

Advancing public health:

10 years of transition in central and eastern Europe and the newly independent states of the former Soviet Union

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Ten Years of Health Systems Transition in Central and Eastern Europe and Eurasia

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This draft paper is part of a series commissioned by USAID to provide a conceptual framework and overview of the main thematic topics of the USAID conference "Ten Years of Health Systems Transition in Central and Eastern Europe and Eurasia." Following the conference, each team of authors will revise the papers, compiling the final versions in a book by the European Observatory on Health Care Systems, which will be made available to conference participants in early 2003.

Executive summary

The health of populations in central and eastern Europe (CEE) and the newly independent states of the former Soviet Union (NIS) is substantially worse than in western European countries. Most of the east-west health divide is due to chronic disease in middle-aged and older people, but many countries in the region face new and serious threats to public health such as increasing rates of HIV infection and intravenous drug use. The causes of poor health in CEE/NIS are complex, but they appear to be strongly related to underlying social conditions such as economic instability, unemployment, migration, organized crime, alcoholism and increased availability and use of illicit drugs.

In this paper we discuss how organized public health services, and governments in general, can respond to these challenges. While public health services alone are unlikely to substantially improve population health, they can make an important contribution, not least by advocating a broad approach to health and its determinants.

We present a conceptual framework that recognizes the complex nature of health determinants, the crucial role of the social environment and the core functions of organized public health. We briefly describe the changes in public health systems, from the Soviet system of sanitary-epidemiological stations before 1990 to a less centralized service oriented more towards health promotion. We list some of the factors obstructing advances in public health, such as the overall macro-economic and social conditions, general attitudes to public health, inadequate training and the lack of a multisectoral approach. Finally, we offer several principles for developing future policy options. These include: preserving the positive aspects of the public health service (e.g. communicable disease control); attacking the major threats for each country; protecting the public health budget; reforming the service; training public health professionals; and adopting multidisciplinary and multisectoral approaches.

1. Introduction

The health of populations in central and eastern Europe (CEE) and the newly independent states of the former Soviet Union (NIS) at the beginning of the 21st century is substantially worse than in western Europe or North America. The high rates of mortality, morbidity and disability are important for a number of reasons: they constitute a humanitarian tragedy, impose a burden on the health and social sectors, and impede prospects for economic prosperity and overall development.

This paper examines the following issues: (a) the major determinants of the poor health in CEE/NIS; (b) the role and realistic potential of public health services in improving health, and how steps taken during societal transformation affect this potential; (c) the key factors enabling and obstructing advances in public health in CEE/NIS; and (d) the policy options available to improve the effectiveness of public health services in the countries in transition.

We present two well known conceptual models of the determinants of health. These models also illustrate different levels of possible intervention. We believe that social and economic factors are the primary causes of ill health, and that the policy response to improve health needs to be interdisciplinary and multisectoral. We also argue that public health services and medical care alone are unlikely to improve population health, but that they can nevertheless make an important contribution to the process.

2. Conceptual framework

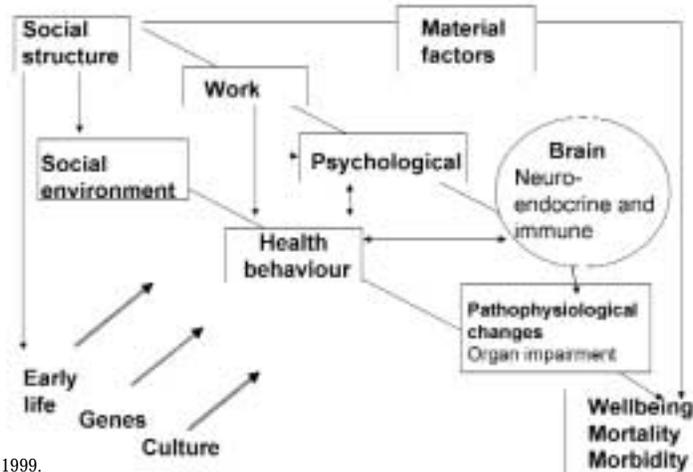
Efforts to improve population health must address the important determinants of health. Proximal factors, such as obesity, tobacco and alcohol, are important but the adoption of unhealthy lifestyles does not depend solely on an individual's choice (Cockerham 1997). There is abundant evidence that population health is related to features of society, and to social and economic conditions (Marmot & Wilkinson 1999). Our conceptual framework recognises the complex nature of determinants of health and the core functions of organized public health, and it identifies the role of the public health system in the process of improving the health of the population.

2.1. *Determinants of health*

Fig. 1 shows the main determinants of health as concentric circles, with layers one over another (Dahlgren & Whitehead 1991). At the centre is the individual, with his or her personal characteristics such as age, sex, genetic makeup, etc; these factors are important but cannot be changed. The individual's health is influenced by his or her lifestyle and health behaviour (the second layer). However, individual lifestyles are influenced by social norms and community networks (the third layer). These, in turn, are influenced by living and working conditions, education, health care, etc (the fourth layer). All these layers of factors are affected by the overall macroeconomic and environmental conditions of society (the outer layer). Fig. 1 illustrates the limitations of the usual reductionist approach to public

Fig 1

health, such as focusing on smoking in isolation from other factors. (such as screening for high blood cholesterol and reducing it by dietary or pharmacological means).

Fig 2. Conceptual model of determinants of health

Source: Marmot & Wilkinson 1999.

Both models show that, while such downstream interventions are important, their effect will be limited as long as they ignore the underlying determinants of health — i.e. the upstream factors related to the social and economic environment and living conditions. One can ask, for example, why smoking is so common and fruit and vegetable consumption so low in CEE/NIS. A plausible explanation is that for people with a low sense of control, no hope for the future and low social and financial resources, it makes little sense to worry about the health hazards of tobacco or to spend money on expensive and unnecessary foods.

The close relation of changes in health status to changes in social conditions in CEE/NIS during the transitional period (Marmot & Bobak 2000) further emphasizes the need to focus on the broader determinants of health. In fact, the improvement in mortality in the Czech Republic and Poland after 1990 has been attributed to improved diet rather than improved health services (Bobak et al. 1997; Zatonski et al. 1998). The improved nutrition, in turn, has been largely due to the greater availability and lower prices of unsaturated fats

and fruits and vegetables; these factors are beyond the realm of the health services.

Public health services can and should play an important role in developing policies to improve health. However, as mentioned above, it is unlikely that a substantial improvement in health can be achieved by the health sector alone. Public health services should set up and conduct downstream interventions (e.g. changing health behaviour) but public health professionals also need to propose and advocate upstream policies. A wide range of such upstream policy options is given in the independent inquiry into inequalities in health in the United Kingdom (Acheson 1998).

2.2. Public health

Public health is a broad term with no universal international definition and structure. A useful definition is that it is a process of promoting health, preventing disease, prolonging life and improving the quality of life through the organized efforts of society (Vetter & Matthews 1999). In some countries, public health includes functions of the state other than health care and public health services (education, housing, transport, etc); in others it denotes all health service provision and management; and in others public health is understood in its narrow sense as the sum of functions provided by the public health services. It is clear from the previous section that we advocate the broadest meaning.

Nevertheless, most specialists agree that the core functions of public health practice include: (a) monitoring population health and its determinants; (b) prevention and control of disease, injury and disability; (c) health promotion; and (d) protection of the environment (Bettcher et al. 1998). We believe that these functions cannot be fulfilled successfully by public health services or even the health sector alone.

3. Comparative overview

3.1. Health status in CEE/NIS

Health in CEE/NIS is substantially worse than in western European countries. At the end of the 1990s, the difference between the European countries with the highest and lowest life expectancies at birth was more than 10 years in both men and women; virtually all countries with low life expectancy are in CEE/NIS (WHO). Even at age 45, there is an 8-year difference in male life expectancy between the best and the worst European countries.

This difference in health (the much debated east-west gap) has long-term and short-term components (Bobak & Marmot 1996). After the Second World War, life expectancy improved rapidly in both eastern and western Europe, but the two started to diverge in the 1960s. Western European countries enjoyed a further increase in life expectancy between 1970 and 2000 (by 6 years on average). However, improvements in CEE/NIS until the

early 1990s were at best negligible, and in Bulgaria, Hungary and Poland male life expectancy at age 15 actually declined (reflecting the increase in mortality among adults).

The situation deteriorated further in most of CEE after the collapse of communism in 1989. The mortality trends followed those seen in socioeconomic indicators. After a universal deterioration in health in the early years, mortality improved in most CEE countries, where the transition was relatively successful, but it remained high or continued to rise in most NIS, where the negative social impacts of the transition were much worse (Cornia 1997; United Nations Children's Fund 2001).

3.2. Determinants of poor health in CEE/NIS

The diseases responsible for the gap in life expectancy may guide us as to the measures that may help to reverse the unfavourable trends. Of the 6.1-year gap in life expectancy at birth between CEE/NIS and the rest of Europe in the early 1990s, only 15% developed in infancy; 43% originated in the 35-64-year age group and 23% in those 65 and older. Cardiovascular diseases accounted for 54%, followed by external causes (23%) and respiratory diseases (16%) (Bobak & Marmot 1996). Interestingly, cancer is no more common in CEE/NIS than in western Europe. Separate analyses of German, Hungarian and Russian data confirm these aggregate findings (Chenet et al. 1996; Jozan 1995; Kingkade & Boyle Torrey 1992). The contribution of external causes (injury and violence) is higher in the former Soviet Union, particularly since the late 1980s (Bobak & Marmot 1996; European Centre on Health of Societies in Transition 1998).

A number of studies addressed the question of the causes of poor health in CEE/NIS. The evidence suggests that medical care contributed only modestly to the long-term east-west divide that has opened up since the 1960s (Bobak & Marmot 1996; Boys et al. 1991; Velkova et al. 1997); most of the east-west difference is due to high disease incidence rather than substantially higher case fatality in CEE/NIS than in the west (Bobak & Marmot 1996). A possible exception is infant mortality, which decreased more rapidly in countries or areas with better neonatal care technology (Koupilova et al 1998; Nolte et al. 2000).

The lack of efforts to control common risk factors for chronic disease (blood pressure, smoking, cholesterol) probably made a substantial contribution to the gap, mostly through the mortality rise since the 1960s. Smoking rates are high among men and are rising in young women (Bobak et al. 2000). The prevalence of obesity is high in most countries of the region (Principal Investigators 1989). Nutrition is often poor, with high intakes of saturated fats and low intakes of fresh fruit and vegetables, and leisure-time physical activity is typically low.

On the other hand, environmental pollution, commonly blamed for high mortality in the region, probably did not play a major role (Bobak & Feachem 1995; Bobak & Marmot 1996; Hertzman 1995).

The causes of the dramatic fluctuations in mortality in the 1990s are not fully understood but there is a general consensus that changes in health are related to changes in social and economic conditions. Social and economic circumstances deteriorated in all countries in the early stages of transition. Unemployment rose and income inequalities increased in all countries, and in some NIS they reached levels seen in Latin America (World Bank 1996). Social inequalities in health also increased (Bobak & Powles 2001; Koupilova et al. 1998; Koupilova et al. 2000; Shkolnikov et al. 1998). The negative economic changes had a large impact on people's behaviour and health. Indirect evidence suggests that high consumption of alcohol and binge drinking contributed to the changes in mortality, particularly through alcohol poisoning, injuries and violent deaths, and possibly cardiovascular diseases (McKee 1999; McKee et al. 2001).

Apart from cardiovascular diseases, injuries and alcohol, there are other threats. There has been a sharp increase in a number of communicable diseases in some parts of the region since 1989, such as diphtheria, viral parenteral hepatitis, tuberculosis and HIV infection (Netesov & Conrad 2001). The latter is closely related to the sharp increase in intravenous drug use. In the Russian Federation and some other countries, illicit drug use has reached epidemic proportions (Blinova et al. 2000; Veekens 1998). While the absolute levels of these diseases are not high, the steep increase observed over the last few years is alarming. If the current trends continue, hepatitis and HIV and other infections will become a major cause of morbidity and mortality.

Some of the problems in the 1990s were due to the disintegration of public health services and a lack of funds for drugs and immunization. Nevertheless, the general worsening of health status reflects deeper social problems such as economic instability, unemployment, migration, organized crime, alcoholism and increased availability and use of illicit drugs. All this indicates that the roots of the health crisis in CEE/NIS lie in the social environment. Psychosocial resources, such as perceived mastery, optimism, sense of control or social networks are, on average, low (Bobak et al. 2000; Cornia 1997; Marmot & Bobak 2001). The worsening in the 1990s can also be attributed to psychosocial stress resulting from acute, transition-related dislocation in the labour market, income inequalities and family disruption, and by a grossly inadequate public policy response to these social emergencies (Cornia & Pannicia 2000). The major task for organized public health, and for governments in general, is to respond to these challenges.

3.3. Public health services in CEE/NIS before 1990

Before 1990, public health services in CEE/NIS were organized according to the Soviet model. Responsibility for public health and prevention lay with a highly centralized system of sanitary-epidemiological (sanepid) services. The system was hierarchical, with sanitary-epidemiological institutes at lower administrative levels (e.g. districts) subordinate to higher-level (regional or national) institutes. At the same time, the sanitary-epidemiological institutes were also part of the regional (district) health services structure. The sanepid services combined monitoring, inspection, preventive and (sometimes) research functions.

A typical institute serving a larger region had departments dealing with environmental health, general health, occupational health, nutrition and food hygiene, child and adolescent health and communicable disease control (epidemiology and microbiology).

Perhaps the most tangible achievement of the sanepid system has been its contribution to vaccination programmes and communicable disease control, achieving remarkable success in most parts of CEE/NIS. On the other hand, it was relatively ineffective in combating environmental pollution, occupational diseases and noncommunicable diseases. The failings of the old system were partly related to the lack of real power (for example, the sanepid services monitored air pollution but often had no direct regulatory power), but also to the political regime (opposing party decisions required personal courage).

The sanepid services reported on infections, immunizations, serological surveys, occupational disease and some other outcomes. Information on curative services or noncommunicable conditions was often collected within the health sector (e.g. cancer registers) but these data were not often used. There were large differences between countries but it became apparent after 1990 that, in general, the information base for public health was inadequate and often of poor quality. In addition, much of the data on health status (e.g. mortality and birth outcomes) came from state vital statistics or other sources (for example, the WHO MONICA Project was the main source of information on the incidence and treatment of cardiovascular diseases and the prevalence of risk factors in many countries in CEE/NIS).

3.4. Public health services in CEE/NIS after 1990

After 1990, public health services, as with most other public institutions, underwent reform in most countries. To our knowledge, there has been no formal assessment of the public health reforms in CEE/NIS. The following is based on informal observations in a sample of countries. The reforms were different in each country, but there were several common themes.

Decentralization

In some but not all countries, the public health systems were partly decentralized. In most countries, the subordination to higher administrative levels became weaker and the link with local government became stronger. In virtually all countries the central public health institutions remained under the control of the Ministry of Health, but in some countries local public health services were incorporated into local government, or local governments were given more say about public health in their areas. This has had some positive consequences. The public health institutes respond better to local problems, for example by conducting surveys for local government or by providing specific services (e.g. HIV/AIDS counselling). In some countries, the public health institutes also have freedom to raise extra funding for additional activities.

Changes in funding, legislation and responsibility

In many countries, mostly in the NIS, the national economic crises reduced public sector funding. The impact on public health services was usually larger than that on curative services. As a consequence, the public health services could not deliver the services they used to (e.g. vaccination) and could not start new programmes. Owing to legislative changes, public health services in some countries lost some of their previous functions. In the Czech Republic, for example, monitoring of environmental pollution was partly moved to the Ministry of the Environment, the monitoring of food quality to the Ministry of Agriculture, and radiation hygiene to a new governmental Agency for Nuclear Safety.

Blurring of responsibilities and loss of discipline

While some elements of decentralization and new legislation were necessary, the combination of these changes often brought about a reduction in control and blurring of responsibilities. This, combined with the fall in real funding, often led to a decline in the quality of previously successful functions (e.g. communicable disease control). Another by-product of decentralization was that, in many countries, public health was removed even further from the interests of the ministries. Public health is often low among the priorities of local administrators, and funding cuts have affected public health agencies disproportionately.

Reductions in the numbers of staff

Similar to other health services, the public health services were well staffed before 1990. After the political changes, there were fewer people working in the system. While some reduction was desirable (Feachem & Preker 1991), many of those who left the service were the more dynamic and better trained people. The two main reasons for leaving the service were uncertainty about the future of the service and low salaries.

Introduction of health promotion

Health promotion strategies can be divided into three groups: (a) campaigning strategies (e.g. tobacco control policies); (b) responsive strategies (e.g. programmes for drug misusers and HIV prevention); and (c) intersectoral collaboration (e.g. working with housing, transport or even finance ministries). While health promotion was largely ignored in CEE/NIS before 1990, it subsequently became one of the core functions of the public health service in many countries; much of this was led by the WHO Regional Office for Europe.

In general, the responsive strategies have received most attention. Most countries have now some policies towards HIV control and harm reduction among intravenous drug users, child development, lifestyle factors, etc. As with many other public health initiatives after 1990, harm reduction activities have been strongly influenced by international agencies, particularly by the International Harm Reduction Development programme of the Open Society Institute, focusing on intravenous drug users and HIV prevention (<http://www.soros.org/harm-reduction>, accessed 17 June 2002).

The relative lack of intersectoral programmes may be due to the difficulties that national governments have in adopting and enforcing public health legislation (e.g. banning tobacco or alcohol advertising or increasing tax on tobacco and alcohol). In many countries, anti-tobacco and anti-alcohol legislation and taxation has been attempted and approved (Kralikova & Kozak 2000). The tobacco industry has mounted considerable opposition to these initiatives, however, and has often been successful in reversing legislation or blocking its implementation (the most recent example being the reversal of anti-tobacco legislation in the Czech Republic in May 2002). The low priority of public health in government policy is reflected by the lack of communication with agencies in different sectors.

There have nevertheless been a number of success stories. A well known example of a multisectoral approach is the Healthy Cities Network, which promotes intersectoral work at the local level. This approach has been welcomed in CEE and NIS, since it appears new and encourages health promotion, participation and engagement of politicians with people's concerns. The Regional Office has supported national networks of cities in CEE and the Russian Federation so that, for example, Croatia has a network with 60 full or affiliated member cities (<http://www.who.dk/healthy-cities>, accessed 17 June 2002). Other examples include the European Network of Health Promoting Schools, led by WHO and funded by the European Union and the Council of Europe, which includes most of the CEE and provides a base for national development of school-based health education; the health-promoting hospitals networks, again mostly in CEE but also in Kazakhstan; and the Health in Prisons Project, which includes Latvia, Poland, the Russian Federation and Uzbekistan.

Environmental health

Before 1990, public health services were unable to reduce exposure to environmental pollutants. For political reasons it was often difficult to address the problem. This has changed since 1990. The issue of environmental pollution and health has become a priority, and

many countries have initiated programmes of training and research. On the other hand, health impact assessment has yet to become standard practice. Perhaps the most extensive attempt to integrate research and policy in the area of environmental health is the Czech National Programme of Environment and Health, which integrates the collection of data on exposures and assessment of health status. Another example of a new approach to environmental health are the WHO-led National Environmental Health Action Plans (NEHAPs) adopted by a number of CEE/NIS. This framework attempts to coordinate different sectors of the economy and government in formulating sustainable strategies for environment and health. Unfortunately, much of it remains on paper.

Health information systems

Investments have been made to improve the quality of information systems and health monitoring tools. Information systems have been modernized, and many countries now have computerized systems for the reporting of different diseases or health outcomes. Many of these data are reported to WHO, UNICEF and other international agencies, and some are available in on-line or off-line databases. For example, WHO's European health for all statistical database (<http://www.who.dk/hfadb>, accessed 17 June 2002) contains a large number of health-related and social indicators. The WHO Regional Office for Europe, with other international partners, also supports the development of Health Care Systems in Transition (HiT) profiles, which offer important overviews of the health system and public health issues (<http://www.observatory.dk>, accessed 17 June 2002). The computerized information system for infectious diseases (CISID) (<http://cisid/who.dk>, accessed 17 June 2002) contains communicable disease surveillance data. Data on cardiovascular risk factors are available through the WHO countrywide integrated noncommunicable diseases intervention (CINDI) programme (<http://www.who.dk/eprise/main/WHO/Progs/CINDI>, accessed 17 June 2002). UNICEF has developed the TransMONEE database of health and socioeconomic indicators in 27 countries in CEE/NIS (<http://www.eurochild.gla.ac.uk/documents/monee>, accessed 17 June 2002).

Data quality depends, of course, on the quality of primary data collection, and for some outcomes and countries this information may be unreliable. The use of such data is further limited by a lack of information on the distribution of health outcomes within populations (e.g. by socioeconomic group).

In addition, ad hoc surveys or repeated surveys in population samples have been initiated in many countries to collect data on health behaviour and individual risk factors. On the other hand, the relaxation of control has also affected health information systems, with many data sets becoming less complete and less reliable. As before, communication between different agencies collecting or maintaining information is generally poor, even within the health sector.

4. Key factors enabling and obstructing advances in public health

Overall macroeconomic and social conditions

As mentioned above, the overall economic situation in many countries is poor. There are also other major societal problems, such as high levels of corruption and crime, weak civic society structures, low social capital, rising unemployment and income inequalities. It is difficult to reform institutions under these circumstances, and all these factors have a negative influence on health (Cornia 1997).

General attitudes to public health

In many countries the predominant view is that population health is largely a product of medical (curative) services. Most people and policy-makers see medical services as crucial. Most would agree that it is important to maintain immunization programmes and other measures to control communicable diseases. Some people would support health promotion programmes in the area of chronic diseases or substance misuse. But few would assert that actions taken by other sectors (e.g. education, transport, pensions) have an impact on health. Very few people consider health as a marker of the successful development of a society. As a consequence, policy-makers in different sectors do not consider the impact of their decisions on health, and it is often difficult to obtain support for health-related initiatives outside the health sector. For example, a review of public health policy documents in the Russian Federation revealed that, while most authors demanded preventive programmes, the vast majority only considered activities within the health sector (Tkachenko et al. 2000).

The inherited system

It will take time to refocus the old system towards health promotion and prevention. Co-operation with other sectors has traditionally been poor and it is difficult to change this attitude.

Lack of a multisectoral approach

Even in newly organized programmes that are set up to be multisectoral, collaboration between different sectors and institutions may be difficult. For example, Parvanova (2001) analysed environmental health policy and practice in six formerly socialist countries in eastern and southern Europe. She found that, in all countries, the importance of both environmental health and a multisectoral approach to it were well recognized. Nevertheless, there was universal difficulty in collaborating with other agencies, often within the same sector.

Training

There is urgent need for re-training of public health workers in key areas, such as health promotion, medical statistics and informatics, and risk or health impact assessment. The understanding of “evidence” often differs markedly from that in western European countries. The evidence-based approach has not yet been established in CEE/NIS. Medical schools pay little attention to public health and its determinants and health promotion strategies, and postgraduate training in public health still largely focuses on communicable disease control. Non-medical professionals are still undervalued in public health services.

5. Policy options

In early 1991, a consultation by the World Bank with the Czech Republic proposed six principles to the future of public health. These were: (a) to preserve the good (communicable disease control and vaccination); (b) to attack the bad; (c) to reform institutions; (d) to develop training in public health; (e) to safeguard the public health budget; and (f) to adopt a multidisciplinary and multisectoral approach (Feachem & Preker 1991). We believe that these principles are still valid.

Preserve the good

It is crucial to preserve or rebuild the capacity of the public health services for communicable disease control, vaccination and the maintenance of child and maternal health programmes. Those countries that preserve the effective parts of the old services are better prepared to meet new challenges than those that allow the entire public health service to disintegrate.

Attack the bad

The list of public health issues is very long, and differs between countries. In the medium term, each country needs to prioritize its health problems. These may include: new and old infectious diseases; safe practice in health care facilities; health behaviour and risk factors; substance abuse; birth control; and injuries and accidents. Programmes to prevent or control these problems need to take account of the major determinants of each condition, and should use multidisciplinary and multisectoral approaches to tackle the determinants of health (see, for example, Acheson 1999).

Reform the institutions

Reforms should encourage retention of bright and motivated staff, should increase the effectiveness of the public health service, and should encourage intersectoral and multidisciplinary approaches.

Train in public health

Schools of public health have been established in several countries, but they frequently focus on health service management rather than on epidemiology, population health, prevention and health promotion. While sending students abroad may not be feasible, it should be possible to develop new or reform existing schools of public health. There are several examples of successful initiatives: in Hungary, a School of Public Health was established with international assistance (McKee et al. 1995); the American University in Yerevan, Armenia, offers a Certificate in Public Health programme; and there is a public health programme at the University of Varna, Bulgaria, supported by the EU TEMPUS programme. The collaborative effort of the Open Society Institute and the Association of Schools of Public Health in the European Region (ASPHER) (http://www.ensp.fr/aspher/C_projects/osi/osi_aspher.htm, accessed 17 June 2002), which focuses on education and training in public health in 13 countries of the region, is another considerable resource.

Protect the budget

Countries need to recognize that preventive services are a public good that should be financed from public funds, and that there should be some elements of compulsion and state control. Governments should protect the public health budget, perhaps as a proportion of the total health budget. The rationale is that, although the public values curative services more than public health services, investing in well designed preventive services has a greater impact on population health.

Adopt interdisciplinary and intersectoral approaches

The causes of ill health in CEE/NIS (and elsewhere) are complex. While public health service or health sector interventions as a whole can make a valuable contribution to improving health, the problem of poor health of the population cannot be solved without addressing the broader determinants of health. Local services need the support of central government, and coordination between different ministries, public institutions and agencies and nongovernmental organizations will be needed. Public health professionals must advocate this broad approach to health and its determinants.