencies and, therefore, ensure that policy decisions include considerations of their health implications;
 - because of the need of appropriate communication and coordination between health ministries and other departments, particularly those dealing with the finance, agriculture and food policy, education and public information, the government should consider the most suitable arrangements to ensure the efficient coordination of all these activities and in that way facilitate their implementation;
 - in each country, there is a need to identify the areas where a new legislation might be needed (e.g. food standards and labelling of products, control of smoking, individual advertising, national nutritional and food policy as well as agricultural policy).

6. Demonstration programmes

Local demonstration programmes and pilot studies have proved valuable for the developing and testing intervention methods, for evaluating the progress and as training and resource centres within the national plan. An outstanding example is the North Karelia Project. Wherever feasible, therefore, demonstration projects should be implemented.

7. Development of a health team

The implementation of a national action plan in prevention of coronary heart disease requires in different stages different expertise. However, the leading principle must be the communication with the population and ensuring of easy access to the "resource" personnel.

An establishment of a "health team" which under the guidance of a responsible medical officer would be able to work with the population seems practical. The composition of a health team depends on local situation and resources.

In some model areas beside nurse and a physician a sociologist, together with trained and interested lay-persons covered the major part of tasks and contributed substantially to the realisation of the programme. The training provided to them was task-oriented.

8. Training

There might arise a need for training in different areas of senior as well as junior staff from individual national teams which are implementing "National action plans". Furthermore, health teams with non-medical staff might be needed and opportunity for training might be required.

For the senior staff short "information visits" in different collaborating countries are proposed. More formal training might be needed for junior staff members. Existing courses and teaching seminars⁺ should be evaluated by WHO for these purposes and necessary administrative arrangements and budgetary implications considered.

9. Evaluation

It is essential to establish a monitoring and surveillance system which would facilitate the evaluation of the progress of the programme.

10. Exchange of information

The World Health Organisation should study the best approaches to the exchange of information and experiences among the collaborating countries. Experiences from large international special programmes should be analysed and the most appropriate methods for the purposes of this Programme tested and finally implemented.

11. Conclusions

These "guidelines" are only intended as a general approach to the problem. It is essential that each country prepares its own "plan of action" based on the specific analyses of the national situation. The same is valid for any other documentation prepared by international groups of experts for the purposes of this project. The exchange of information and experiences among different countries is essential however the problems must be approached and solved "at home".

⁺ a) "North Karelia Project International Visitors' Programme" organised by the Department of Epidemiology, Institute of Public Health, Helsinki, Finland, is an example.

b) Ten-Day International Teaching Seminar on Cardiovascular Epidemiology and Prevention; organised by the Council on Epidemiology and Prevention, International Society and Federation of Cardiology.

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