



EUROPE



# A strategy to prevent chronic disease in Europe

**A focus on public health action**

## The CINDI vision

Kaunas  
University of  
Medicine



Health  
Promotion  
Agency



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## Abstract

Chronic diseases place an enormous health and economic burden on the population of all Member States of the WHO European Region. Evidence shows that major chronic diseases such as cardiovascular disease, cancer, chronic obstructive pulmonary disease (COPD) and diabetes result from a few lifestyle related behaviours. These behaviours - unhealthy diet, reduced physical activity, tobacco use and alcohol abuse - lead to obesity and hypertension and to abnormalities in lipid and carbohydrate metabolism.

Although evidence is growing that these diseases can be prevented, many European Member States lack a national policy, and therefore do not take the action needed to control and prevent chronic diseases.

In 2002, at its fifty-second session, the Regional Committee formally proposed that the WHO Regional Office for Europe should develop an innovative and flexible evidence-based chronic disease prevention and control strategy. The CINDI (Countrywide Noncommunicable Disease Intervention) Programme is in a unique position to provide leadership in supporting this action because of its experience in policy and programme development, evaluation and monitoring, and capacity building in integrated chronic disease prevention in more than half of Member States of the Region and in Canada and in supporting such developments in other regions. The proposed strategic framework needs to be adapted to the individual national situations and to the capacities of the countries' health systems to be able to have an effect throughout the Region.

### Key words

CHRONIC DISEASE - prevention and control  
STRATEGIC PLANNING  
HEALTH POLICY  
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## Executive summary

The burden imposed on the economies, health systems and societies of Member States by noncommunicable diseases (NCD) such as cardiovascular disease, cancer, chronic obstructive pulmonary disease (COPD), diabetes and mental ill-health requires a search for more effective strategies to deal with problems at international, national and local levels.

Although there is evidence to support that action against common determinants and risk factors for this group of diseases promotes health and prevents disease, thus resulting in a considerable reduction in disease and suffering, many of the European Member States still do not have national chronic disease policies. Many health systems are fragmented, dealing with specific disease entities or with individual determinants or risk factors such as tobacco use, alcohol abuse, unhealthy nutrition and reduced physical activity. Similarly, despite the need for integrated action to be undertaken against major chronic diseases throughout a person's entire life span, there is a lack of coordination between technical programmes at international level.

Sound advice on how to address a major health problem is extremely important in view of the limited resources in some Member States, and particularly with ongoing health system reforms in the Region. This advice should be evidence-based, i.e. based on sound theory and good practice, with a realistic possibility of adapting existing scientific knowledge and experiences to the local needs and capacities of such health systems.

The experience gained by the WHO CINDI Programme in mobilizing European Member States as well as the international research community to develop and test the implementation of the concept of integrated approaches to cope with major chronic diseases can serve as a solid base for the advancement of developing a Region-wide strategy for chronic disease.

The CINDI approach is based on evidence that a small number of risk factors and conditions are common to major chronic diseases. This commonality means that integrated action against selected risk factors implemented within the social context can lead to the reduction of major chronic diseases as well as the improvement in public health.

CINDI participating countries are working together to address risk factors, social and environmental determinants, as well as some chronic disease control issues through primary health care. CINDI countries are working towards reducing chronic diseases by implementing population strategies which encourage healthy lifestyles and the creation of a social environment that supports health as well as high risk strategies aimed at improving risk profile through preventive measures at an individual level. These actions are being implemented through regional or national chronic disease policy and with a clear link to national health policy.

The CINDI network has summarized its experience into this **strategic framework** on chronic diseases. The **overall goal** of this chronic disease strategy is the promotion and protection of health as well as prevention of chronic diseases by guiding the development of public health action at local, national and Region-wide levels to be implemented in an integrated manner. The implementation of this strategy would lead to a reduction in the burden of diseases to society.

- This strategy, which aims to reduce the burden of NCD, targets **four** major chronic diseases: cardiovascular disease, cancer, chronic obstructive pulmonary disease (COPD) and diabetes.
- It focuses on **four** lifestyle-related factors: tobacco, diet, physical activity, and alcohol.
- In turn, this should lead to the improvement of individual risk profile by affecting **four** biological risk factors - overweight, hypertension, abnormalities in lipid and in carbohydrate metabolism.
- To achieve this, **four** integrated approaches are to be applied: individual risk reduction (aimed at high-risk individuals), population risk reduction (aimed at social determinants), rational use of health services (by empowering primary health care), and referral system support.

- These efforts will be guided by **four** major strategies: policy development, capacity building, surveillance, and dissemination of information and experience.
- All of the above should be related to the improved functioning of the socio-economic environment by focusing on **four** major social determinants of NCD: poverty, lack of educational opportunities, unemployment and social inequality.

The strategy should be developed and implemented through partnerships on several levels. The international level would involve WHO Member States, European Union (EU), professional health associations and nongovernmental organizations (NGOs). The national level would involve governments, all societal sectors affecting health, NGOs, and the academic, health care and public health communities. The local level would involve communities and their settings, institutions and interest groups. However, in the European situation, the WHO Regional Office has a unique authority and clear mandate to lead the development and implementation of the European chronic disease strategy and thereby help create a better health environment throughout the Region.

## Background and purpose

1. Major chronic diseases,<sup>1</sup> although largely preventable, are a main cause of premature mortality and the overall disease burden in the WHO European Region (1,2). They are also major contributors to the health gap between eastern and western Europe. In countries of central and eastern Europe the age profile of chronic disease morbidity and mortality is dramatically younger than in the EU countries (3). At the same time there is strong evidence that these diseases are linked to several lifestyle-related key risk factors such as tobacco use, unhealthy diet, lack of physical activity, alcohol misuse and psychosocial stress operating in a disadvantaged socio-economic environment. Within countries, chronic diseases and their associated risk factors affect poor and disadvantaged communities in particular.
2. Although it is well documented that chronic diseases have a significant impact on national economies by disabling and killing the working-age population (3), the health systems of most European countries and throughout the world are not adequately structured to respond to these emerging needs. Even within WHO, which has the highest level of professional expertise, many technical programmes operate in isolation from one another. Innovative approaches in health policy development and implementation for health system reforms have been developed, recommended to and accepted by European Member States. However, a clear health outcome focus on chronic diseases has not taken place, nor has an effective coordination between such important pillars as health promotion initiatives (e.g. Healthy Cities, Health Promoting Schools), and European Action Plans (on Tobacco-free Europe, Food and Nutrition Policy, and Alcohol).
3. The concept of “integrated” prevention of chronic diseases as an essential component of existing health systems started in Europe with the CINDI Programme initiative. It should be considered as an example of comprehensive public health action to cope with most important health issues. The CINDI network<sup>2</sup>, unifying action-oriented programmes from many European countries and Canada, was systematically capitalizing on the initiatives that have been developed in health promotion and disease prevention in Europe and beyond (4,5,6). This strategy continues the process of disseminating CINDI concepts and experience.
4. The purpose of this document is to present to the wider European community, politicians, health professionals and society as a whole a model that comprehensively addresses the major European health problem of chronic diseases through public health action – a model based on scientific knowledge, practice and the experience of CINDI collaborators. The document highlights the rationale for the strategy, presents a review of the response at national and international level to coping with chronic diseases, describes (on the basis of CINDI experience) what still needs to be done as part of public health action, and advocates capitalizing on the lessons learnt through CINDI implementation.

## Chronic disease burden and rationale for action

5. NCD are leading causes of death and disability worldwide. The World Health Assembly (WHA) in 1998 recognized the threat posed by NCD and a global strategy for NCD prevention and control was developed (7) declaring that their prevention and control will be a priority. WHO called on all Member States to develop their national policies for chronic disease prevention and control to be guided by the global strategy (8).

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<sup>1</sup> Both terms NCD and chronic diseases are used across this document to define the group of major diseases that include cardiovascular disease, cancer, chronic obstructive pulmonary disease and diabetes.

<sup>2</sup> Annex 1

6. Major NCD are responsible for 85% of deaths and 70% of the disease burden in the European Region (1). However, according to the recent WHO-headquarters survey on national chronic disease policies and programmes, only 60% of Member States in this Region have policies for dealing with chronic diseases (9). Although the importance of health determinants causing NCD development is well understood and extensive experience from "vertical" chronic disease programmes as well as CINDI exists, the burden caused by NCD continues to grow in a large proportion of European populations, thus adding to already existing inequities in health between population groups and countries across Europe (2). Even in more affluent Member States where downward trends in NCD mortality (in the first instance cardiovascular) are observed, the costs for the care of consequences of NCD present an enormous burden for the economy of the country in addition to the human suffering.
7. It is well documented that major NCD share common preventable lifestyle-related risk factors such as tobacco, unhealthy diet, alcohol abuse and reduced physical activity. In addition, risk factors for chronic diseases can be linked directly to social, economic and environmental determinants of health. Factors that have a major impact on the development of chronic diseases include education, the availability and affordability of healthy food, access to health services, and policies and infrastructures that support a healthy lifestyle, e.g. safe bicycle paths.
8. Alongside a country's development, NCD and their risk factors are increasingly related to lower socio-economic status and to poverty. The increase in chronic diseases is seen disproportionately in poor and marginalized populations and is contributing to the increasing health gap between and within countries. Public health policies should therefore focus on reducing health inequalities and creating better conditions for population health. These policies can no longer be isolated from policies in other sectors such as employment, income maintenance, social welfare, housing, education, and the mass media, including TV.
9. Psychosocial stress is generally regarded as a contributing factor in a number of conditions including coronary heart disease and hypertension. These tend to increase in importance in countries undergoing economic and social transitions, and that do not have adequate social policies. There is thus a need to monitor very closely the impacts, both positive and negative, of social and economic policies on social capital, social networks and social cohesion (2).
10. The population in the European Region is ageing. This has clear implications on the morbidity and mortality from chronic diseases, on the burden on health services and related costs. Of the 20 countries in the world with the highest percentages of older people, 18 are in the European Region (1).
11. Globalization and social change influence the spread of chronic diseases by increasing exposure to the risk factors - the growth of multinational tobacco, food and beverage industries have largely driven the spread of adverse lifestyles. Changes in food processing and production and in trade policies have affected the daily diet of populations. At the same time, changes in living and working patterns have led to less physical activity and less physical labour. While globalization is guided by the needs of a market economy, effective measures are needed to curb negative social consequences on public health and on the environment.
12. Changing patterns of consumption and of living conditions have led to an increase in obesity in all parts of Europe. Obesity rates doubled in several countries in the 1980s-1990s. In England, for example, these rates rose in women from 8% to 16%. In Sweden, rates in men rose from 5% to 10%. Obesity rates tripled in the period 1980-2000, with many countries now bordering on rates of 20% and above, e.g. obesity reaching 30% in Portugal.

13. The world economy is now more integrated than ever before with an increasing flow of trade, investment and communication among countries, and an increasing capacity of national governments to respond accordingly. While governments have a responsibility for a nation's health, the responsibility for health in the current global community can be no longer restricted by national boundaries. It has become the responsibility of many players to have a coordinated public health and to move chronic disease prevention from "important and not urgent" to "important and urgent".
14. The continuing burden of NCD weighs heavily on a new Europe that is in the process of moving together politically, socially and economically. This clearly requires a new Region-wide NCD strategy based on the knowledge and evidence accumulated in the European Member States and worldwide. At their different degrees of affluence, Member States of today's diverse WHO European Region should be actively involved in developing this new strategy. They should have a clear understanding at all developmental levels that not investing in the prevention of major chronic diseases today will result in too high a price for the whole of Europe in years to come (10,11).

## Challenge for Europe

15. The need for a new and shared vision to deal with chronic diseases in today's new Europe is obvious. The mortality caused by major NCD in countries of central and eastern European Member States, and especially in Newly Independent States, is almost twice that of the EU countries (Health for All database, WHO Regional Office for Europe). A lesson already learnt from affluent European Member States is that traditional approaches to chronic diseases led to an enormous increase in costs for the society, but to very modest outcomes. Following these "traditional" routes in chronic disease control would lead to an increase in social inequalities and inequities in health within and among Member States.
16. This lesson is also the logical conclusion of an economic analysis of the costs to society of dealing with chronic diseases predominantly by means of disease-care approaches (9,10). Since the 1990s, Europe is larger in numbers. Social inequalities and inequities in health are also larger. The new emerging democracies are in transition in many ways. However, the disturbing fact is that certain health determinants such as the health behaviour of their populations (e.g. smoking by women) are taking a negative direction. If no urgent action is taken nationally and internationally, the health gap between groups of Member States within Europe will continue to increase (1,10,12,13).
17. It is of utmost importance that the governments and political bodies of European Member States as well as the health authorities have a common understanding and vision of a strategy to cope with chronic diseases. This would lead to cost effective approaches and improved health. A common understanding would also lead to consolidated action at the Regional level since such areas as tobacco, alcohol and nutrition could potentially be influenced more through international than national efforts.
18. The development of effective strategies to prevent NCD and reduce health inequalities is a complex task. No country on its own has the capacity to contribute more than a fraction of the necessary knowledge. The Regional inequalities in mortality trends during the last decades of the twentieth century have generally shown a widening gap in relative terms, and at best a stable situation in absolute terms. On the positive side, a great deal of progress was made in developing health policies and interventions during the 1990s. This places the Region in a stronger position to reduce inequalities in health in the future. A second encouraging point is that several countries have developed blueprints for comprehensive NCD packages. These have a sound theoretical basis and should continue to be given serious consideration by health policy makers (13).

19. In addressing the problem of chronic diseases in the Region, it is important to overcome existing myths. The following myths or misconceptions pose considerable obstacles as well as challenges in developing national chronic disease policies:

### Misconceptions

- **Chronic diseases are diseases of affluence.** Low socio-economic status leads to cumulative exposure to risk factors, greater vulnerability and decreased access to quality medical care;
- **Chronic diseases result from freely chosen risks.** Chronic diseases are not contracted solely through a failure of individual responsibility - governments and industry are also culpable, and children are especially vulnerable to risks imposed by the behaviour and standards of families and societies;
- **Chronic diseases are diseases of the elderly.** In less affluent societies a much larger proportion of younger people (many of working age) is affected by chronic diseases;
- **Global economic development will improve all health conditions.** While greater economic investment and higher incomes have eased the health challenges in some groups in less affluent societies, chronic diseases have been exacerbated by economic globalisation;
- **Benefits of chronic disease control affect only the individual.** Individuals certainly do benefit but so does society as a whole since the control of chronic diseases benefits societies economically and in terms of improving the public's well-being;
- **Treating individuals in the health sector is appropriate chronic disease prevention strategy.** The focus of the medical community on high-risk subjects does benefit the individual but effective long-term prevention requires a much wider, multisectoral commitment at societal level in addition to health-service intervention at individual level;
- **Chronic diseases are caused by genes - risk factors are only statistical associations.** Chronic diseases are not caused by genes, but by interaction of risk factors and genetic susceptibility; risk factors are strong causal factors and their elimination can powerfully prevent chronic diseases.

### Box 1

#### Chronic disease prevention and control: facts versus myths

- Chronic diseases are not a privilege of affluence
- Chronic diseases are not contracted solely by freely adopted risks
- Aging is not the only factor increasing the risk of chronic diseases
- Globalization per se will not improve the chronic disease situation
- Chronic disease prevention and control benefits are not limited solely to individual's health
- Treating "high risk" individuals only will not produce optimal results
- Chronic diseases are not caused by genes; elimination of risk factors can powerfully prevent these diseases

## WHO response

20. The Director-General of WHO in her report (14) to the WHA 55 emphasized that action to prevent NCD should focus on combating risk factors in an integrated manner. Intervention at the level of family and community is essential for prevention because the causal risk factors are deeply entrenched in the social and cultural framework of the society. Addressing the major risk factors should be given the highest priority in any strategy for prevention and control of NCD. Continuing surveillance of levels and patterns of risk factors is of fundamental importance to examining and evaluating preventive activities (1).
21. Social action is one of most important approaches in the NCD strategy. It refers to the three targets of the European Regional policy for health for all in the twenty-first century (Health21) (11): Target 1 on solidarity for health in the European Region; Target 2 on equity in health; and Target 8 on reducing NCD. These targets are to be reached by the reduction of social inequalities and inequities in health among Member States and among population groups within each country. Reduction of poverty and provision of education are the key interventions to reach these targets.

### Developing and testing CINDI concepts

22. Under the leadership of WHO, existing databases, e.g. in North Karelia, Finland, and Kaunas, Lithuania, on coronary heart disease prevention in the early 1980s were used to demonstrate the commonality of life-style related risk factors to a number of NCD (15). In 1982–1983, a group of European Member States, joined later by Canada, unified their efforts in the development of the CINDI Programme (4). CINDI, which addresses NCD through integrated action on common risk factors, has accumulated a great deal of experience in bringing together various actors from the health sector as well as out-of-health sector with a common task to improve health in regard to NCD through health promotion, disease prevention and improved health care action. The experience of CINDI, which has been followed by other WHO regions, combines preventive efforts at local level (tested in demonstration areas in every CINDI participating country, 106 areas across the CINDI network) and implementation at national level. To effectively monitor and evaluate community based interventions, CINDI developed innovative NCD information systems to cover demonstration areas and to link them to national policy and practice. By the end of the 1990s, more than 30 Member States were actively working together, collectively contributing to the common database on biological and behavioral risk factors, intervention modalities and experiences as well as mortality trends. The CINDI database reflects various components of CINDI implementation and presents a considerable body of evidence of what works in different national settings and what requires further development in terms of NCD policies and approaches.
23. The WHO Regional Office for Europe can build on several important pillars which, if used in a coordinated manner, might well serve as a basis for the development of a new NCD prevention and control strategy for Europe. These pillars are the European Strategy for Tobacco Control, the European Action Plans for Food and Nutrition Policy, Alcohol. The global initiatives such as the WHO Framework Convention on Tobacco Control, the Global Strategy on Diet, Physical Activity and Health, and the Move for Health initiative will help advance the implementation of health promotion and chronic disease prevention (16).

### Building on CINDI concepts

24. Changing lifestyle behaviours is generally considered to be extremely difficult. However, there is convincing evidence that lifestyle changes can occur in a relatively short time. This was clearly demonstrated in the collaborative research project which began as the FINBALT Health Monitor involving Finland and the Baltic States (Estonia, Latvia and Lithuania) and recently became the CINDI Health Monitor. It showed that dietary habits (and related overweight), tobacco use, alcohol consumption and physical activity were subject to very rapid change - both for good and bad (17,18). Furthermore, cause-specific and total mortality indicators in all Baltic States after health crisis in early 1990s started to recover and from 1994 improved significantly every year, eventually surpassing the pre-1990 level.

## Box 2

**Strategic action for health promotion**

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services

**Source:** Ottawa Charter for health promotion, 1986

25. Inspired by the Ottawa Charter concepts, a number of CINDI countries took an active part in the health promotion movement (Healthy Cities, Health Promoting Schools, Health Promoting Hospitals) during the 1990s. They collected a new type of information on health determinants related to NCD and in practice were bridging health promotion, disease prevention and health care activities at the primary health care level. CINDI experience in pioneering an integrated approach to NCD prevention and control has been extensively used when designing the WHO Mega Country Health Promotion Network, the Conjunto de Acciones para la Reducción Multifactorial de Enfermedades No Transmisibles (CARMEN) Programme of the Regional Office for the Americas as well as the WHO Global Forum on Noncommunicable Diseases Prevention and Control.

### Responses to date – moving towards a chronic disease policy

26. Despite considerable efforts by health professionals in developing chronic disease policy, under WHO guidance, the policy responses of key players to this public health issue in the European Region have been mixed and inadequate at both national and international levels (see Table 1). This means that a large proportion of European Member States still does not have a chronic disease policy, that their health systems continue to respond to emerging problems of chronic diseases in a rather fragmented way, that their budgets to cope with chronic diseases are inadequate, and that chronic disease arouse very little interest in the mass media and limited action in society. Key global initiatives such as G8 and G77, the United Nations Millennium Development Goals, global health research, and private-public partnerships have also either not responded or failed to allocate capacity and resources for chronic diseases. Inadequate capacity for preventing chronic diseases (especially for coping with underlying socioeconomic determinants) and financial constraints thus remain major impediments.



Table 1. Policy responses by key players to the burden of chronic disease

Key players	Policy responses	
	Of general nature	Specific to chronic disease
International organizations:  WHO	<ul style="list-style-type: none"> <li>Resolutions of WHA and Regional Committee for Europe on the Regional health for all (HFA) policy framework</li> <li>European Region strategy for attaining HFA by the year 2000</li> <li>Health21</li> </ul>	<ul style="list-style-type: none"> <li>WHA resolutions on integrated prevention and control of noncommunicable diseases</li> <li>WHA resolutions on risk factors for chronic disease (tobacco, diet, physical activity, alcohol)</li> <li>WHO Regional Office for Europe Action Plans for Tobacco-free Europe, Food &amp; Nutrition Policy, Alcohol</li> <li>Positioning CINDI to meet the challenges: a WHO CINDI policy framework for noncommunicable disease prevention (1993) (5)</li> <li>WHO Framework Convention on Tobacco Control</li> <li>WHO Global Strategy on Diet, Physical Activity and Health</li> <li>WHO Move for health initiative</li> <li>Food and Health in Europe: a new basis for action, WHO Regional Office for Europe (2004)</li> </ul>
EU	<ul style="list-style-type: none"> <li>Community action in public health (programme for 1997–2002)</li> <li>Public health programme for 2003–2008</li> </ul>	<ul style="list-style-type: none"> <li>Subprogramme areas on tobacco, alcohol, cardiovascular disease and cancer</li> <li>Determinants of health</li> <li>Information systems for health</li> <li>Promoting heart health - a European consensus (under the Irish Presidency of EU)</li> </ul>
NGOs	<ul style="list-style-type: none"> <li>Capacity building initiatives by the Association of Schools of Public Health in the European Region (ASPHER)</li> </ul>	<ul style="list-style-type: none"> <li>European Heart Network (EHN): Tobacco use - priorities for action (1998)</li> <li>EHN Expert Group on Physical Activity (1999)</li> <li>EHN Nutrition Expert Group. Food, nutrition and cardiovascular diseases in the European Region: challenges for New Millennium (2002)</li> <li>Third Joint Task Force of European and other Societies on Cardiovascular Diseases Prevention in Clinical Practice (2003)</li> </ul>
Heads of State	<ul style="list-style-type: none"> <li>G8: Recognition that "health is the key to prosperity" and "poor health drives poverty"</li> </ul>	<ul style="list-style-type: none"> <li>However, little commitment to chronic diseases except some support to the Framework Convention on Tobacco Control</li> </ul>
Ministries of Health	<ul style="list-style-type: none"> <li>National health policies of European Member States</li> </ul>	<ul style="list-style-type: none"> <li>Specific policies for selected chronic diseases; however, inadequate capacity and budgets in most of them</li> </ul>
Academic and research institutions	<ul style="list-style-type: none"> <li>General recognition of the problem and research advocated</li> </ul>	<ul style="list-style-type: none"> <li>Support and assistance in developing policies for selected chronic diseases with no provision of adequate funding</li> </ul>
Private sector	<ul style="list-style-type: none"> <li>Little interest in primary prevention</li> </ul>	<ul style="list-style-type: none"> <li>Considerable investments in secondary prevention</li> </ul>
Media	<ul style="list-style-type: none"> <li>Lack of interest in primary prevention and long-term strategies</li> </ul>	<ul style="list-style-type: none"> <li>Chronic disease low on the scale of interest compared with acute infections and sensations</li> </ul>

27. In this respect, the initiative taken by the Irish Presidency of the EU seeking a consensus for promotion of cardiovascular health in Europe offers a good opportunity to reconsider policy decisions aimed at mobilization of European Member States to help European populations stay healthier and live longer with more productive lives (19).

### Renewed opportunities for a European strategy for chronic disease

28. The accumulated experience of CINDI and other international programmes offers Member States a unique foundation on which to develop and implement an effective strategy to reduce chronic diseases. The strategy should be effected through public health action that tightly coordinates health promotion, disease prevention and improved health care. Solid documentation is available on effective interventions to enable people to live longer and healthier lives (1,20,21,22,23,24,25,26), to reduce inequalities in health (12,13) and enhance health development (27,28,29). Mobilizing the full potential of the Member States should turn the vision into reality - the effective control of chronic diseases will lead to improved health throughout the Region (11).

### Suggested goal and objectives for a European strategy for chronic disease

29. The overall goal of the European strategy for chronic disease is the promotion and protection of health and prevention of chronic diseases through integrated public health action at local, national and Region-wide levels. The strategy should ultimately reduce the burden of disease on society.
30. The strategy would cover three main objectives:
- To stimulate the development and implementation of national chronic disease policies.
  - To accelerate the dissemination of accumulated knowledge and experience.
  - To improve international cooperation on multisectoral strategies to tackle the burden caused by chronic diseases.

The strategy should be grounded on evidence of the commonality of major risk factors, on the need for integrated approaches to deal with them and on the mobilization of all European Member States to action. The achievement of the overall goal will depend on international cooperation to develop and put into practice a common strategy to combat chronic diseases.

### Evidence and strategic framework for action

31. The World Health Report 2002 (1) describes in detail how a few major risk factors account for a significant proportion of all deaths and disease in most countries. For chronic diseases the most important risks are high blood pressure, tobacco use, high cholesterol, low fruit and vegetable intake, overweight and reduced physical activity. If not changed, they will be indicators that project a rising trend of NCD in the years to come.
32. To be effective, preventive action must be rooted in a solid knowledge base integrating science, practical experience and sound policies. The greatest need and challenge is to put the most promising policies into practice and establish programmes to prevent chronic diseases to the fullest extent possible. Here CINDI can offer a huge potential to be tapped and lessons learnt in its experience of community demonstration projects and best practices in chronic disease prevention.

## Box 3

**Integrated action**

CINDI experience as well as that from “vertical” chronic disease programmes gives sufficient evidence that, in developing and implementing a more comprehensive strategy to deal with chronic diseases, several lines of integrated action need to be followed:

- formulation of a policy on chronic diseases
- health promotion and protection in action
- disease prevention that combines population-based and high-risk strategies
- balanced health care with a strong primary health care supported by a logical referral system (including rehabilitation).

**Building and communicating knowledge base**

- 33.** Advances in etiological research of major NCD, primarily cardiovascular, have resulted in numerous intervention projects and programmes all through Europe and indeed the world. The scope of these activities is very wide - from preventive action on a single risk factor such as tobacco or hypertension or a disease such as coronary heart disease to a more comprehensive approach involving several risk factors common to several chronic diseases.
- 34.** Research on the prevention of cardiovascular diseases, primarily coronary heart disease, has undergone a long process of development in the Region at national, international and especially WHO-coordinated levels. From interventions on a single risk factor in the early 1970s, intervention research was extended to multiple risk factors, followed by research in community approaches to cardiovascular diseases. The latter culminated with the WHO Comprehensive Cardiovascular Community Control Programmes (CCCCPs), which in some Member States of Europe, e.g. Finland, were implemented at country level. These programmes have clearly demonstrated the feasibility of comprehensive community-based cardiovascular programmes and the need to extend intervention activities to other chronic diseases as well. The North Karelia project in Finland is a good example on how a demonstration project can be expanded to national level (20,27).
- 35.** The long-term follow-up of examined population samples in the North Karelia project in Finland demonstrated that the 82% decline in coronary heart disease mortality in the male population aged 35-64 over 30 years could be predicted and explained to a large extent by the decline in the level of three risk factors: high blood pressure, high cholesterol and smoking. Furthermore, mortality rates from lung cancer had a very similar pattern, declining by over 60% within the same period (30). Similarly, the 10-year coronary heart disease and total mortality trends in the Kaunas, Lithuania, cohort of the Kaunas-Rotterdam Intervention Study were predicted and explained by the levels of systolic blood pressure, cholesterol, body mass index and smoking (31,32).
- 36.** A recent meta-analysis of data from a number of epidemiological studies clearly indicates that there are misconceptions about the relative importance of the classic risk factors. One of them is a belief that they account only for about half of all cardiovascular diseases (33). The real importance of a risk factor will be systematically underestimated unless some correction is made for “regression dilution” bias. For example, defining the “low risk” group as people in the bottom fifths of total cholesterol (<5.5 mmol/l) and diastolic blood pressure (<74 mmHg) and not current smokers, the population attributable risk fraction (PARF) was 70% before correction for regression dilution and 81% after correction. Similarly, by defining the “low risk” group of people in the bottom tenths of cholesterol (<5.2 mmol/l) and diastolic pressure (<70 mmHg) and not current smokers, the PARF estimates were 75% before correction of regression dilution and 86% after correction. This means is that effective control of risk factors may result in up to an 86% reduction in coronary heart disease (34).

37. CINDI's accumulated information on good practice and new methods of preventive programme planning, implementation and evaluation should be shared to benefit other programmes. A concerted effort is needed to disseminate and market this knowledge at international level.
38. There is ample evidence on the scientific justification for action. However, there is little evidence about the cost-effectiveness of having policies on public health and chronic disease prevention or of putting them into practice.
39. The CINDI framework, however, could be used to generate such evidence for an explicit evaluation component incorporated in the CINDI method of implementation. The operational research capacity of CINDI can be exploited to improve understanding of cost-effective approaches to implementation of chronic disease prevention, which can feedback directly into policy and resource allocation decisions.
40. A sharply targeted and research-focused agenda on chronic diseases is urgently needed at Regional level. Several research priorities were identified at the WHO meeting on NCD research partners in Geneva in 2001. Priorities included identification of the optimal mix and sequencing of strategies for chronic disease prevention, identification and development of cost-effective strategies for controlling chronic diseases and research on the impact of globalization on risk factors (35). CINDI offers a useful platform for implementation research for the above priorities.
41. Research into the prevention of chronic diseases requires a supportive infrastructure. National CINDI programmes constitute unique networks and are repositories of a wealth of implementation knowledge. They are true observatories and their rich experience on chronic disease prevention can provide useful guidance to other countries. However, this knowledge is often scattered and therefore not fully exploited. Ways and methods of collecting and analysing this wealth of CINDI experience with successes and failures should be devised.
42. NCD action has previously tended to follow a model orientated towards a single specific health issue. Each of the major disease entities or risk conditions was seen as the starting point for the development and implementation of its own prevention programme, separate from those of the other entities and therefore known as a vertical programme. These vertical programmes are thus not integrated and this is reflected in a multiplicity of NCD prevention initiatives that do not relate to one another. This lack of integration or coordination results in a fragmented approach to chronic disease prevention. A narrow focus on one topic can also mean that other areas are neglected or that funding ends so that work on a related but different programme can start.

#### Box 4

##### Population goals for the prevention of cardiovascular diseases in Europe

- A reduction in the intake of saturated fat and trans fat
- An increase in the consumption of fruit and vegetables
- A reduction in the intake of salt
- An increase in physical activity levels
- A reduction in body mass index

**Source:** European Heart Network's Expert Group on Nutrition. Food, nutrition and cardiovascular disease prevention in the European Region: challenges for the New Millennium. Brussels: European Heart Network, 2002.

43. Linking a number of initiatives on single disease entities and risk factor prevention offers true opportunities to move towards an integrated approach to public health. This integrated approach is a logical step in the evolution of prevention planning as it maximizes the benefits of investing in prevention. Many initiatives, such as the recommendations on preventing cardiovascular diseases, already encompass integrated elements, as presented in boxes 4, 5 and 6. The CINDI guide for healthy eating is also an example of the attempt to address chronic disease prevention in an integrated manner (Box 5).

**Box 5****Twelve steps to healthy eating**

1. Eat a nutritious diet based on a variety of foods originating mainly from plants, rather than animals.
2. Eat bread, grains, pasta, rice or potatoes several times per day.
3. Eat a variety of vegetables and fruits, preferably fresh and local, several times per day (at least 400g per day).
4. Maintain body weight between the recommended limits.
5. Control fat intake (not more than 30% of daily energy) and replace most saturated fats with unsaturated vegetable oils or soft margarines.
6. Replace fatty meat and meat products with beans, legumes, lentils, fish, poultry or lean meat.
7. Use milk and dairy products (kefir, sour milk, yoghurt and cheese) that are low in both fat and salt.
8. Select foods that are low in sugar, and eat refined sugar sparingly, limiting the frequency of sugary drinks and sweets.
9. Choose a low-salt diet. Total salt intake should not be more than one teaspoon (6g) per day, including the salt in bread and processed, cured and preserved foods. (Salt iodization should be universal where iodine deficiency is endemic.)
10. If alcohol is consumed, limit intake to no more than two drinks (each containing 10g of alcohol) per day.
11. Prepare food in a safe and hygienic way. Steam, bake, boil or microwave to help reduce the amount of added fat.
12. Promote exclusive breastfeeding and the introduction of safe and adequate complementary foods from the age of about six months, but not before four months, while breastfeeding continues during the first years of life.

**Source:** CINDI dietary guide. Copenhagen, WHO Regional Office for Europe, 2000 (EUR/00/5018028) (<http://www.who.dk/document/e70041.pdf>)

44. An integrated attack on the common risk factors must be central to the strategy to prevent and control chronic diseases. Since realistically it may be not possible to tackle all risks at the same time, the strategy should accord highest priority to the risk factors that offer the greatest potential for improving health, in both the short and long term.

**Box 6****Recommendations on physical activity level**

- Young people who currently engage in little activity should participate in physical activity of at least moderate intensity for at least half an hour a day.
- All young people (aged 5–18 years) should participate in physical activity of at least moderate intensity for one hour a day.
- Every European adult should accumulate at least 30 minutes of moderate-intensity physical activity most and preferably every day of the week.

**Source:** European Heart Network's Expert Group on Physical Activity. Physical activity and cardiovascular disease prevention in the European Union. Brussels: European Heart Network, 1999.

45. Tobacco continues to be the most important risk factor (36). Diet and physical activity have also a major impact on population health. They affect obesity and other risk factors such as hypertension and hypercholesterolaemia. Some successes on tobacco have been achieved through comprehensive multilevel approaches sustained over a period of time. However, to date, tobacco control initiatives have not been well integrated with other risk factor interventions. There is a clear opportunity for more integrated messages and programmes to improve health interventions.

**Box 7****Recommendations for action on tobacco use****Priority recommendations**

- Ban tobacco advertising
- Increase taxation of tobacco
- Limit the availability of tobacco products for juniors
- Promote a smoke-free indoor environment

**General recommendations**

- Legislate for smoke-free environments
- Reduce maximum tar yield
- Tighten laws on health warnings
- End EU tobacco subsidies
- Increase funding for health promotion and smoking cessation

**Adapted from:** European Heart Network. Tobacco use: the dramatic effect on cardiovascular disease in the European Union and priorities for action. Brussels: European Heart Network, 1998.

46. Underlying the integrated approach to chronic diseases is the partnership approach for planning, implementing and evaluating intervention programmes. This may require a strategic governance structure at both country and regional levels. Various models of successful partnerships in integrated action are documented in CINDI experience.
47. The marked elevation of a single risk factor predicts an individual's ill health. However, the societal burden from chronic diseases results from the high prevalence of risk factors in the population. Therefore, the reduction of the burden from chronic diseases requires an integrated public health approach targeted to the population, in addition to the individuals at high risk (37). In this respect, CINDI contributes to the knowledge on preventive action across the continuum of health promotion, disease prevention and health care.
48. Risk factors are deeply entrenched in social and economic conditions. This means that chronic diseases need to be tackled outside the health sector (38,39,40). Consequently, integrated approach implies intersectoral collaboration. In this regard, the opportunities to link disease prevention with health promotion in such projects as Healthy Cities or Health Promoting Schools need to be explored and developed.

**Strengthening capacity**

49. There is a clear need to strengthen the capacity of public health services for preventing chronic diseases. This would mean further developing training systems, building coalitions and improving dissemination of knowledge. At present there are many training initiatives in epidemiology and behavioural sciences but training in integrated interventions and practical implementation of chronic disease prevention is indeed limited. The International Visitors' Programme of the North Karelia Project, Finland, the CINDI Weeks in Portugal, and the CINDI Winter School currently possess the longest experience in training on development, implementation and evaluation of chronic disease prevention programmes. The 20 years' experience of the CINDI Programme implementation could be further exploited by making it available through modern communication technology.

**Surveillance and monitoring**

50. Surveillance is a fundamental component of chronic disease programme development, implementation and evaluation. In most countries the institutional capacity for surveillance is weak and methodologies diverse. The CINDI Programme has a standardized methodology and comprehensive system for monitoring and evaluating chronic disease prevention programmes. The CINDI Protocol and Guidelines (4) specify the essential indicators, data sources and the methods to be used for local, national and international assessment.

51. Effective monitoring of target risk factors and behaviours is of special strategic importance. To better monitor health-related behaviour at community level in countries which are implementing an integrated approach, the CINDI Programme offers a feasible surveillance methodology which is described as the CINDI Health Monitor.
52. Quantitative and contextual qualitative information needs to be collected at multiple levels to support policy development (41,42,43). Information on chronic disease prevention needs to be better conveyed. The results of surveillance should be disseminated not only to the decision makers but also to the public. The mass media, particularly television, play a central role in this process.
53. Despite the serious burden caused by chronic diseases, Member States lack a comprehensive system for monitoring these diseases, risk factors and determinants. Unlike communicable diseases, for which many laws define reporting requirements, chronic diseases have not received the same political interest and financial investment toward surveillance, despite their much greater impact all through society. To establish a comprehensive NCD surveillance system would require the coordination of many different organizations and centres of responsibility at local, national and international levels.

### Integrating prevention into health systems

54. The health service is an essential component of any comprehensive action to improve public health. The national CINDI programmes are firmly rooted in their health systems and draw on system resources in both public health and health care. The CINDI Programme is therefore in an excellent position to provide leadership and guidance in the task of establishing preventive services as an integral part of health systems. CINDI has demonstrated its capacity to set up preventive interventions at both local and country levels. Its resources include a policy framework for prevention, trained personnel and guidelines on preventive practices in primary health care and an international network of countries, agencies and experts who are committed to the task of preventing chronic diseases.

#### Box 8

##### Objectives for secondary prevention of coronary heart disease

- No smoking
- Make healthy food choices
- Be physically active
- Body mass index <25 kg/m<sup>2</sup>
- Blood pressure <140/90 mmHg in most, <130/80 mmHg in particular groups, such as persons with diabetes
- Total cholesterol <5 mmol/l (190 mg/dl) in most, <4.5 mmol/l (175 mg/dl) in particular groups
- LDL-cholesterol <3 mmol/l (115 mg/dl) in most, <2.5 mmol/l (100 mg/dl) in particular groups
- Good glycaemia control in all persons with diabetes
- Consider other prophylactic drug therapy in particular groups

**Source:** de Backer G. et al. Third Joint Task Force of European and other societies on cardiovascular disease prevention in clinical practice. Eur J Cardiovascular Prevention Rehabilitation 2003; 10 (4) (Suppl 1): S1-S78.

55. Health system reforms need to adequately respond to the growing burden caused by chronic diseases. This can be achieved by designing cost-effective health care packages; drawing up evidence-based guidelines for the management of the major chronic diseases; and transforming the role of health care managers by vesting managers with responsibility not only for institutions, e.g. hospitals, but also for the effective management of resources to promote and maintain the health of a defined population.

56. It is vital that chronic disease control is effective and best possible use of the health system resources of each country is made. The World Health Report 2002 (7) provides guidance on cost-effective strategies at both population and individual levels. The most successful interventions are those in which policies and action are implemented at community and national levels and in which health services take an active part. This is exemplified in the successful interventions effected over many years in North Karelia, Finland, in the Setubal district of Portugal, and in other places.
57. Preventive efforts require health services to forge closer links with the patient and the consumer. This principle applies to all health problems whether communicable or noncommunicable diseases are in focus. Experience gained in the development of integrated programmes such as the WHO Integrated Management of Child Illnesses (IMCI) programme can provide useful lessons for chronic disease prevention.

### Partnership and resource mobilization

58. Regional and national partnerships in chronic disease prevention such as the CINDI network present opportunities to multiply resources, share experience and capitalize on the lessons learnt. However, progress will be limited and unsustainable if there is no significant investment in capacity building. The WHO collaborating centres are a rich source of expertise and capacity in operational research and training. The WHO Global Forum on NCD Prevention and Control can play a significant role at global level in partnership and resource mobilization. At the same time the CINDI network can engage in new partnerships with development agencies, NGOs, professional organizations, the World Bank.

## Building on CINDI experience

59. CINDI experience has shown that much can be done with scarce resources. The most important resource has proven to be people. Networking and capacity building has made an important contribution to programme development in countries with widely differing capacities for coping with chronic diseases. CINDI models of development in different countries vary considerably (Box 9). CINDI experience has shown that countries should be allowed to start with small projects, limited in scale and differing in the number of demonstration areas. Over time, such projects can grow into countrywide implementation.

### Box 9

#### Models of CINDI Programme development in selected countries

- Countrywide from the start - Cyprus, Iceland, Malta
- Comprehensive intervention in one demonstration area with gradual expansion countrywide - Finland, Portugal, Slovenia
- Countrywide chronic disease policy with testing in a demonstration area - Canada
- Multiple demonstration areas representing a country's administrative structure with the subsequent development of a national health policy and action plan on chronic diseases - Lithuania
- Large region as a demonstration area with a subsequent comprehensive programme regionwide - Austria, Germany, Spain, United Kingdom
- Multiple district demonstration areas with elements of countrywide intervention - Belarus, Czech Republic, Estonia, Hungary, Poland, Romania, Slovakia, Ukraine
- Multiple demonstration areas gradually expanding to region-wide programmes and planning for countrywide action - Bulgaria, Russian Federation
- One demonstration area with elements of countrywide action - Latvia, Kazakhstan, Kyrgyzstan, Turkmenistan



## Countrywide dimension

60. The ultimate goal of national CINDI programmes is to spread integrated interventions throughout a country either expanding the programme countrywide or by fully contributing to comprehensive countrywide action. A recent CINDI survey on NCD policy development and implementation process showed that most programmes were set up at demonstration area level. Action was gradually expanded to national level, although in some cases it was limited only to some elements. Nevertheless, the fact that in about half of the programmes, the national government was a main source of programme funding and in one third the national government was reported a major partner, attests to the importance of the programmes for the country as a whole.
61. The goal to extend programmes countrywide poses a great challenge – but also lends political attractiveness to the programme. Most of national CINDI programmes that are still operating at the demonstration level are moving towards the countrywide goal, although at different speeds. Perhaps this is as it should be for the programmes that are at different stages of development. For a country that has recently joined CINDI, it may well be best to start with demonstration areas while the programme consolidates its functional capacity in monitoring and evaluation, in establishing sustainable management structures and financing, and in developing basic partnerships.
62. It may also be more useful to regard the countrywide goal as a continuous variable (with countries being at different stages on this continuum) rather than as a dichotomous one. This understanding would show that most (but not all) national CINDI programmes are moving towards a countrywide impact as they expand collaboration with national organizations, establish partnerships at national and international level, and are increasingly involved in national health policy development.

## Demonstration

63. Demonstration programmes form the backbone of CINDI programmes (Annex 2). The concept of demonstration may mean different things in different countries where CINDI activities began at different times. For example in Finland, the North Karelia project was a demonstration of the feasibility of preventing cardiovascular and other chronic diseases in the community. It took nearly a decade for this project to develop into Finland's countrywide CINDI programme. Other examples can be seen in the second generation of CINDI programmes that use the demonstration platform to develop the capacity for implementation, or to adopt methods of prevention and promotion that proved effective elsewhere. These and similar approaches are being adopted by CINDI-Canada, CINDI-Russia (which has many demonstration areas) and other CINDI countries.

## Dissemination

64. Dissemination is emerging as a key intervention strategy. It brings local efforts into countrywide effect and makes them sharply relevant at national level. To move from demonstration to dissemination first and foremost requires financial resources. It also requires trained human resources, policy and political support from health professionals, support from the population as a whole, appropriate partnerships and refocused management structures (41).
65. An important task is to devise practical ways of disseminating the lessons learned by CINDI programmes, such as how to successfully implement a programme, what interventions are effective, or how to organize capacity building. Relatively little research has been done into the process of dissemination and few resources have been devoted to the development of databases on case studies and the recording of experience.
66. The increased involvement of CINDI programmes in national health policy development is an opportunity to sell the concept of dissemination to government policy-makers. In order to make an effective impact, chronic disease programmes must deliver the prevention dose: doing the right thing to the right number of people with the right duration and the right intensity of intervention (44). The practical experience of CINDI programmes is rich raw material for the science of implementing preventive interventions in chronic disease. Analysis of this material would strengthen dissemination.

## Integrated prevention

67. Integration is a key principle of the CINDI approach to preventing chronic diseases. The term has several meanings. Integration refers to:
- (a) an intervention that is aimed at several risk factors and effected by the national CINDI programme within the country's health system;
  - (b) a comprehensive approach that combines various implementation strategies including policy development, capacity building, partnership, and information support at all levels;
  - (c) intersectoral action that implements health policies including coordinated action by several sectors to address major determinants of ill-health that fall outside the remit of the health sector;
  - (d) combination of population and high-risk strategies which would link the preventive action of various components of the health system such as health promotion, public health services, primary care, and hospital care.

To be effective in chronic disease prevention, countries need to keep in mind these important constituents of programme development and implementation. This applies whether the countries are members of the CINDI network, eager to join it or merely wish to benefit from CINDI experience.

68. To put integration into practice, a country should create opportunities for integrated action. This means choosing intervention areas, strategies, methods, settings and partners. Most national CINDI programmes have chosen to work on several risk factors at once. Three top priorities for intervention are tobacco, physical activity and dietary habits. Major intervention strategies include professional education, monitoring and evaluation, community mobilization, policy development, and dissemination. Priority is given to interventions in community settings, such as workplaces, schools and the community itself. From the very beginning it is important that programmes design and implement interventions in close collaboration with a wide range of partners, particularly primary health care and public health services. CINDI experience indicates that support from the ministry of health and collaboration with partners are facilitating factors in the delivery of chronic disease prevention through the health sector.

## Balancing population and high-risk strategies

69. Several CINDI programmes demonstrate that special efforts are needed to put into practice the population strategies of health promotion and disease prevention. The following are facilitating factors:
- (a) a supportive framework for health promotion at national level;
  - (b) guidance and coordination of the programmes balanced between research institutions and the health system;
  - (c) the securing of a balance among partners from the health sector, the non-health sector and the private sector, and within the sectors.
70. Integration of activities aimed at health promotion and disease prevention cannot be achieved without intersectoral action. Health is affected by determinants and issues that arise beyond the health sector and these must be tackled. They include social inequality, poverty, the economy, management, societal and political structures, education, agriculture, food industry, trade, social services and welfare, community organizations and others. Involvement of various partners from other sectors in priority decision-making is an opportunity to bring about integrated action.
71. Availability of resources is a prerequisite for the implementation of integrated interventions. CINDI programmes have multiple partners and funding from a very wide range of sources. In moving towards action at countrywide level, the programmes should have in place a strategy to ensure an even wider range of collaborative partners and sustainability in resources.

## Improving CINDI performance

72. CINDI programmes need adequate national capacities (resources, structures and skills) in order to move forward – towards the countrywide goal and the integration of various sectors and fronts in chronic disease prevention and health promotion. The CINDI database shows that about two-thirds of national programmes have improved their capacities in intervention strategies such as professional education, monitoring and evaluation. However, the programmes still need to invest in strengthening their capacities in other fields such as the development of programme administration and structure, the use of modern communication technology, resource mobilization, marketing, partnerships, and particularly community mobilization, and dissemination.
73. Policy development is a key intervention strategy. The CINDI database shows that programmes have increased their capacity in this field considerably. Almost all countries have contributed to their national health policy document and most of them have prepared a chronic disease policy document as well. However, there is a need to further strengthen national capabilities in chronic disease policy development.
74. Chronic disease prevention demands that CINDI is well integrated in health service routines. Most country programmes already work closely with the public health services and primary health care and have been involved in advocating prevention, training and professional education, generating prevention guidelines, building NCD surveillance systems, and developing curricula for prevention. Future challenges imply even closer collaboration. Health system reform offers many opportunities (such as new infrastructures and new resources for NCD prevention) for the further integration of CINDI projects and practices in the health systems.
75. Membership of the CINDI network gives countries broad access to know-how and best practices in health promotion and disease prevention. The CINDI network offers various ways to study best practices and share information and experience. One example is the evidence-based public health course in chronic disease prevention aimed at the training of trainers. It is organized in collaboration with the Centers of Disease Control and Prevention (CDC), Atlanta, USA, and St Louis University, USA, along with CINDI-Austria, CINDI-Canada, CINDI-Finland and CINDI-Lithuania. Following this training several CINDI countries have held their own courses, created training material for health professionals, and elaborated a curriculum for undergraduate training in chronic disease prevention. These courses should be continued and, if resources permit, expanded.

## CINDI contribution to global chronic disease initiatives

76. CINDI is a unique action-focused international network that seeks to implement an integrated approach to health promotion and the prevention of chronic diseases. Its members share common goals, resources and experiences. The CINDI experience in the WHO European Region has inspired similar initiatives in other WHO regions, for example the CARMEN network in the Americas which is based on the CINDI approach and protocol.
77. The CINDI network recognized the need to extend its collaborative action from regional to global level. In 2001, CINDI took the initiative to establish the Global Forum on NCD Prevention and Control. In line with the WHO Global Strategy for NCD prevention and control approved by the 53rd World Health Assembly (45), the Global Forum works through regional networks. The Global Forum objectives include the following:
- to encourage the development of regional networks of national integrated programmes on chronic disease prevention and control in all six WHO regions;
  - to support regional networks through interregional collaboration and international partnership;
  - to disseminate scientific evidence and experience, and provide updated guidance on primary and secondary prevention of chronic diseases;

- to increase awareness of chronic disease prevention and control through advocacy at regional and global levels;
- to promote the harmonization of monitoring and surveillance methodologies;
- to promote collaboration, research and capacity building in relation to primary and secondary prevention;
- to contribute to training and capacity building.

- 78.** National CINDI programmes are key players in implementing public health action to prevent and control chronic diseases and in keeping a balance between population and high-risk strategies. By virtue of this role, these programmes can contribute to the debate on how health systems can respond to priority health needs balancing health resources and increasing allocative efficiency. This means helping to redress disproportionate allocations to curative care vis-à-vis those accorded to disease prevention and health promotion, especially in the area of chronic diseases (1).
- 79.** The CINDI network can play an effective role in dissemination acting as a linking agent that connects to other initiatives and networks, and sharing experience accrued over many years on implementing interventions through health systems, particularly in primary health care. Two natural allies are the Global Forum on NCD Prevention and Control and the WHO Mega Country Health Promotion Network. There are many compelling reasons for the CINDI network to engage other networks and initiatives. By enriching the capacity of others, the national CINDI programmes will further enrich their own capacity.
- 80.** It is a major organizational challenge to carry out broadly based international action in chronic disease prevention. A programme like CINDI covers so many issues involving health systems, stakeholders and content that it would be impossible to use conventional models of organization. Partnerships and networks are strategic instruments. They are an expression of Bandura's notion of "collective efficacy". There is a great value in bringing together individuals and organizations that have proved themselves effective in chronic disease prevention, and giving them the opportunity to address prevention issues collectively through public health action. The key challenge for the future is to maintain these networks, ensure their sustainability and added value.

## Moving towards a European strategy to prevent chronic disease

- 81.** In the development of such a strategy, the following areas need to be supported at regional, national and international level.
- **Surveillance** is essential to quantify and track trends in NCD and their determinants. It also provides the foundation for advocacy, national policy and action at different levels.
  - **Disease prevention** and health promotion, if successful, are the two most important factors in reducing the burden of premature morbidity, mortality and disability. They are also the two courses of action that will have the most significant impact on the economy and development of each Member State.
  - **Health-care innovations** and effective health-sector management that are tailored to actual situations and capacities in each Member State are of crucial importance for implementing the strategy. Cost-effective and equitable interventions are equally important in the management of established NCD.

## Role of key players

### Member States

82. The process of developing a European Region NCD strategy should hopefully inspire Member States to play an active role in this Region-wide effort by contributing their specific country experience to the strategy and by developing their national NCD policies and programmes.
83. At national level, Member States should be able to test and develop several key components of NCD policy formulation, implementation, monitoring and evaluation. Tasks will include the following:
  - **Generating a local information base for action:** Assess and monitor mortality attributable to NCD and the level of exposure in the population to NCD determinants and risk factors. Devise a mechanism by which surveillance information can contribute to policymaking, advocacy and evaluation of health care.
  - **Establishing a national programme to prevent NCD:** Form a national coalition of all stakeholders, develop a national plan, define the strategies and set realistic targets. Establish pilot (demonstration) prevention programmes based on an integrated risk-factor approach that can later be extended countrywide. Build up the capacity at national and community levels to develop, implement and evaluate integrated prevention programmes. Promote research on issues related to prevention and management.
  - **Ensuring that health-sector reforms are responsive to the challenge:** Design cost-effective health-care packages and draw up evidence-based guidelines for the effective management of the major NCD. Transform the role of health-care managers by vesting them with responsibility not for institutions, e.g. hospitals, but for the effective management of resources to promote and maintain the health of a defined population.
  - **Tackling issues outside the health sector that influence the control of NCD:** Assess the impact of social and economic development on the burden of the major NCD with a view to conducting a comprehensive and multidisciplinary analysis. Develop innovative mechanisms and processes to help coordinate government activity as it affects health across the various arms of government. Accord priority to activities that place prevention high on the public agenda, and mobilize support for the necessary societal action.
84. A simplified and structured guide for developing national chronic disease programmes is presented in Box 10. Similarly, the design of the CINDI Programme (with structure, approach, action, policy and protocol requirements) is given in Annex 2.

**Box 10****Proposed country level guidelines for implementing a comprehensive chronic disease strategy****Generating an information base for action:**

- Assess and monitor NCD mortality, exposure to risk factors and their determinants in the population
- Provide a mechanism for surveillance information to contribute to policy making, advocacy and evaluation of health care

**Establishing a national programme for chronic disease prevention:**

- Form national coalition of all stakeholders and set realistic targets
- Establish pilot programmes for NCD prevention based on integrated risk factor approach that can be extended nationally
- Build capacity at the national and community level for the development, implementation and evaluation of integrated NCD programmes
- Promote research on issues of NCD prevention and management

**Addressing issues outside health sector which influence chronic disease control:**

- Assess the impact of social and economic development on the burden of the major NCD with a view to developing a comprehensive, multidisciplinary analysis
- Develop innovative mechanisms and processes to help coordinate government activity as it affects health across the various arms of government

**Ensuring health sector reforms responsive to chronic disease challenge:**

- Develop cost-effective health-care packages and evidence based guidelines for the effective management of priority NCD
- Transform the role of health-care managers by vesting managers with responsibility not for institutions but for the effective management of resources to promote and maintain the health of a defined population.

**WHO Regional Office for Europe**

- 85.** The WHO Regional Office for Europe should continue its efforts to collate existing knowledge and scientific evidence on the prevention of NCD. This would include a systematic review of the effectiveness of interventions on single and multiple risk factors or issues and analyses of lessons learnt from case studies on both success and failure stories. It would also include economic analyses of preventive activities as well as other analyses. At a later stage it could lead to the establishment of repository or observatory on NCD for the WHO European Region, with a solid database for a quick situation analysis, assessments or inventories, as required.
- 86.** The resources of the Regional Office include networks of collaborating centres in the area of NCD prevention, networks of centres of excellence in the Region, and access to top-level technical expertise. The Regional Office should use these and other resources at the request of the Member States to help them develop and implement integrated approaches to NCD prevention. In pragmatic terms this support would include:
- guidance on setting up programmes with special focus on integration and on specific single-issue activities;
  - advice and guidance on developing support systems to cover the entire spectrum of action requiring intersectoral collaboration and to help integrate the functions of planning, management, funding, communication and information;
  - guidance on developing accountability mechanisms for health in all sectors of society - perhaps starting with health impact assessments;
  - advocacy and support in developing NCD risk and prediction models - including modelling techniques, policy and economic analysis, and evaluation of the cost-effectiveness of applied interventions.

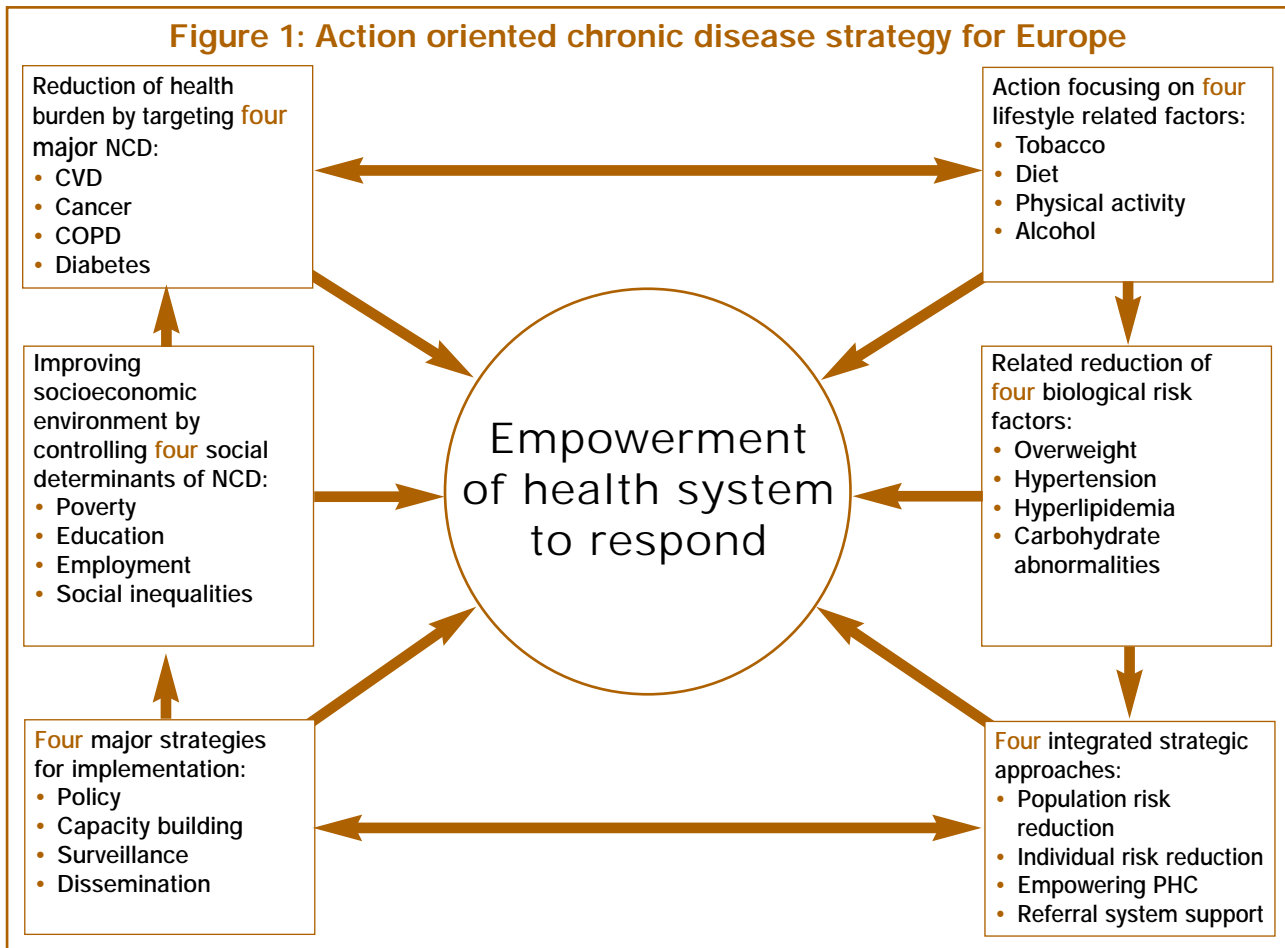
87. The Regional Office should support and promote the development of NCD surveillance systems. These systems do not exist in the European Region, nor indeed in most of the other WHO regions. It is difficult to overestimate the importance of WHO as a catalyst in creating country NCD surveillance systems and establishing an international databank. Priority should be given to data on risk factor prevalence and indicators of the process of developing policies and programmes for NCD prevention.
88. The Regional Office should promote applied research in NCD prevention to improve knowledge database and support countries in developing chronic disease policies. Priority should be given to research on implementation which is needed as a basis for forming policy, assessing capacity and creating programmes on NCD prevention.
89. The Regional Office should support the development of mechanisms for sharing information and using modern communication technologies. This would help resolve many of the issues mentioned above. At present, the Member States need databanks and web sites that are relevant to NCD prevention and that meet their needs. Internet technology could also be used to develop education systems for both professionals and the public.
90. To sum up, strategic support on research and development from the Regional Office (in close collaboration with other partners) would cover research into the priority areas of health promotion and disease prevention and control to facilitate implementing and evaluating NCD programmes. This should include analytical, operational and behavioural research. Special attention should be given to innovative research on social inequalities, poverty, gender, cost-effective care and genetic approaches to prevention. The Regional Office should strengthen the role of the WHO collaborating centres in supporting implementation of the Regional NCD strategy, particularly with regard to coordinating collaborative research.

## Collaboration and partnerships

91. The new EU Public Health Programme contains several important components of the integrated approach to chronic disease that were developed by WHO. These are sections on health information, health determinants, health promotion and disease prevention including specific areas on cancer prevention and control. Numerous national and international NGOs and agencies are working in the areas of health promotion and disease prevention. They are clearly oriented towards the outcomes of reducing the burden caused by chronic disease and improving the quality of life. The recent initiative taken by the G8 countries in developing a database on cardiovascular diseases prevention programmes (as part of their programme on Prevention, Diagnosis and Treatment of Cardiovascular Disease, Health Care Applications) is another example of international collaboration. There is a clear need to establish closer contact with these many initiatives and to find a coordinating mechanism allowing to capitalize on activities that could bring added value to the action and partnerships on chronic disease.
92. An innovative mechanism is needed to coordinate efforts in coping with chronic diseases within the United Nations system, including WHO, and with the major international agencies, professional associations, research institutions, WHO collaborating centres and the private sector. Concerted action against these diseases requires all partners to play a stronger role in the regional and global network that targets such areas as advocacy, resource mobilization, capacity building and collaborative research. Developing such a network will be a part of the regional strategy.
93. The Regional Office has the unique authority and a clear mandate to lead the development and implementation of the regional NCD strategy and thereby improve the health environment for the people of the Region.
94. It is obviously necessary to set up strong links to, and capitalize on, the WHO global strategy for the prevention and control of noncommunicable diseases. The CINDI Programme representing the European Region at the WHO Global Forum on NCD prevention and control is well suited to contribute to the advancement of chronic disease prevention and control globally.

## CINDI recommendation for the development of the European strategy for chronic disease

95. In summary, based on a review of the internationally accumulated knowledge and experience in health promotion and chronic disease prevention, as well on the CINDI practice and experience, CINDI Programme collaborators put forward a proposal for the development and implementation of a Region-wide strategy for chronic disease prevention in Europe.



96. The strategic framework presented in Figure 1, aimed at the reduction of NCD, targets **four** major chronic diseases: cardiovascular disease, cancer, chronic obstructive pulmonary disease and diabetes. It focuses on **four** lifestyle-related factors: tobacco, diet, physical activity, and alcohol. In turn, this should lead to the improvement of individual risk profile by affecting **four** biological risk factors: overweight, hypertension, abnormalities in lipid and in carbohydrate metabolism. To achieve this, **four** integrated approaches are to be applied: individual risk reduction (aimed at high-risk individuals), population risk reduction (aimed at social determinants), rational use of health services (by empowering primary health care), and referral system support. These efforts should be guided by **four** major strategies: policy development, capacity building, surveillance, and dissemination. All the above should be related to the improved functioning of socioeconomic environment by focusing on **four** major social determinants of NCD: poverty, education, employment, and balancing social inequalities.
97. The strategy should be developed and implemented through partnerships on several levels. The international level would involve WHO, Member States, European Union, professional health associations and nongovernmental organizations. The national level would involve governments, all societal sectors affecting health, academic and health care communities, and nongovernmental organizations. The local level would involve communities and their settings, institutions, interest groups. However, in the European situation, the WHO Regional Office for Europe has a unique authority and clear mandate to lead the development and implementation of the European chronic disease strategy and thereby to help create a better health environment throughout the Region.



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## Annex 1

### **Members of the CINDI Programme network**

Austria, Belarus, Bulgaria, Canada, Croatia, Cyprus, the Czech Republic, Estonia, Finland, Germany, Hungary, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Malta, Poland, Portugal, the Republic of Moldova, Romania, the Russian Federation, Slovakia, Slovenia, Spain, Turkmenistan, Ukraine and the United Kingdom.

### **Countries in the process of joining the CINDI Programme network**

Azerbaijan, Bosnia and Herzegovina, Georgia, Serbia and Montenegro, and The former Yugoslav Republic of Macedonia.

## Annex 2

### CINDI objectives and policy framework

#### Objectives

CINDI's overall objective is to improve the health of populations by reducing mortality and morbidity from major NCD through an integrated, collaborative intervention programme of disease prevention and health promotion. The main objective is to simultaneously reduce the common risk factors of major NCD, such as smoking, unhealthy nutrition, alcohol abuse, physical inactivity and psychosocial stress. CINDI's main objective relates to common risk factors and related lifestyle changes in the population, thus emphasising primary prevention and health promotion. In addition to the previously mentioned risk factors, national CINDI programmes should consider other factors that are relevant in local conditions, such as oral health or drug abuse. In addition to primary prevention, the national programmes may include objectives related to secondary prevention: the early detection and treatment of, and rehabilitation after, certain major NCD.

To achieve these objectives, effective collaborative mechanisms and methodologies for integrated, intersectoral NCD prevention and control should be established in CINDI member countries. All objectives must be specified in operational terms, and achievable goals should be set within the programmes, particularly to permit evaluation.

The programme has six main practical objectives:

1. To achieve a coordinated approach to the prevention or reduction of NCD. This requires the establishment of a suitable organizational structure for implementing the programme, and the drawing up of national guidelines for its further development.
2. To determine the relative importance of common risk factors and their influence on NCD in the national setting as a basis for the inclusion of preventive programmes among the different sectors of the national health system and hence the identification of possible means of intervention.
3. To develop a comprehensive approach to public education, a health service structure and other strategies for the prevention and control of NCD. The major target groups, intervention channels and strategies should be identified, and guidelines for reaching them set.
4. To develop information support for the implementation and monitoring of the programme. This requires the development and use of appropriate indicators of outcome and process in relation to the various risk factors, and the identification of types of NCD.
5. To evaluate the results of the programme. This requires the measurement and follow-up of appropriate indicators in the CINDI population in order to assess the process and effectiveness of the programme and to give feedback for its further strengthening.
6. To promote research in the prevention and control of NCD, and to establish methods, facilities and activities for this purpose.

#### Main programme features

Member countries should plan and carry out national CINDI programmes that employ the objectives and strategies outlined above, in cooperation with the international CINDI Programme at the WHO Regional Office for Europe. The aim in each CINDI country should be to carry out a nationwide programme that integrates and coordinates various strategies and activities.

Most countries use a demonstration area for testing and training in support of the national programme. In general, the demonstration and national activities should be developed at the same time, and experiences from the former should be used to strengthen the nationwide programme. The national programmes can be developed in stages.

The framework for implementation of the programme should be intersectoral with the inclusion of all relevant organizations and administrative structures. Central coordination is the task of the ministry responsible for health. It is of vital importance that there is an executive programme team, responsible for realising the policies, objectives and targets of the programme. This team can be located within the health ministry, a national institute or university, or some other well chosen site.

The national executive programme team prepares a detailed protocol and plan of action for implementing the programme at the national level, in close consultation with the international CINDI Management Committee and the Regional Office. This is done at the start of the programme, and the plan is updated periodically.

In general, the following stages and parts of the development of the programme should be considered:

- a situation analysis;
- the establishment of national programme management;
- the finalization of the national protocol and plan of action;
- the development of guidelines and methods of intervention vis-à-vis the common risk factors;
- a baseline survey;
- the start of intervention;
- meetings of the national programme team and the participation of the Programme Director in international CINDI meetings;
- joint major evaluations at five-year intervals;
- the further development of the national CINDI Programme.

The Regional Office and the international CINDI Management Committee will maintain their active support to the countries by arranging meetings, visits to the countries, consultations and other relevant technical assistance.

### Central policy issues

The central policy challenges may be described as follows:

- achieving an integrated approach;
- adopting an intersectoral way of working;
- bridging the gaps between science and policy: establishing demonstration programmes;
- enhancing international collaboration.

#### - *Integrated approach*

The concept of integration is central to CINDI. It implies recognition that a number of risk factors (mainly related to lifestyle) are common to major NCD. CINDI promotes joint action against these risk factors as an efficient way to reduce the incidence of the diseases.

In practical terms, integration means building on existing health infrastructures and resources, and covering the full continuum of health promotion, disease prevention and health care. CINDI has an important role to play in identifying gaps in local and national preventive activities and in providing a focal point for the coordination of these activities. Integration also means putting in place multiple health intervention modules to address the major risk factors in all relevant groups of the population. These modules need to cover a range of strategies

and to have the support of relevant organisations. The managers of the national CINDI programmes should seek to facilitate the linkage of different modules by establishing mechanisms for planning and coordination. The activities undertaken in CINDI demonstration areas or in community settings need to be harmonised with national policies and programmes.

Integration offers advantages: increased consistency among health policies, public education messages that are coherent and mutually reinforcing, and the diffusion of results to other communities, thereby raising the profile of CINDI across the country.

- *Intersectoral action*

The prevention of NCD calls for collaboration between the various parts of the health sector and also between the health and other sectors of society. CINDI should take a lead in creating coalitions, or support the efforts of health departments that may have overall responsibility for coordination at the national level. Depending on the issue at hand, a comprehensive intersectoral prevention effort might include agriculture, education, finance, transport, environment, labour, housing and consumer affairs, as well as the mass media, trade unions and nongovernmental groups such as the Red Cross, religious institutions and sports organizations. The area of nutrition provides an example. Comprehensive policies that include public and professional education, development of skills and access to healthy diets cannot be achieved without collaboration between government, voluntary agencies, the agriculture sector and the food industry.

By forming alliances with professional associations and voluntary organizations, such as those concerned with cancer, heart disease and diabetes, the national CINDI programmes can widen their networks, expand their resource base and benefit from partnership at the community, national and international levels.

- *Bridging the science-policy gap*

Demonstration programmes form the backbone of most CINDI programmes. They serve to test intervention approaches on a limited scale, as well as to raise public awareness of the need for and benefits of NCD prevention. Instead of trying to convince decision-makers and the media with theoretical arguments, the national CINDI programmes can refer them to tangible results.

Demonstration programmes can provide a powerful tool for the development of national policy. They not only generate new intervention knowledge but also provide opportunities to build skills and to create models that can be used by other communities across the country.

Typically, CINDI demonstration programmes should have the following components:

- the application of existing prevention knowledge at both the individual and community levels;
- information systems to support the planning, monitoring and evaluation of interventions;
- process and outcome evaluation to assess the value of interventions and to compare them with approaches used in other CINDI countries;
- organizational structures, such as coalitions and coordinating committees, to support concerted preventive activities at the national, regional and community levels;
- linkage to relevant national health policies, such as legislation on smoking or practice guidelines for preventive medicine.

A CINDI demonstration programme may involve a community, a region or an entire country. Managerial structures may vary from programme to programme.

Demonstration programmes need to be professionally planned, implemented and evaluated. In order to be successful, demonstration programmes should have the support of national authorities, and should be operationally linked to national programmes and policies. In

practical terms, this means devoting staff time and other resources to the task of keeping national authorities abreast of activities and results; there is no question of waiting until the demonstration is over to disseminate the CINDI experience.

In the demonstration programmes, policy research on the cost-effectiveness of preventive strategies can help significantly in gaining support from health care authorities. Results from CINDI demonstration programmes can play a major role in helping to bring about the consensus that forms the basis for prevention policy. Judging when there is enough scientific knowledge to support policy-making is a responsibility that lies jointly with scientists and practitioners. In NCD prevention, the available scientific evidence (even though incomplete) has often been assessed as sufficiently sound to justify public health action.

#### - *International collaboration*

One of CINDI's strengths is that its programmes draw on knowledge gained from national and international epidemiological and preventive studies. CINDI provides a mechanism whereby member countries can share their experience in developing their national programmes.

International collaboration is particularly valuable in programme planning, protocol development and the dissemination of programme results. The WHO CINDI Programme can provide access to research literature, resource materials, improved communication with other programmes of the Regional Office for Europe, and workshops and events at which participants can exchange information on issues of concern.

CINDI profits from closer working relationships with a number of international professional societies. Potential partners include the World Hypertension League, the International Diabetes Association, the World Organization of Family Physicians, the International Union for Cancer Control, the International Heart Health Network, the European Atherosclerosis Society and the American Heart Association's Council on Cardiovascular Disease Epidemiology.

As a group, CINDI member countries reflect not only a mixture of cultures, experiences and ideas but also a wide range of political and social systems and approaches to health. CINDI provides its members with a common conceptual framework and an organizational context for joint activities.

## Key intervention issues

### General principles

CINDI intervention programmes should be based on the previously mentioned objectives. They should be comprehensive and combine several strategies.

CINDI Programme strategies should integrate activities relating to different parts of the health sector (health promotion, disease prevention, treatment and rehabilitation) and some of those undertaken by other sectors. They should be focused on:

- health services
- public education
- community organisation
- regulation.

#### - *Health services*

Because primary health care embraces both primary and secondary prevention, the tasks of the programme should be integrated with those of the health services, which may have to be reorganized.

- *Public education*

The aim should be to train people so that they will be in a position to make the necessary behavioural changes, to persuade and help them to effect such changes and to provide the required social and environmental support. The general educational activities would involve the use of the mass media, the preparation of educational materials, the convening of meetings etc. Teaching in schools should also be involved.

- *Community organisation*

The aim should be to mobilise community resources to the greatest possible extent to support the attainment of the programme's aims. This would include both formal decision-making and informal approaches, and would involve other public services, voluntary organisations, occupational activities, churches etc. The involvement of key lay people should also be considered.

- *Regulation*

Finally, public policy mechanisms for action in other sectors should serve the programme's overall aims by modifying the environment, changing production patterns, influencing prices etc. This may be done through legislation, government or local decisions, or voluntary decisions by industry. The programme may also try to stimulate demand by the population for such action.

### Challenges related to risk factors

In most Member States of the WHO European Region, more than two out of three adults have one or more of the major risk factors for CVD. The situation is all the more serious as people with more than one risk factor, even at moderate elevation, are at significantly increased risk.

- *Lifestyle factors*

Smoking not only plays a role in the development of cancer but is the main contributing factor in about a third of all cases of CVD. The eradication of smoking is now recognised as the single most effective means of improving the health of the population in industrialised and many developing countries.

Appropriate dietary habits and the maintenance of energy balance (healthy weight) are fundamental to the prevention and control of such risk factors for CVD as hypertension, diabetes, hypercholesterolaemia and obesity. In addition, some evidence indicates that increasing the consumption of vegetables and fibre and reducing fat intake may help to prevent some major types of cancer.

The issues in nutrition are wide-ranging and best addressed using an intersectoral approach. For example, consumers need to have healthy food available at affordable prices, as well as proper nutritional information when they buy their food. Member countries should be aware of the profound effect that widespread dietary change could have on agriculture and the food industry. The feasibility of nutrition policies depends on the degree to which the social and economic realities in countries are taken into account. The most effective nutrition policies would be those developed jointly by all partners who have a stake in the issue in both the public and private sectors.

Obesity is linked to a wide range of morbidity. Abdominal obesity, in particular, is associated with several of the major risk factors for heart disease: high blood pressure, abnormal blood lipids and triglycerides, and non-insulin-dependent diabetes mellitus. A number of practical approaches can be taken to prevent obesity. They include: raising public awareness of the primary role of physical inactivity as a determinant; providing information to the public that encourages individuals to become acquainted with their own healthy body weight; and developing appropriate dietary and exercise programmes for the workplace.

Physical activity and personal fitness contribute to the proper maintenance of energy balance, and to health and wellbeing in general. Lifestyle programmes offering a combination of exercise and diet would be most appropriate for the primary prevention of nutrition-related disorders such as obesity, high blood pressure and hypercholesterolaemia.



Alcoholism and drug dependency are major public health problems. The burden of acute and chronic disease resulting from alcohol use is well documented. In some member countries, the death rates for cirrhosis of the liver have increased markedly in the past two decades. Firm scientific evidence has shown the link between alcohol consumption and the development of high blood pressure, even at rates not widely considered to be excessive (under two drinks per day). The promotion of social norms supportive of moderation of alcohol intake is a challenge for all national CINDI programmes. Other possible avenues through which CINDI programmes can help address this major societal issue include health education for professionals and advocacy for greater intersectoral coordination among agencies responsible for alcohol policies.

#### *- Biological factors*

High blood pressure is a major public health problem. It is increasingly recognised that hypertension control should form part of an overall effort to control the risk of CVD, i.e. one that addresses other risk factors that might be present, such as smoking, abnormal blood lipids and obesity. Individuals at high risk in respect of high blood pressure and high level of lipids can be identified and managed through case-finding in primary care and occupational health care settings. Improved patient education, coupled with nonpharmacological management as the sole or adjuvant therapy, can enhance the control of risk factors and produce savings for the health care sector. Moreover, nutritional interventions for primary prevention at the community level are very important to reducing the levels of blood pressure and blood lipids.

Diabetes is a potent risk factor for CVD and other disabling diseases. Primary and secondary prevention strategies could be further developed in the context of the St Vincent Declaration on Diabetes Care and Research. This provides national CINDI programmes with a useful model for control activities directed at other chronic diseases, particularly from the perspective of the quality of care.

#### *- Psychosocial factors*

Psychosocial factors (such as job strain, and feelings of anger and hostility) are increasingly recognised as playing a role in the development of CVD. In CINDI, action on psychosocial factors might be taken within the context of occupational health programmes, or through measures aimed at reducing stress related to work or unemployment, and unhealthy physical environments. Furthermore, poverty and social disadvantage are associated with higher levels of NCD. This has particular significance for CINDI, given the political and social changes and the attendant economic hardships in the countries of central and eastern Europe and the newly independent states.

#### *- Accident-related factors*

Accident prevention is a CINDI concern, since accidents are a major cause of death and injury, and preventive measures relate to bringing about behavioural change, ie in relation to alcohol consumption. The agenda is broad. The WHO targets for Health for All focus attention on the prevention of injury, disability and death in the following areas: the responsible handling of motor vehicles, road safety, personal safety habits (such as avoidance of drunk-driving, and the use of safety belts and reflectors), and the prevention of accidents in the home, at work, and during sports and leisure. CINDI programmes might give increased attention in the future to this major public health problem, which affects all population groups.

#### *- Breast and cervical cancer screening*

CINDI member countries can collaborate on the development of databases to facilitate the planning and evaluation of cancer screening.

#### *- Dental health*

Preventive dental health activities often relate to other CINDI objectives, such as diet. In addition, dental workers can contribute to other CINDI activities, such as those for nonsmoking.

#### - *Environmental hazards*

Environmental health is an emerging area of concern for the CINDI Programme. In some countries, public awareness about radiation and the chemical contamination of food, air pollution and water pollution is rising, thus adding to the urgency of tackling these problems. There are opportunities for collaboration on the development of epidemiological databases on relevant environmental hazards and on the establishment of projects to track the long-term effects of interventions.

#### **Key intervention strategies**

CINDI emphasizes the integrated approach to risk reduction by aiming preventive programmes at the population as a whole, as well as at groups at particular risk. In addition to those for the general adult population, national CINDI programmes could have special activities for children and youth, the elderly and disadvantaged groups.

Intervention settings for action range from national to community level (demonstration area) and include schools, work places and health centres and the facilities of voluntary organisations. Usually the intervention combines several settings.

The priorities of the strategies for intervention and international collaboration in most CINDI member countries are:

- policy development, legislation and coordination;
- marketing and organisational development;
- public education and the mass media;
- guidelines for practice;
- professional education and involvement.

#### **Policy development, legislation and coordination**

In the context of CINDI, policy means consensus among relevant partners on issues to be addressed and on the approaches or strategies to use in doing so. The CINDI Programme could stimulate action on policy at the national level and, through exchange of experience, facilitate the attempts of member countries to implement preventive policies.

Primary health care has a crucial role to play in the implementation of policies for NCD prevention and control. CINDI has the potential to influence primary health care systems to adopt a more preventive orientation.

Intersectoral coordination in policy development, dealing with such issues as smoking, nutrition, fitness and accident prevention, should involve a wide range of interest groups and sectors. For example, helping consumers to choose healthy nutrition involves health education, the production and supply of food, marketing issues, pricing policy and consumer demand.

#### **Marketing and organisational development**

Political and collaborative support is essential for a long-term preventive programme. Finding ways to gain such support at the national and local levels is one of the principal challenges. In marketing:

- NCD prevention can achieve major health gains;
- primary prevention will save resources;
- modest additional funding can secure considerable progress.

The people involved in a CINDI Programme need to make scientists and health practitioners aware of their role in educating decision-makers in the public and private sectors at the international, national and local levels about their opportunities to improve the population's health and quality of life.

### Public education and the mass media

The public needs to know what action can be taken to prevent NCD. Lifestyle change, advocacy, community empowerment and the creation of healthy environments require that the public and key decision-makers are well informed about the potential value of prevention.

A better understanding is needed of how different target groups perceive health issues and of the best ways to reach various audiences, since not all respond to a health message in the same way. In areas such as smoking and nutrition, better results are likely where messages are designed for and delivered to clearly defined target groups. It is also important not only to communicate health information but also to teach practical skills for change, to provide social support, to promote environmental changes and to introduce disease prevention and health promotion on the general agenda.

The implementation and evaluation of health education initiatives include working with the mass media, as well as with schools and workplaces. The CINDI Programme could use joint workshops to share experience in social marketing, in conducting needs assessment, in mobilising communities and in training community workers to support public education initiatives.

### Guidelines for practice

An important part of CINDI intervention is to integrate and strengthen preventive practices in various health care settings. The development of national practice guidelines contributes to this. Guidelines should also be used for professional education and can facilitate the more efficient use of health care resources.

The CINDI Programme should help to facilitate the development and implementation of guidelines on NCD prevention. This would mean setting priorities for guideline development, agreeing on a process to review the scientific evidence and devising a joint strategy to have physicians and other health professionals incorporate the guidelines into their practice. CINDI demonstration programmes can test and develop such guidelines for national use.

### Professional education and involvement

Physicians and, in some countries, nurses are well placed to prevent disease and to promote and foster change in behaviour and lifestyle. Educational programmes for physicians, nurses and other health personnel should emphasize on them the influence they have as role models for behavioural change in patients.

Health professionals need training in communication and counselling, group dynamics, motivating towards making positive lifestyle changes, and teamwork. The adoption of integrated approaches implies that training ought to focus more on the community and that more emphasis should be put on multidisciplinary teamwork.

There are three main channels for enhancing the preventive practice of health professionals:

- undergraduate training
- postgraduate training
- continuing education.

CINDI member countries have great potential for cooperation on professional education. They could work together to develop resources and materials and organize workshops to "train the trainers" in prevention.

### Evaluation and monitoring

The main aim of the CINDI evaluation is to assess changes in the main objectives and to achieve a good understanding of programme performance. The aim is not a scientific inference concerning a cause-effect relationship.

Evaluation within CINDI should be concerned with both the process and the outcome of programmes. Process evaluation refers to information on how the activities are implemented and the target populations reached. It calls for a clear definition of the programme's methods and

strategies, and indicators of their implementation. It also calls for reference to behavioural objectives and their indicators. Process evaluation uses information on programme implementation (such as logs and inquiries) and from population surveys.

Outcome evaluation refers to information on changes in lifestyles and risk factors and should monitor information on changes in NCD. The rates of major NCD are monitored to obtain important background information for the programme and to give feedback on the national trends. For outcome evaluation, indicators of progress towards the objectives should be clearly defined and carefully measured. Information comes from statistics (such as those on mortality, hospital discharge and diseases) and from carefully standardised surveys of the behaviour and risk factors of random population samples.

- *Evaluation and monitoring within a country*

The overall evaluation of the programme within a country should include:

- an assessment of the feasibility and performance of the programme, i.e. determine how and to which extent the planned activities have actually been implemented. This is of vital importance for any assessment of the possible success or failure of the programme. Indicators should be defined for this purpose.
- an assessment of the extent to which the programme has reached its objectives, formulated in measurable terms with relevant indicators. Through continuous and periodic collection of data from the target population, changes in the indicators can be assessed. The indicators should relate both to the risk factors (biological, environmental and behavioural) and to the diseases.

Each national CINDI programme should arrange for monitoring and evaluation based on the local situation and the opportunities available. An assessment of the results will give feedback for use in planning continuing development. While the evaluation mainly focuses on the countrywide programme, a more comprehensive evaluation can be arranged for a demonstration project. CINDI demonstration area activities are monitored and evaluated to compare indicators and trends in the demonstration areas with those in the whole country. The indicators for the development of CINDI on these two levels can differ and can sometimes be specific only to one level, such as legislation for the national level.

- *International evaluation and monitoring*

A central aim in CINDI evaluation is to compare trends in different member countries and demonstration areas, with different background situations and intervention experiences. To ensure comparability between programme areas, which permits comparisons of trends, the methods for assessment must be based upon carefully standardised criteria. The CINDI Protocol and Guidelines (Chapter 4) specifies the core indicators and the methods to be used for measuring them for international collaboration. Each member country should use the CINDI evaluation measures specified therein and thus contribute to the international evaluation. The member countries agree to supply this information to the international CINDI Data Management Centre. The international comparison of CINDI data should show the value of different intervention measures in different cultures. The information yielded by an evaluation should be used to make continuous improvements in the programme.

- *Methods for collection of information*

The CINDI Programme is based on relevant scientific methods for process and outcome evaluation and uses appropriate existing data sources and special CINDI data collections to carry out these functions.

Two basic sources of information should be utilised:

- collection of the information for the database from official and other published statistics;
- random population surveys to monitor levels of risk factors and health-related behaviour; the programme concentrates on basic items which can be standardised.

### Indicators and data sources

The indicators to be monitored refer to both process and outcome evaluation and are grouped as:

- essential, or mandatory for participation in the programme;
- recommended, or of considerable importance to the programme (countries unable to provide information on these indicators should have special reasons).

The essential indicators comprise the minimum database for the international CINDI data analyses.

Accurate measurements and standardization procedures are needed for the essential indicators. The quality of the recommended indicators should be of the same high level as the essential indicators, and standardized procedures should be used. The information on the indicators should be collected from official and other published statistics and special population surveys.

## The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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