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EXECUTIVE SUMMARY

The European Union is made up of a diverse group of countries with variations across a multitude of factors: cultural, political, economical and social. Differences are also evident in population health and living conditions, as measured by numerous indicators at both macro and micro levels. Good health can be considered one of the most fundamental resources for social and economic prosperity. While improvements have been seen over the past few decades in both health status and the conditions in which people live and work, there continue to be wide disparities across the Member States, and between population groups within countries.

The overall aim of this report is to review trends in health and living conditions in the EU and Candidate Countries (Bulgaria, Romania and Turkey), and describe relevant policy developments targeting health improvements and the reduction of health inequalities. We aim to present an overview of the key issues and not a comprehensive literature review or exhaustive analysis of the topics.

A common thread throughout this report is health equity, which has been defined by the World Health Organization as the absence of unfair and avoidable or remediable differences in health among population or groups defined socially, economically, demographically or geographically. Research and policy have been predominantly focussing on the social aspect of health inequalities, and therefore the report will also place the most emphasis on this area .

First we review trends in health status and avoidable mortality, outline the evidence for health inequalities, and inequalities in access to care, followed by a focus on mental health policies, and then health policies in general. A special themed section follows on time use and health, providing a novel perspective in which to examine differences in behaviours impacting health.

Health trends

Since 1970, there have been considerable improvements in life expectancy in the EU-15. However, alongside these improvements, inequalities in health have been persisting, and in some cases, worsening. In the new Members States, particularly those in central and eastern Europe, improvements have been less steady, and among men, there have been periods of decline, particularly resulting from the political and economic transition. Therefore, the past three decades have been marked by a widening health gap between the two regions. This health gap has mainly been attributed to three causes of death: injuries and violence, cardiovascular disease, and cancer; combined with underlying social and economic factors. These different mortality patterns across Europe can be better understood by examining the common risk factors such as cigarette smoking, alcohol consumption and obesity.

Causes of the underlying mortality changes in transition countries are extremely complex. It appears that at the time of transition, there was a marked increase in mortality from external causes, namely traffic accidents (because of the sudden availability of western cars combined with limited safety controls and transport infrastructure). In the second half of the 1990s, mortality rates declined, largely as a result of falling rates of cardiovascular disease; the decline was particularly sharp in Poland. In spite of this decline, mortality rates for cardiovascular diseases are persistently higher in the new Member States; and improvements were not seen in Bulgaria and Romania. Like the countries of western Europe, health inequalities are becoming an increasing concern, as high levels of poverty remain alongside significant increases in wealth in some population groups.

Despite health improvements since the late 1990s in the new Member States, there remains a considerable challenge to public health policy in order to achieve the levels of health enjoyed by their western neighbours.

Avoidable mortality

The diversity in health status across the EU can be explained by a complex array of factors, ranging from psychosocial, behavioural, institutional and economic. The health care system also plays a significant role in improving the population's health. Measuring the contribution of the health care system, in terms of avoidable deaths, can provide insight into the changes in and differences in health status among European countries. Indeed, avoidable mortality – or mortality from diseases that could be prevented or treated in the presence of timely and effective health care – accounted for between a quarter and a third of the gap in life expectancy between the east and west of Europe between the 1970s and 1980s. More recent analyses provide evidence of a clear east–west divide in avoidably mortality in the early 1990s for both men and women, mirroring the differences in health between the two regions.

Avoidable mortality estimates can then be disaggregated into treatable and preventable mortality. The list of diseases that are considered to be treatable is extensive, with some examples being cancer of the skin, breast, cervix and testis, cerebrovascular disease, and respiratory disease. Three causes of death are assumed to be preventable through inter-sectoral public health policies: lung cancer, traffic accidents, and cirrhosis of the liver. Romania and Bulgaria continue to have the highest rates of treatable mortality in the region, followed by Latvia and Lithuania. There have been considerable improvements in treatable mortality in many countries, especially Czech Republic, Hungary and Slovenia, in large part due to a decline in cerebrovascular disease through improved control of hypertension. Unlike treatable mortality which saw rates decline for both men and women, preventable mortality has primarily declined in the past decade among men. This discrepancy can be explained by rising rates of smoking among women across Europe.

While health indicators reveal a significant gap between the EU-15 and the new Member States, the extent of the gap varies with the index. Indices such as life expectancy at birth, health life expectancy, disability adjusted life expectancy (DALY), and avoidable mortality paint a different picture. For example, when comparing the DALY with avoidable mortality,

France's ranking moves from the 3rd (DALY) to the 5th (amenable mortality); for Greece to the 7th to the 12th; for the UK from the 10th to the 18th.

Health inequalities

Despite improvements in living conditions and health status in most countries, social inequalities in health have persisted, and in some cases they have increased. Evidence suggests that inequalities in health across socioeconomic groups and regions have widened more sharply in eastern than in western Europe. Studies continue to find a social gradient favouring the better-off for all causes of mortality and especially in cardiovascular mortality, stroke mortality and among men in respiratory diseases. In addition, health status has been found to be strongly determined by socioeconomic, employment and education status in all European countries. Some of these inequalities in health can be explained by the distribution of risk factors, such as smoking and obesity, across social groups.

Social determinants of health have long been studied in relation to health inequalities. Among others, housing and employment conditions are two important social determinants of health, and contribute to existing inequalities across and within countries. Unhealthy housing, where individuals are more likely to live in overcrowded, damp, unsafe dwellings, is more common in the new Member States than the EU-15. However, within countries, problems with housing is strongly related to social class – thus highlighting the need for policy action; for example, in Sweden, housing standards was improved to improve public health. Unemployment is strongly associated with poor health in addition to difficulties accessing health care services. Patterns of employment have seen considerable change over the past decades. With the information economy, employment has become more mentally than physically demanding. As a result, work-related stress is now a major challenge to productivity and health.

Although research in determinants of health has largely focussed on social factors, access to health care is widely believed to be a prerequisite for achieving health equity. Inequalities in access to health services remain even among countries that have removed financial barriers, and most strongly in specialist care, such that poorer members of society may not be receiving the health care they need. In many central and eastern European countries, barriers to accessing health care are more striking, in light of resource shortages forcing patients to pay hefty charges, often informally, in addition to pervasive quality problems. These inequalities in access are likely to be exacerbating existing inequalities in health.

Mental health in Europe

The health and socioeconomic burden of mental health in Europe is significant. One in four people experience a significant episode of mental illness during their lifetime; only cardiovascular disease contributes more to the burden of illness in Europe. Poor mental health is linked with social deprivation and social exclusion. The economic costs of mental health problems are high, with conservative estimates in the EU-15 alone at 3–4% of GNP.

National mental health policy efforts across Europe remain focussed primarily on treatment, care and to some extent rehabilitation with far too little attention being paid to the promotion of good mental health and well-being. Trends in treatment have shown a steady shift in the balance between provision of services within institution base care and in the community over the last thirty years, however less so in countries of central and eastern Europe. Some countries have a low political commitment to making improvements, which is reflected in low levels of financing. In some cultures the stigma of mental illness represents a significant barrier to action. Many challenges to mental health policy still remain to be addressed. There is a need to destigmatize mental illness, empower service users, increase funding for mental health care and promotion. Moreover, the evidence base for effective policy-making should be improved, and efforts within countries, and at the EU level should be better coordinated.

National public health policies

In light of the strong evidence pointing to significant health inequalities within European countries, and difficult challenges persisting such as the burden of mental health problems, countries are paying increasing attention to coordinating and strengthening public health policy at national level.

National public health policies exist, or are under development, in most countries. The WHO Health for All guidelines have influenced the national policies in many countries, particularly in new Member States and Candidate Countries. Reducing inequalities in health is a goal of the national or regional public health or broader health policy in most countries; however there are differences in the extent these policies are formally defined and developed, and on the most part they is only limited monitoring and evaluation. The most comprehensive inequalities reduction strategies can be seen in the United Kingdom, Ireland, Sweden, and the series of local strategies in Netherlands. Some of the challenges in developing effective strategies in many countries centre around the limited availability of data on health and health inequalities, lack of political will, and fiscal pressures limiting the resources available for implementing strategies.

Efforts to reduce health inequalities are inextricably linked to the fight against poverty and social exclusion. Thus a multi-sectoral approach is needed to adequately confront the major determinants of inequalities. However few countries have developed formal mechanisms for different sectors to collaborate in their policy efforts. Target-setting as a policy-making tool also varies across the EU, with some countries, namely the United Kingdom, Ireland, the Netherlands and Finland, making much more use of quantitative, measurable health targets than others, that simply rely on the general expressions of policy goals.

Overall, more needs to be done across the EU in developing coherent and effective strategies to reduce health inequalities. There is a need to greatly increase the evidence

base of what policies are achieving a reduction in inequalities, as pioneered in the Netherlands at local level, and to communicate this research at an international level.

One case study of national public health strategies is screening for diseases. A survey of screening practices across Europe reveals that effective screening methods are rarely achieved, especially in the new Member States. More specifically, a population register that allow patients to be recalled and followed up is often missing. Furthermore, a single national body for reviewing tests and practice is present only in a few countries. Despite the considerable improvement in the evidence base for establishing screening practices for certain diseases, much needs to be done to improve the existing programmes in many countries.

Time use and health in the EU

As a special theme, the final section of the report focuses on the relationship between time use and health, through which we identify some important emerging health issues such as work–life balance and the relationship between the new changing environment (low level of physical activity, more sedentary life) and obesity.

The impact of changes in working arrangements and the increased female participation in the labour market have raised issues related to work–life balance, and high levels of work–related stress that are now high on the policy agenda of the EU and its Member States.

Moreover, low levels of physical activity, the change in eating behaviours and the new media environment are all factors that significantly contribute to high rates of obesity in particular among children. Obese children are likely to become obese adults and obesity is a leading risk factor for several chronic diseases such as Type 2 diabetes, cardiovascular diseases and cancer along with socio–psychological problems.

Recommendations

In compiling this report, we made use of numerous existing surveys of the European region. Surveys are an important instrument in investigating differences within and across countries in behaviours and choices people make. However, to properly identifying links, and direction of any causal relationship, a redesign of various surveys is necessary. The limitations of these surveys can be categorized into four main areas.

- (1) The scope of many surveys focus are limited by excluding certain population groups or by focusing on specific subject areas.
- (2) Comparability is a major challenge when conducting surveys across countries. Increased transparency on survey methodology is needed, for example in regards to sampling weights and processing of non–response, in order to adequately assess quality and comparability. Moreover, cultural differences and use of different reference periods are other factors that might jeopardize cross–country comparability.

(3) Questions related to the motivation of behaviours although important to track trends on behaviour patterns, are often missing.

(4) Access to surveys is often not possible or when possible, the public can access only aggregate data. However, it would be incredibly valuable to have access to micro-level data.

Moreover, to better understand and disentangle the relationship between socioeconomic variables and health, availability of panel data survey is essential. With a simple cross-sectional analysis it is difficult to understand whether it is health status that influences socioeconomic position (“selection”), or social context that leads to illness (“causation”).

1. INTRODUCTION

In May 2004 ten countries joined the EU, bringing the number of Member States to 25 and three additional countries are expected to join in the near future: Turkey, Bulgaria and Romania. The level of heterogeneity in living conditions characteristics such as absolute and relative income, education, employment, housing, and transport, has widened tremendously. Changes in inequalities and living conditions affect population health directly and indirectly through psychosocial factors.

Socioeconomic inequalities in health status are persistent in all societies; even in the richest countries the better off live longer and report better health than the poor. The social conditions in which people live and work affect their health status and longevity and contribute to widening the gap among socioeconomic groups. These differences in health are a clear violation of social justice but not all health inequalities are unfair¹. Health equity implies the “absence of unfair and avoidable or remediable differences in health among population or groups defined socially, economically, demographically or geographically” (Commission on Social Determinants of Health 2005).

The relation between health and socioeconomic status may be bi-directional: either health status influences socioeconomic position (“selection”), or social context leads to illness (“causation”). Sick individuals are more likely to lose their jobs and remain unemployed than healthy people but, on the other side, people in poor health are more likely to move downward than upward (Mackenbach 2002). However, it has been shown that lower socioeconomic groups have a higher probability of developing health problems than the better-off, suggesting that the direction is more likely to be from social environment to illness and not the other way round. “Causation” instead of “selection” seems to be the predominant explanation for socioeconomic inequalities in health.

Medical care can prolong survival and alleviate suffering but becoming ill is influenced by the socioeconomic conditions in which people live; the poorer the conditions, the poorer the health. Vast disparities in health status appear to be pervasive both between and within nations (Marmot 1999). Whether a country is rich or poor and whether it has high or low aggregate health, unequal distributions of health are present. Socioeconomic inequalities in health persist and are often large in the wealthiest countries. In rich countries, although the absolute income of the worse-off individuals is higher than many in less wealthy

¹ It is not easy to establish the draw the line between avoidable and unavoidable inequalities and between freely and not freely chosen behaviours; value judgements are required (Peter and Evans, 2001). Health inequalities resulting from different biological characteristics, free and informed choices, and pure chances cannot be defined as unfair; but if these are the result of not-freely chosen health behaviours, from inequalities in access to health care or from social or environmental circumstances, then they are not only unfair but also potentially avoidable.

countries, they are still faced with relative health inequalities. Since the nineteenth century socioeconomic health disparities have declined in absolute terms; it is less clear whether relative inequalities across social classes have also declined over time (Mackenbach 2002).

Economic growth is a major determinant of average health status in poor and developing countries where malnutrition and infectious diseases are the main causes of the high percentage of maternal, infant and childhood deaths. Among poor countries, a small rise in GNP corresponds with large gains in life expectancy; but as GNP increases, the relationship levels off. In wealthy countries, absolute income has no significant effects on longevity (Marmot 1999) but what matters is the association between relative income, or societal status, and health.

Income, education and occupational status affect health and life expectancy both directly and indirectly through psychosocial factors. People at the lower end of the social ladder are more likely to report ill health than those near the top, both at the individual and population level. A social gradient is present all along the social spectrum.

Social hierarchy may induce worries about possible incompetence and inadequacy, feelings of insecurity, and fears of inferiority. These feelings are among the most powerful and recurrent sources of chronic stress and increase people's vulnerability to a wide range of infections and cardiovascular diseases. The pathway is mainly from income distribution, through the quality of social relation, to health (Kawachi 1997).

Many diseases, each with different established risk factors, show similar social patterns: termed the "hypothesis of generalized susceptibility" (Berkman and Syme 1976). Each social position has a different exposure probability, encountering specific patterns of health risks. Exposures may vary for duration, amount and type (Diderichsen 2001). For example, people in lower socioeconomic groups have a higher probability of being exposed to hazards during work and at home (e.g. greater risk of toxic exposure) and they might also be more vulnerable and susceptible to diseases than the better-off (Mackenbach 2002). Therefore, even if a risk factor is distributed equally across social groups, its impact on health may be unequally distributed, given the differences among social groups in their vulnerability or susceptibility to that factor.

There are other important sources of socioeconomic inequalities in health such as diet, housing, job control, physical exercise, smoking, and alcohol consumption (Mackenbach 2002). Among these behaviours it is difficult to differentiate the ones that are the result of free choices from the ones that are influenced by the society stratification. Indeed, only the latter can be considered a violation of social justice and avoidable and therefore, reflect unfair socioeconomic inequality in health. Roemer (1995) has argued that unhealthy choices made by individuals in a particular social stratum have to be regarded as a product of that class structure as long as the individual's risk taking is not greater than the average risk taking of the people in that stratum. A corollary of this thesis is that behaviours of working-class people cannot be judged freely most of the time.

According to the “life course” perspective, past social positions influence individuals’ health status; advantages and disadvantages tend to cluster cross-sectionally and to accumulate longitudinally (Blane 1999). On the one hand, advantages and disadvantages in one sphere of life are likely to be associated with similar advantages or disadvantages in other spheres of life. On the other hand, advantages and disadvantages in one phase of life are likely to have been preceded by similar advantages or disadvantages in other phases of life. Therefore, “the underlying dynamic of this social process is the continuity of social circumstances from parental social classes to social conditions during childhood and adolescence and, eventually, to adult socioeconomic position” (Blane 1999). Individual social experiences are undeletable, they are written into the physiology and pathology of our body: a child raised in an affluent home is likely to succeed educationally, which will favour the entrance to more privileged sectors of the labour market, and increase the probability that she can live in a good-quality house and earn an income that permits a healthy lifestyle. On the contrary, a child from a disadvantaged home is likely to achieve few educational qualifications, to enter the unskilled labour market, to have a risk-full and low paid job, and less probability of having a healthy lifestyle. Therefore, family socioeconomic status is strongly related to the child’s educational opportunities, which in turn are associated with subsequent occupation and income. Parental interest in the child’s education is also likely to affect educational attainment, and educational attainments together with occupation are likely to be related to health habits, such as smoking, exercise, and dietary choices.

A significant amount of scientific research has contributed to understanding the relation between intra-uterine and infant conditions and prevalent diseases, in particular, coronary heart diseases, in later middle and older age (Barker 1994), emphasizing the role of childhood environment on adult health. Each factor is the result of comparably insignificant events. For example, it has been shown that height at age seven is a powerful predictor of the subsequent risk of unemployment (Montgomery 1996), while adult height is not a good predictor of unemployment risk. Height at age seven can be interpreted as a measure of delayed growth during childhood, caused by socioeconomic and psychosocial adversity entailed in factors such as poor nutrition, disrupted sleeping pattern and family conflict. Indeed, family conflict is related to stunted growth in childhood, to reduced health in adolescence, and to lower self-esteem and psychological well-being (Montgomery 1997).

Different models have tried to synthesize the relation between socioeconomic status and health. Although these models may vary in degree of complexity and details, they are all based on the “layered” view of the causation of health inequalities (Mackenbach 2002). Lower socioeconomic status leads to ill health through a number of other factors that represent the “link” between socioeconomic status and health.

Marmot and Wilkinson (1999) link biological and social elements (Figure 1.1); individual genetic predisposition, environment and lifestyle characteristics are all factors that affect ill health. Genetic predispositions have the main role in determining why among the exposed a person is more likely to get ill than another. However, the individual level of analysis may miss the social causes of diseases. To find the determinants of prevalence and incidence

rates, it is necessary to consider also factors operating beyond individual level. The influence of the social structure operates via three main pathways. Material circumstances are related to health directly and via the social and work environment. These in turn affect psychological and health behaviours. The life course perspective is also taken into account. Early life together with cultural and genetic factors influences the probability of becoming sick.

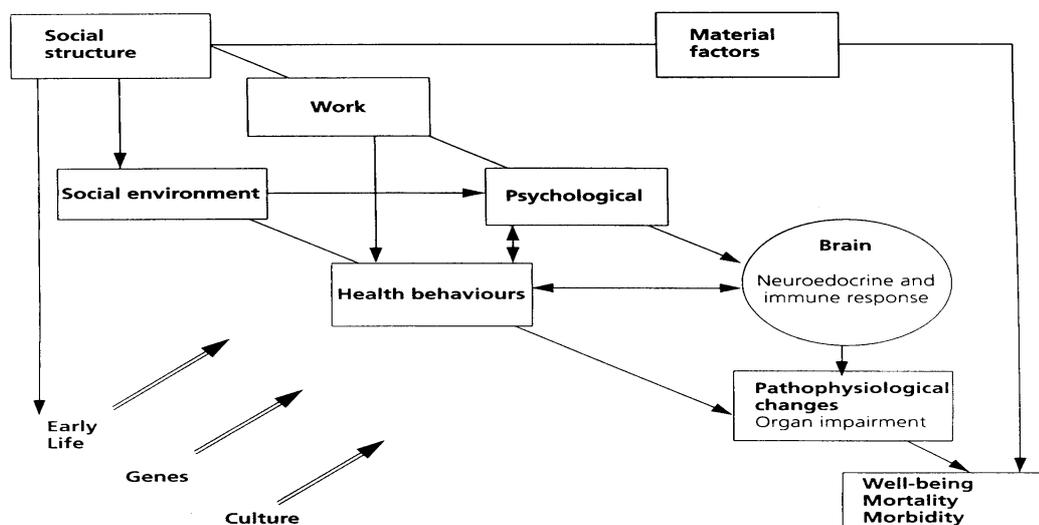
In an alternative model (Mackenbach 1994), health status in adult age is the result of childhood health, environment, cultural, psychological and psychosocial factors, and lifestyle; but also the reverse effect of health on socioeconomic position is taken in consideration.

The health care system may also play a role in explaining health inequalities. Although most research in the area of health equity has focussed on the social determinants of health, it is important to understand the contribution of health care to both improving health, and possibly reducing inequalities. Most importantly, access to health care may not be equitable across social groups, thus exacerbating existing health inequalities. Individuals in most need of health care may be less able to benefit from the services available to them, whether due to financial barriers, such as payments required, or socio-cultural barriers, such as having less 'voice' or ability to navigate the system. Offering universal access to health care services does not eliminate inequalities, as shown by most industrialized countries that have removed financial barriers to access. However the extent to which improvements in health care, with medical advancements, continue to benefit more privileged social classes due to inequalities in access, then the health system could play an important role in fighting health inequalities.

The WHO has recently established a commission on Social Determinants of Health with the intention of addressing important areas such as: gradient of health inequality, life-course perspective, relation to health systems, and rapidly growing health problems in developing countries. The contribution of Wilkinson and Marmot (2005) has the objective of addressing ten themes: the social gradient, stress, early life, social exclusion, work, unemployment, social support, addiction, food, and transport to understand the causes of health inequalities.

The relationship between living conditions, socioeconomic factors and health will be discussed and analysed in the different sections of this report with the objective of stimulating a debate and policy action for creating a healthier and more equitable society.

Figure 1.1 Social determinants of health



Sources: Marmot and Wilkinson, 1999

1.1 Methodology and structure of the report

This report describes the health status and living conditions and related policies in 28 countries from the perspective of social determinants of health. It draws on contributions from the country experts in addition to material from official reports, links from government websites, and the literature on public health from these countries. The search strategy was iterative, based initially on searches using PubMed and Google, as well as detailed searches of ministries of health and relevant government agencies. Our aim is to provide an overview of the key issues identified in public health and living conditions in an enlarged EU, and to indicate important references upon which further, in some cases more detailed, investigation can be based.

Following this introduction, *Section 2* describes trends in health status across the EU and three Candidate Countries highlighting the discrepancy in health status between the EU-15 and new Member States (or western and eastern Europe), and the diversity within the new Member States, and offering some explanations for the observed, and prevailing, differences.

Section 3 continues to offer an explanation for discrepancies in health status across countries through the lens of avoidable mortality – i.e. measuring the extent to which differences in health (and more accurately mortality) can be attributed to the health system.

Section 4 provides a detailed description of the evidence on the extent of socioeconomic inequalities in health within countries, i.e. to what extent does health status, mortality, and risky behaviours differ across socioeconomic groups, including income, education and employment status? It then describes in more detail two determinants of health: housing and employment. Following this, describes the existence and level of inequalities in access to health care that relate to socioeconomic status and living conditions

Section 5 provides a detailed description of mental health problems in Europe, outlining the extent of the problem, the social costs, how mental health care services are provided and funded, and relevant policy developments. *Section 6* outlines another key policy issue: screening for disease in Europe.

The next section reviews the national (and international) policies that address the social determinants of health. *Sections 7.1 and 7.2* compare the national and/or regional public health policies across the EU and Candidate Countries with an emphasis on identifying the methods for decision-making in public health, the extent to which the national policies address health inequalities, the use of targets in public health, the acknowledgement of the importance of a multi-sectoral approach to policy-making, and the degree of policy evaluation among the countries. *Section 7.3* provides some examples of policies addressing employment from a public health perspective. Finally, *Sections 7.4 and 7.5* includes two tables to offer a synoptic description of the organization of public health in the 28 countries, identifying the key agencies and institutions at national regional and local levels that are involved in public health decision making and programme implementation.

Section 8 is dedicated to a special theme – time use and health, focusing on disentangling the relationship between how individuals use their time and their health. Lifestyles have changed in the last two decades which relates to the increasing severity of diseases of the ‘modern age’, notably obesity and mental health problems. Time use surveys are a powerful instrument to unveil differences in the labour market, cultural and leisure activities, physical activity, and household tasks within and across countries.

Finally, *Section 9.0* concludes with a summary of findings and recommendations for future work, particularly in the area of survey design.

References

- Barker, D.J.P. (1994). Mothers, babies and disease in later life. *BMJ* Publishing, London.
- Berkman, L.F., and Syme, S.L. (1976). Social networks, host resistance and mortality: a nine years follow-up of Alameda County residents. *Am J Epidemiol*, 109, 186–204.
- Blane, D. (1999). The life course, the social gradient, and health in Marmot, M. and R.G. Wilkinson eds. *Social determinants of health*. Oxford University Press, Oxford.
- Commission on Social Determinants of health (2005). Towards a conceptual framework for analysis and action on the social determinants of health. *Discussion paper* for the Commission on Social determinants of health, draft, May 2005.
- Diderichsen, F., Evans, T., and Whitehead, M. (2001). The social basis of disparities in health. In: T. Evans et al, eds. *Challenging inequities in health*. Oxford University Press, Oxford.
- Kawachi, I., Kennedy, B.P., Lochner, K., and Prothrow-Smith, D. (1997). Social capital, income inequality and mortality. *Am J Public Health*; 87, 1491–8.
- Mackenbach, J.P., Bakker, M.J., Kunst, A.E., and Diderichsen, F. (2002). Socioeconomic inequalities in health in Europe: an overview. In J.P. Mackenbach and M.J. Bakker, eds. *Reducing inequalities in health*. Routledge London and New York.
- Mackenbach, J.P., Kunst, A.E., Groenhouf, F., Borgan, J.K., Costa, G., Faggiano, F., Jozan, P., Leinsalu, M., Martikainen, P., Rychtarikova, J., Valkonen, T., (1999). Socioeconomic inequalities in mortality among women and among men: an international study. *Am J Public Health*; 89(12): 1800–1806.
- Marmot, M. (1999). Introduction. In M. Marmot, and R.G. Wilkinson eds. *Social determinants of health*. Oxford University Press, Oxford.
- Marmot, M. and Wilkinson, R.G. (1999). eds. *Social determinants of health*. Oxford University Press, Oxford.
- Marmot, M. (2002). The influence of income on health: views of an epidemiologist. *Health Aff*, 21(2): 31–46.
- Marmot, M. (2005). Social determinants of health inequalities. *Lancet* 365: 1099–1104.
- Montgomery, S., Bartley, M., Cook, D.G., and Wadsworth, M.E.J. (1996). Health and social precursors of unemployment in young men in Great Britain. *J Epidemiol Community Health* 50, 415–22.
- Montgomery, S., Bartley, M. and Wilkinson, R. (1997). Family conflict and slow growth. *Arch Dis Child*, 77, 326–30.
- Peter, F., and Evans, T. (2001). Ethical dimension of health equity. In T. Evans eds. *Challenging inequities in health*. Oxford University Press, Oxford.
- Wilkinson, R., and Marmot, M. (2005). *Social determinants of health. The solid fact*. Second edition. WHO, Europe.
- Roemer, J. (1995). Equality and responsibility. *Boston Review* 22(2).

2. HEALTH STATUS IN THE EU

In May 2004 ten countries joined the EU, bringing the number of member states to 25. Among these new members states are two Mediterranean countries: Malta and Cyprus, and eight countries of central and eastern Europe (CEE): Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia. Three additional countries are expected to join in the near future: Turkey, Bulgaria and Romania. Differences in health status among the EU-15, the new Member States and three candidate countries are very large, although Cyprus and Malta are more similar to the EU-15.

Therefore, in examining the health status and trends in the EU, at the risk of oversimplification, four broad categories can be discerned in terms of their levels of health and accompanying risk factors. The four categories comprise: (1) the EU-15, (2) the CEE countries (3) Cyprus and Malta, (4) the three candidate countries: Turkey, Romania and Bulgaria. After presenting health trends among these countries, this section will proceed to comment on the major underlying factors for observed patterns, focussing mainly on risk factors/lifestyle such as eating behaviours and smoking, differences in disease and mortality rates between eastern and western Europe, and social and economic determinants. Finally we briefly discuss the potential impact of health care on differences in health trends across the countries, while the next section (*Section 3.0*) provides a more detailed analyses.

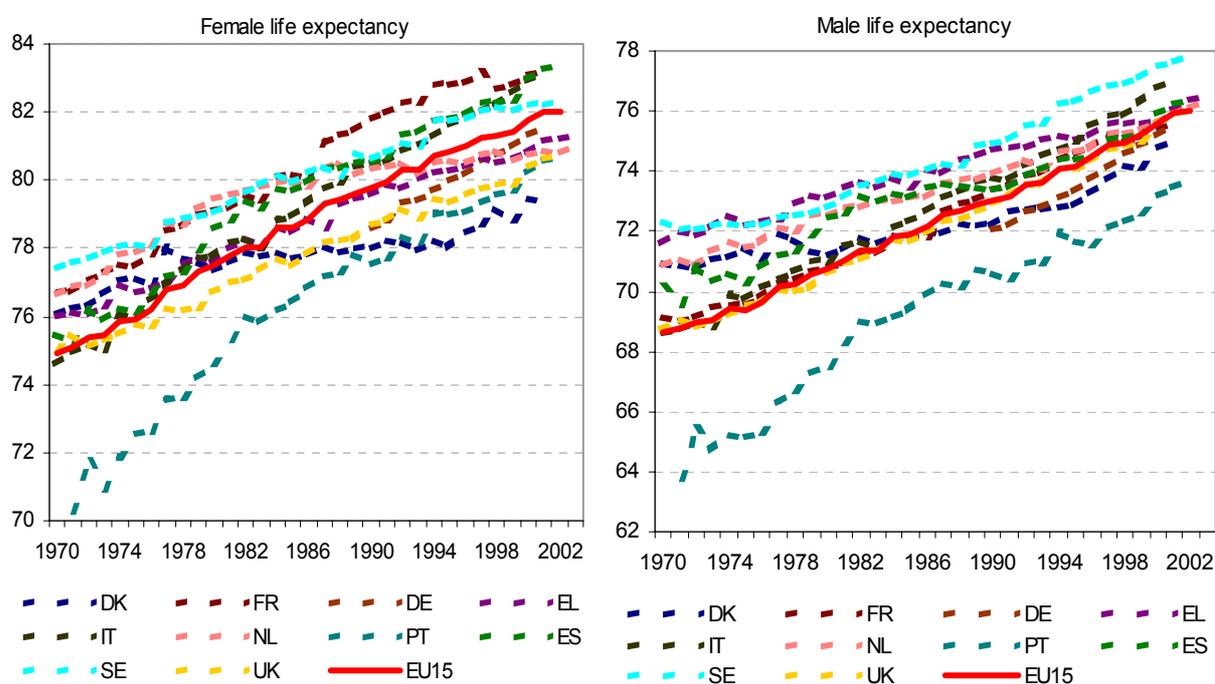
Key Points:

- Health status has improved in all EU-15 Member States since the 1970s
- The new Member States experienced significantly increasing mortality since the 1970s; the political and economic transition in the former communist countries significantly worsened the health of these nations
- Poland, the Czech Republic, Hungary and Slovakia had noticeable improved health status following the transition
- In Malta and Cyprus, health indicators are comparable to the EU-15
- In the CC3, life expectancy at birth has increased since 1970, and more rapidly since the 1980s, however, they lag behind both the new Member States and EU-15 averages
- The EU-15 average years spent in good health is about 70, compared to 63 years in the central and eastern countries, 66 in Cyprus, 70 in Malta and 59 in Turkey
- The health gap between EU-15 and new Member States can largely be explained by disease patterns (namely CVD, injuries and violence, cancer, and alcohol-related diseases) and their underlying risk factors: smoking, diet and alcohol consumption

2.1 Health status in the EU-15

Health status and longevity has improved in all EU-15 Member States for both men and women since the 1970s (Figure 2.1) but small differences are still present across countries. In all fifteen countries, women are expected to live longer than men; the gap is as large as seven years in some countries, such as France, Portugal and Spain. However, there has been a narrowing gender gap in life expectancy among western European countries over the past decade, which can largely be attributed to rising levels of smoking-related mortality among women (Nolte et al. 2005). The difference in life expectancy between the countries with the longest longevity (Italy and Sweden) and those with the lowest (Ireland and Portugal) is about three years.

Figure 2.1 Life expectancy in the EU-15



Source: WHO Health for All 2005.

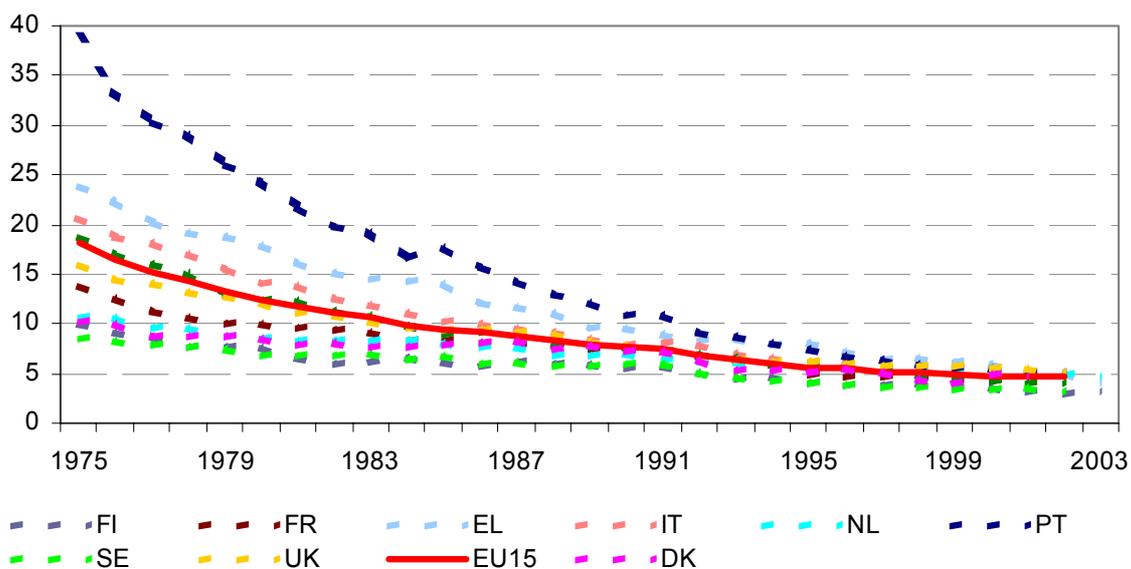
Infant mortality has decreased across the EU-15 in the last 25–30 years because of improvements in living conditions and health care (Figure 2.2). In 1975, infant mortality was as high as 4 deaths per 1000 live births in Portugal and over 2 in Greece and Italy; while at present, infant mortality ranges between 0.3 deaths per live births in Austria and 0.5 in the United Kingdom. Portugal has seen its infant mortality rate reduced by over 90% since 1970, as it went from the country with the highest rate in Europe to one among the lowest.

2.2 Health Status in the new Member States

Among the new Member States, the CEE countries face the greatest health challenges. In contrast to the EU-15, countries in this region experienced stagnating or even increasing

mortality in the 1970s and particularly the 1980s. The political and economic transition in the former communist countries significantly worsened the health of these nations. This disadvantaged position in the east dates back to the late 1960s. Thus, during the last 30 years, the populations of CEE had very various experiences resulting in markedly different health trends than their western neighbours.

Figure 2.2 Infant deaths per 1000 live births in the EU-15



Source: WHO Health for All 2005.

While they represent a diverse group, in general they share some common demographic features. All have levels of life expectancy well below those in western Europe, wider sex differences in life expectancy, and all have seen marked falls in birth rates. This group of countries can be sub-divided into the three Baltic Republics (Estonia, Latvia, and Lithuania) that were part of the Soviet Union until 1991, those that were part of the Soviet bloc in the post-war period; and Slovenia, which was formerly part of Yugoslavia.

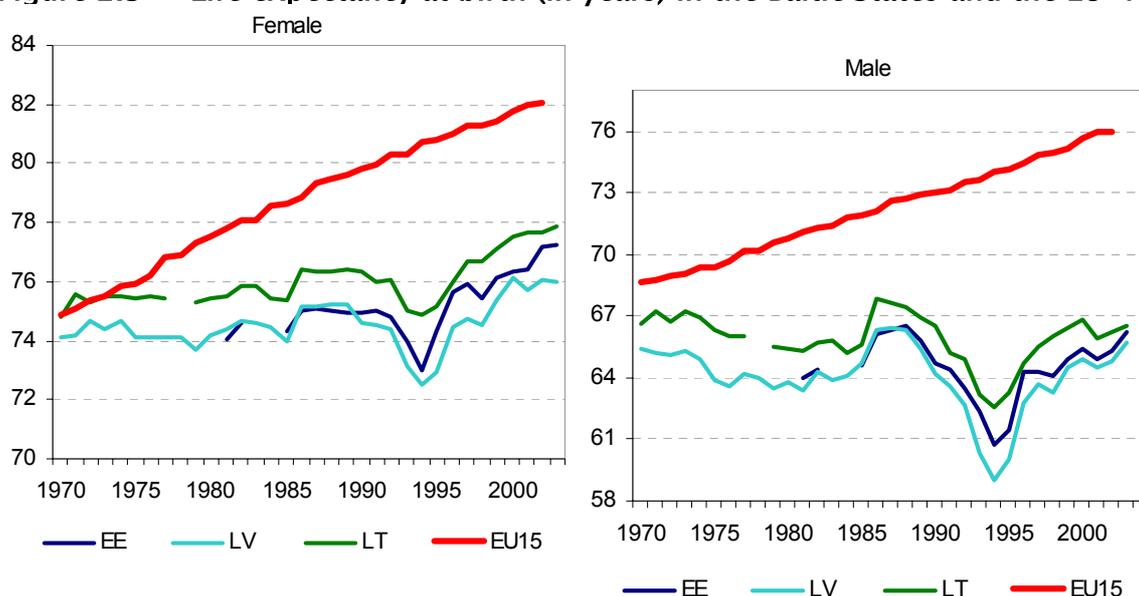
In terms of life expectancy, the trends are quite different between these three subgroups. Most countries experienced a mortality crisis in the early 1990s after the fall of communism (Nolte et al. 2004). In some countries, this worsening of mortality was short-lived and followed by improvements in health, which was rapid in Poland and the Czech Republic, and delayed in Hungary (Bobak et al. 1997). In contrast, in Romania, men experienced a steady deterioration in mortality and women had no improvements (Nolte et al. 2005).

In comparison to other countries in Eastern Europe such as the former Soviet Union countries that are now members of the Commonwealth of Independent States (CIS), the countries of CEE have made remarkable progress. For example, Russia and Ukraine saw an actual decline in the Human Development Index in the 1990s, reflecting an inability to

reduce income and human poverty (Bobak et al. 1997). This decline is also represented in the life expectancy of this region, which is considerably lower than the candidate countries.

Since the mid- 1980s, the three Baltic countries experienced a fluctuating life expectancy that mirrored that of other ex-Soviet countries (e.g. Ukraine) until 1998 when they showed signs of improvement (see Figure 2.3), while the other ex-Soviet states such as Russia, have once again deteriorated (McKee et al. 2004). In Poland, Hungary, the Czech Republic and Slovakia rapid improvements in life expectancy were seen from the early 1990s (see Figure 2.4). Slovenia appears to fall somewhere in between the EU and the other CEE countries.

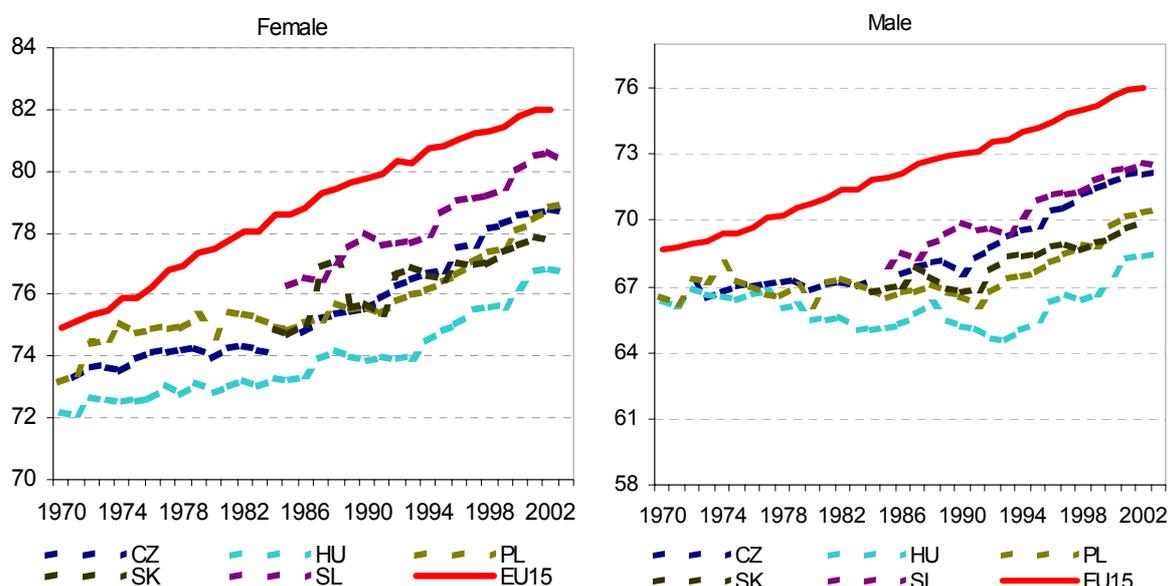
Figure 2.3 Life expectancy at birth (in years) in the Baltic States and the EU-15



Source: WHO Health for All 2005.

Recent health trends among these countries can be better understood by disaggregating mortality figures. When comparing male and female mortality rates, it is apparent that men have been especially vulnerable to the political and economic instability, as they have experienced a significant deterioration in health (McKee et al. 2004). The CEE countries tend to have much wider sex differences in life expectancy than in Western Europe. For instance, the sex difference in Hungary reached 9.5 years in the mid-1990s, with some decline only recently, due in large part to increasing female mortality from smoking.

Figure 2.4 Life expectancy at birth in selected central and eastern European countries and the EU-15

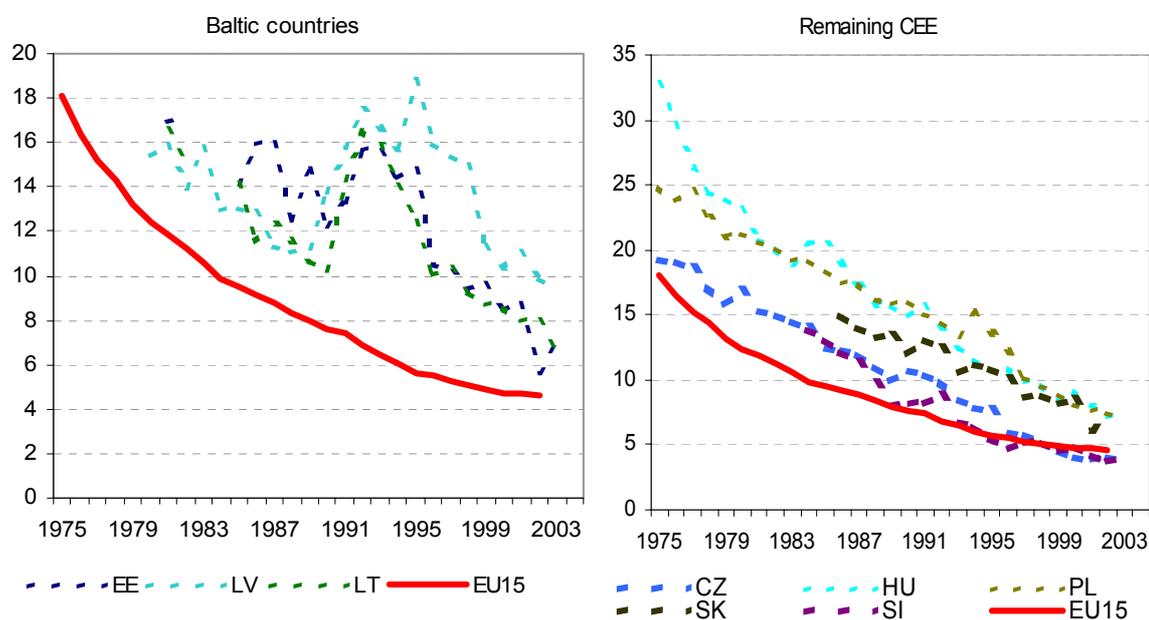


Source: WHO Health for All 2005.

Age-specific mortality rates provide further insight into the source of the health gap between the countries of CEE and Western Europe. Infant and child mortality rates have been falling since the 1980s, and accelerated in the 1990s, in all the new Members States and particularly so in the three Baltic countries and Poland (Figure 2.5). Although the under-5 mortality rate in this region has been consistently higher than in the EU-15 (about twice as high), there are some exceptions, for example the Czech Republic shows lower rates than Portugal.

There was also a decline in old age mortality in most countries either in the early 1990s (e.g. Poland and Czech Republic) or late 1990s (e.g. the Baltic countries); however, they still remain significantly higher than in the Western countries (Nolte et al. 2005). The working-age population has been the worst off, as deaths among men in the 15–64 age group increased steadily throughout the 1980s (Mesle 2002; McKee & Shkolnikov 2001). During this time there was considerable variation among the CEE, with standardized death rates among Hungarian men being about two times higher than among men in Slovenia or Czech Republic (Nolte et al. 2005). Overall, death rates among middle-aged men were about 2.5 times higher in CEE than in Western Europe (McKee et al. 2004).

Figure 2.5 Infant deaths per 1000 live births in central and eastern Europe and the EU-15



Source: WHO Health for All 2005.

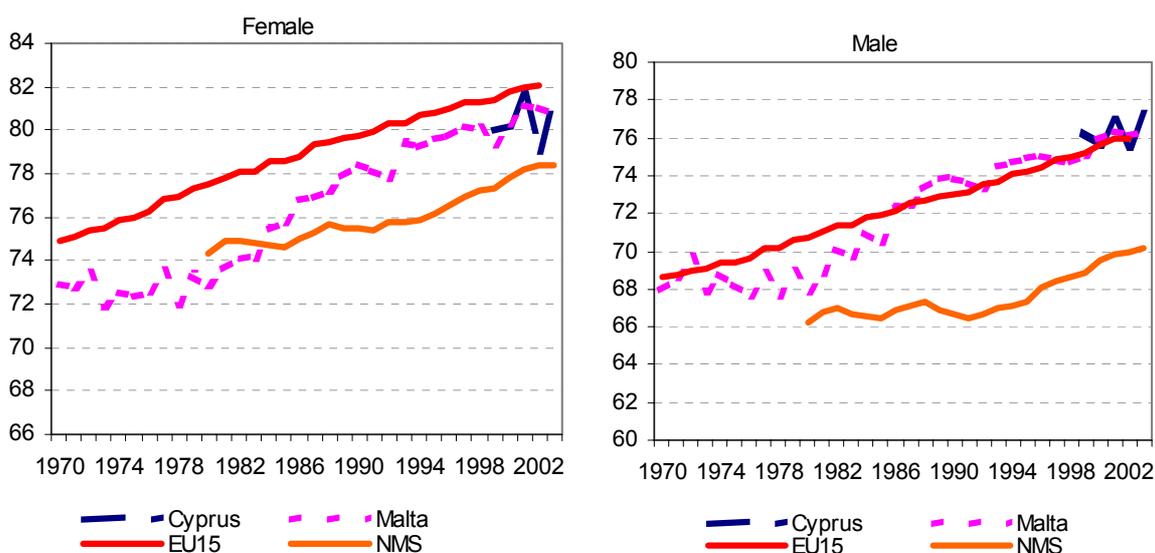
On a positive note, adult male mortality has been improving in most of the countries of CEE from the early 1990s. For instance, while both Poland and Russia experienced increases in adult mortality among young adults throughout the 1980s and early 1990s, this rise was only temporary in Poland. In Poland, death rates have fallen to about 30% lower than they were in 1991. In contrast, among young adults in Russia, mortality remains 60% higher than in 1991 in both men and women, and among older adults (aged 35–64) mortality rates increased by 85% in men and 66% in women from 1991 to 1994, while rates have now reduced only slightly and are still 40–50% higher than they were in 1991 (Nolte et al. 2005).

Reported presence of long-standing illness is also quite high in the countries of CEE compared to the western countries, but it reveals a different gender effect than mortality data. For, in all of the countries of CEE but the Czech Republic, women report greater prevalence of long-standing illness, reaching over 30% of the population in the Baltic countries, Hungary, Poland, Slovakia, and Slovenia (McKee et al. 2004). Thus it appears that when considering morbidity measures, surviving women fare worse than men.

Malta and Cyprus

In both Mediterranean countries health indicators are comparable to the EU-15. Life expectancy at birth is similar to the EU-15 average and considerably higher than the CEE (Figure 2.6).

Figure 2.6 Life expectancy at birth in Malta, Cyprus and the EU-15



Source: WHO Health for All 2005.

2.3 Health status in the Candidate Countries: Bulgaria, Romania and Turkey

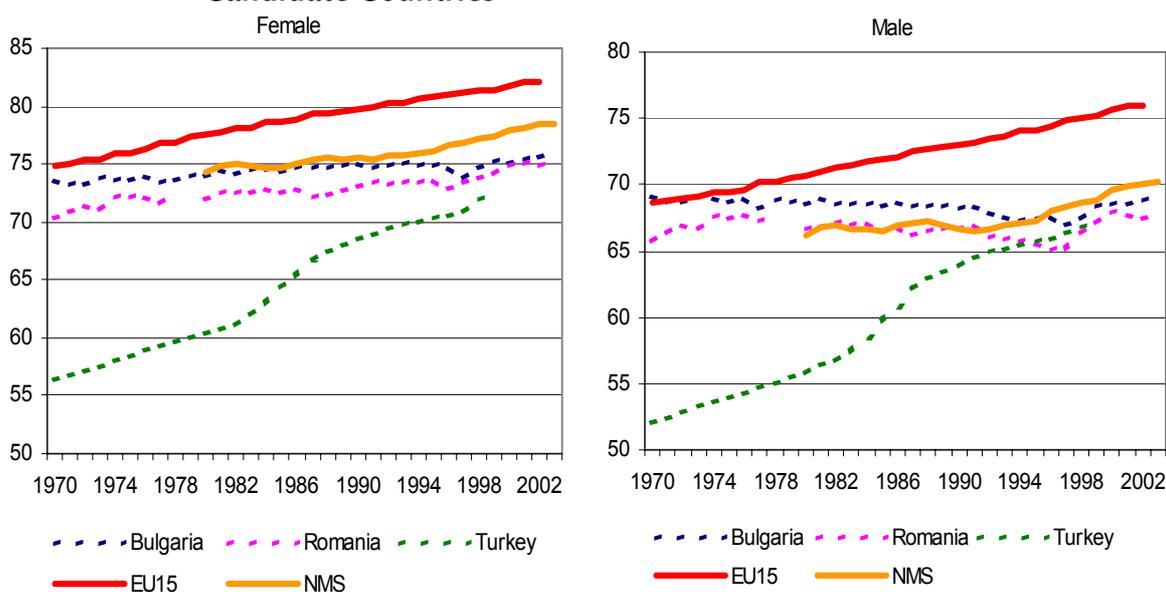
Life expectancy at birth in the three Candidate Countries has been increasing since 1970, and more rapidly since the 1980s although as most countries of the former Soviet Union, Bulgaria and Romania experienced a mortality crisis in the early 1990s. Indeed, the trend in life expectancy in these two countries is similar to that in the new Member States; while Turkey stands alone. In 1970, the average life expectancy for Turkish women was 56 years for women and 52 years for men against 75 and 69 years in the EU-15. In the 1970s and 1980s Turkey experienced a sharp increase in life expectancy and at present the gap with the EU-15 is 10 years for women and 6 years for men (see Figure 2.7).

Although infant mortality has decreased in the last 30 years in all three countries, they still lag behind both the new Member States and the EU-15 (Figure 2.8). The number of infant death per 1000 live births is around 3 to 4 times higher in Bulgaria and Romania than in the EU-15 (2.4) and for Turkey the gap is far larger (9 times higher).

In Turkey, this health disadvantage has been attributed to high levels of cardiovascular disease (Onat 2001; Razum et al. 2000), and high rates of infant and child mortality

(Demographic and Health Survey 1998). The early 1990s were witness to increasing rates of smoking-related cancers; however, since then, Turkey has implemented effective, wide-ranging tobacco-control policies, withstanding efforts by the transnational tobacco industry to subvert this progress (Firat, 1996). Overall, Turkey appears to be facing a dual health burden of elevated levels of communicable disease (accounting for high levels of infant and child mortality) and continually rising levels of non-communicable diseases in adulthood.

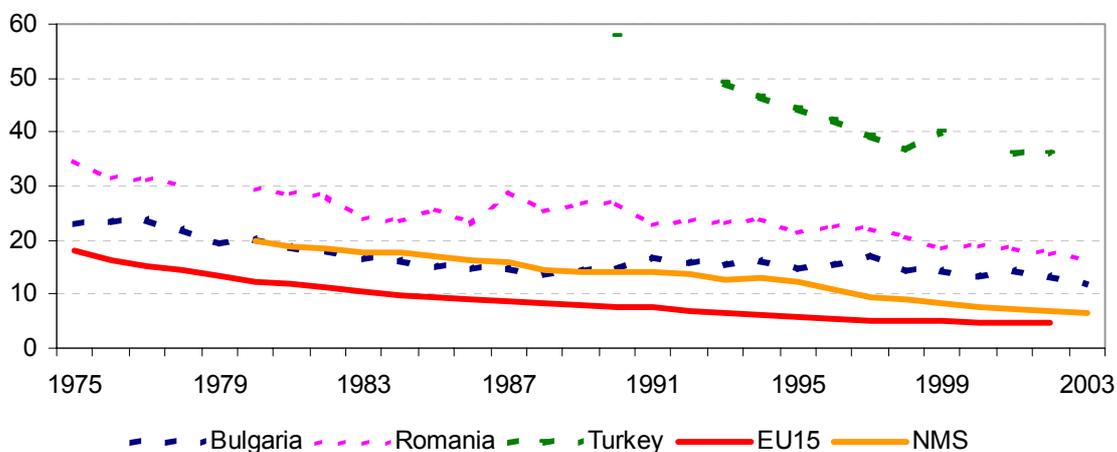
Figure 2.7 Life expectancy in the EU-15, new Member States, and three Candidate Countries



Source: WHO Health for All 2005.

In early 1960s, Romania was comparable in many important respects, including health status, to western European countries. From the 1960s to the 1990s, the health of Romanians has steadily declined. After 1990, a sharp increase in poverty and corresponding decrease in living standards had a deep negative impact on the health of the Romanian population. Like Turkey, cardiovascular disease explains a large part of the recent increase in mortality; an estimated 81% of the increase in all cause mortality rate between 1990 and 2004 was due to the cardiovascular diseases.

Figure 2.8 Infant deaths per 1000 live births in the EU-15, new Member States, Romania and Bulgaria



Source: WHO Health for All 2005.

2.4 Explanations for the health divide

Why does such a significant health divide exist between the EU-15 and countries in central and eastern Europe? There are three potential areas that can be highlighted to offer some explanation: disease patterns and their underlying biological risk factors such as smoking, alcohol consumption and obesity, and the roots of these risk factors. Finally, it is important to examine the extent to which health care services explain the health disadvantage population of the countries in central and Eastern Europe.

Table 2.1 Estimates of healthy life expectancy at birth in Europe

Country	Females	Males
Austria	73.50	69.30
Belgium	73.30	68.90
Bulgaria	66.80	62.50
Croatia	69.30	63.80
Cyprus	68.50	66.70
Czech Republic	70.90	65.90
Denmark	71.10	68.60
Estonia	69.00	59.20
Finland	73.50	68.70
France	74.70	69.30
Germany	74.00	69.60
Greece	72.90	69.10
Hungary	68.20	61.50
Ireland	71.50	68.10
Italy	74.70	70.70
Latvia	67.50	58.00
Lithuania	67.70	58.90
Luxembourg	73.70	69.30
Malta	72.30	69.70
Netherlands	72.60	69.70
Poland	68.50	63.10
Portugal	71.70	66.70
Romania	65.20	61.00
Slovakia	69.40	63.00
Slovenia	72.30	66.60
Spain	75.30	69.90
Sweden	74.80	71.90
Turkey	62.80	61.20
United Kingdom	72.10	69.10
EU average	71.75	66.86
EU-15 average	73.29	69.26
NMS average	69.43	63.26

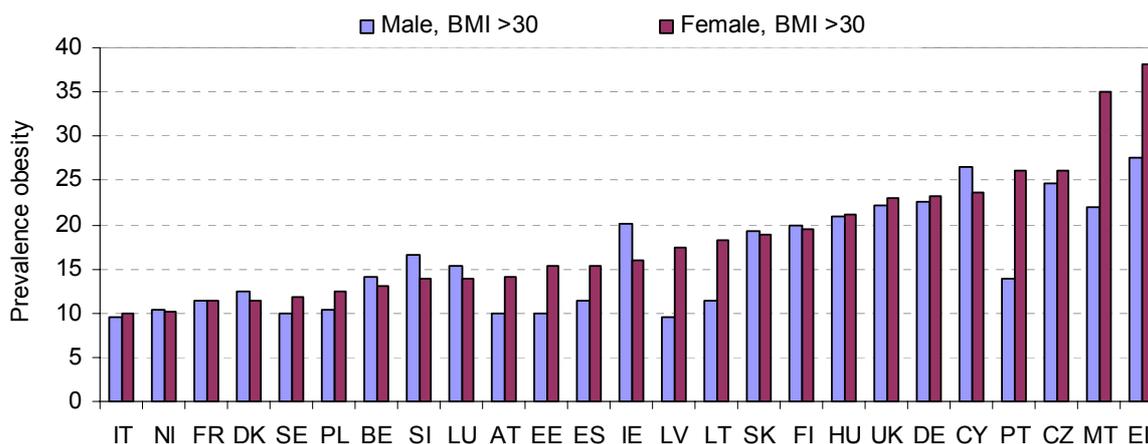
Source: World Health Organization 2005

Measures of healthy life expectancy bring together mortality and morbidity experiences. These data suggest that not only populations of CEE have a shorter life expectancy, but

also shorter expected lifespan in good health than in the west . For, the EU–15 average of years spent in good health is approximately 70.12 years², compared to 62.5 years among the countries of CEE, 66.3 years in Cyprus, 70.4 years in Malta and 58.7 years in Turkey (World Health Organization 2005). Table 2.1 outlines the healthy life expectancy estimates for men and women in the EU and Candidate Countries. The risk factors to disease or mortality are eating habits, physical activity, smoking and alcohol consumption.

In Europe, obesity rates range between 9.5 and 27% among men and reach 35% among women³ (Figure 2.9). Central and eastern European countries have experienced a dramatic increase in obesity rates in the last decade (Spritzer 2004). In Hungary, the obesity rate has doubled since 1989. Four–fifths of Latvian women and Czech men have a body mass index greater than 25, therefore are classified as overweight. Compared to the EU average, the prevalence of obesity, particularly among women, is significantly higher in Greece, Malta and Cyprus. An important cause of obesity has been the arrival of fast food and the decrease in physical activity in these countries where the traditional diet is based on meat, fat and non-vegetables.

Figure 2.9 Obesity rates in European countries



Source: International Obesity Task Force 2005.

Smoking rates are incredibly high in the countries of CEE (Pudule et al. 1999). For example, the prevalence of smoking among the Turkish, Hungarian, Latvian and Bulgarian male and female population is over 65% (See Figure 2.10). In Malta, tobacco consumption was 68% higher than the EU average in 1999 (World Health Organization 2005). Since 2000, expenditure on tobacco, alcohol and other narcotics has been reduced in Malta but has continued to increase in Cyprus. While the policy response to tobacco was initially weak, more recently several countries, particularly Poland, Hungary and the Baltic States, have

² Figures exploring ‘self-assessed health’ across the EU–15 are provided in the Appendix

³ It is important to highlight the difficulties in drawing comparisons across countries in obesity, due to potential differences in measurement and lack of standardised methodology.

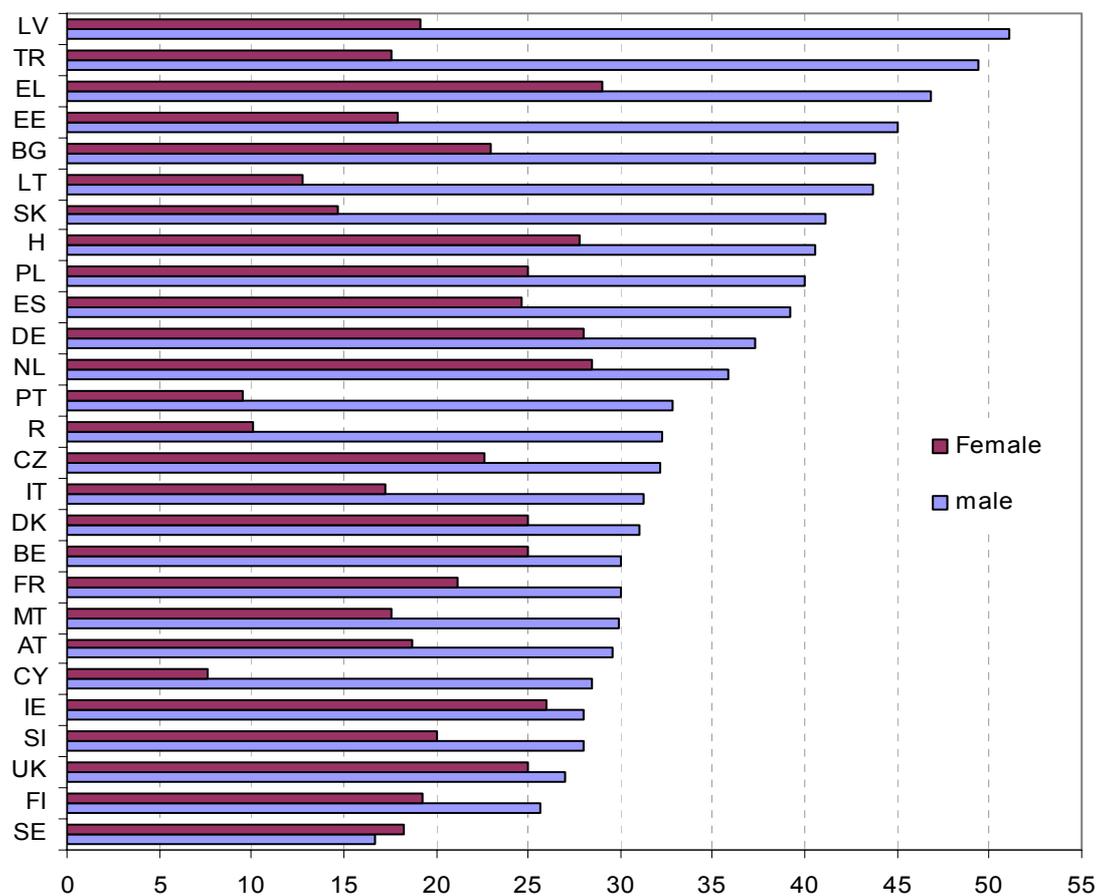
enacted tobacco programmes that are stronger than in many EU countries (Fagerstrom et al. 2001).

Patterns of morbidity and mortality in European countries

The main contributors to differences in health indicators between east and west Europe are injuries and vascular diseases for people below age 60 (Powles et al. 2005). Therefore, in examining the different patterns of diseases and causes of death between the EU-15 and the new Member States in central and Eastern Europe, a few specific conditions are considered: cardiovascular disease, injuries and violence, cancer, and alcohol-related diseases. In addition, it is important to examine patterns of infectious diseases.

Cardiovascular disease (CVD) has been frequently highlighted as playing an important role in the rise and subsequent decline of adult mortality in the countries of CEE (Mesle' 2002; McKee & Shkolnikov 2001; Zatonski & Boyle 1996). In the countries of the former Soviet Union, the burden of CVD accounted for almost one third of the overall burden of disease, as measured by disability-adjusted life years (Nolte et al. 2005). As Figure 2.11 shows, deaths from ischaemic heart diseases among 0-64 year-olds are two times higher in the new Member States (45.17 deaths per 100,000 people), and more than three times higher in the Baltic countries (Estonia: 75.82, and Latvia 90.35 deaths per 100,000) than in the EU-15 (20.47 deaths per 100,000 people).

Figure 2.10 Regular daily smokers in the population (%), age +15, 2003 or latest year available^a



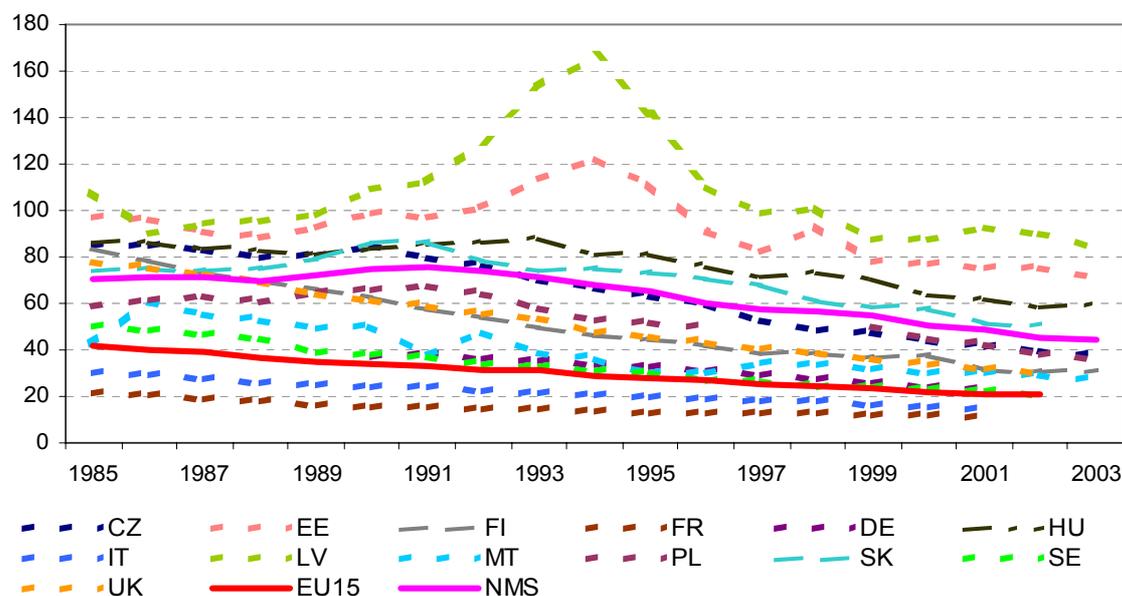
^a Latest year available: 2002 for Belgium, Estonia, Ireland, Italy, Latvia, Lithuania, Malta, Poland and UK; 2001 for Bulgaria, Slovenia and Spain; 2000 for Greece and Romania; 1999 for Portugal; 1997 for Austria and Cyprus.

Source: WHO Health for All 2005.

The 'east-west gap' in mortality rates is also evident when the standardised death rates for diseases of the circulatory system are observed (Figure 2.12). Mortality rates for diseases of the circulatory system are, indeed, over twice as high in the new Member States than in the EU-15, and more than three times higher in Estonia, Hungary and Latvia.

In the countries of the Former Soviet Union, in particular in Baltic countries, the risk of death for ischaemic heart diseases and diseases of the circulatory system increased at the beginning of the 1990s, immediately after the fall of the Communist system to start decreasing again in the middle late 1990s; but large differences are still present between the East and the west. Traditional risk factors such as smoking, diets rich in saturated fats and low in antioxidants, in addition to alcohol (specifically binge drinking) largely account for the elevated levels in CVD in the East compared to the West (Bobak et al. 1997; Britton & McKee 2000; Pomerleau et al. 2001).

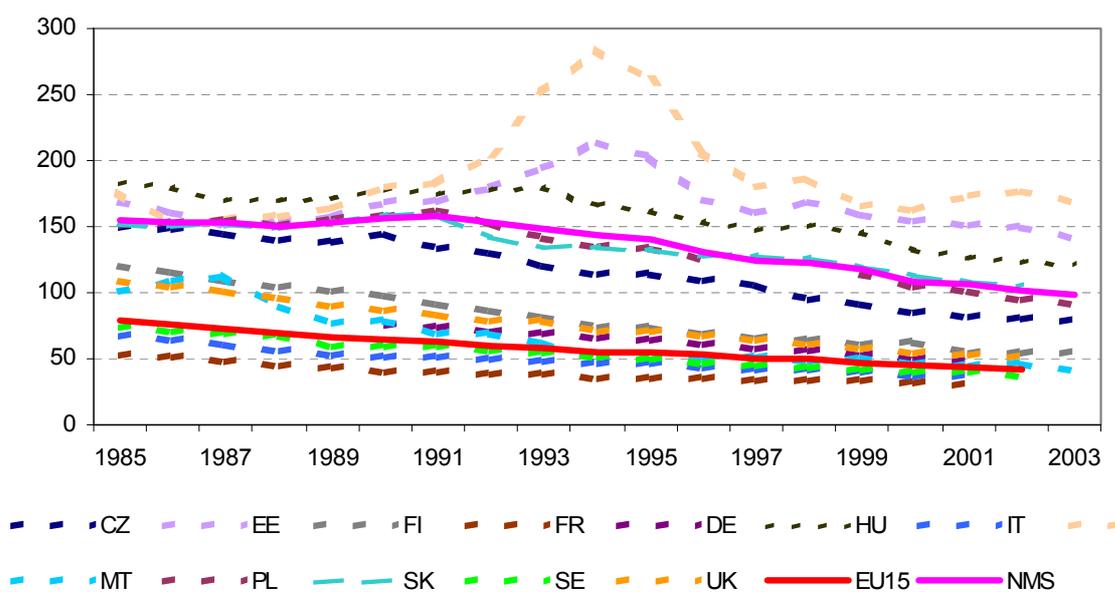
Figure 2.11 SDR, ischemic heart diseases , 0–64 per 100,000



Source: WHO Health for All 2005.

Powles et al. (2005) have identified three leading risk factors for the differences in health indicators. First is the “nutritional/physiological group” that mainly contributes to absolute differences in cardiovascular diseases; second is tobacco; and third is alcohol.

Figure 2.12 SDR, diseases of circulatory system, 0–64 per 1,000,000

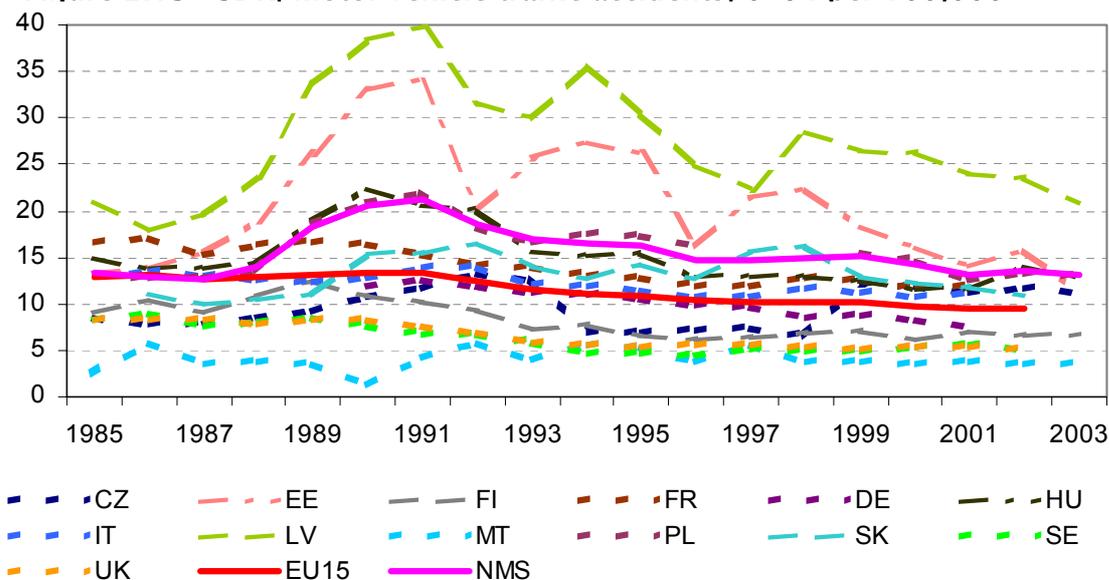


Source: WHO Health for All 2005.

All the countries of new Members States, especially the Baltic States, experienced a significant, although transient, increase in deaths from injuries. Injuries accounted for 20% of the burden of disease in the former Soviet Union, 11% in the rest of CEE, compared to 8% in West Europe (Nolte et al. 2005). Russia, in particular, stands out with death rates from injury among the highest anywhere recorder in the world (Chervyakov et al. 2005). Road traffic accidents, in addition to homicide and suicide, constitute a large part of this increase in deaths from injuries in the new Members States, in particular in Latvia and Estonia (see Figure 2.13). Poor quality roads, lax enforcement of speed limits and alcohol all contribute to the high level of road traffic incidents, with alcohol also playing a significant role in the other 'external' causes of death (McKee et al. 2004).

Large variations are registered also for rates of cancer across Europe (Figure 2.14). In Hungary, cancer incidence is more than 700 per 100,000 inhabitants; in Czech Republic and Denmark is over 600. The lowest rates of cancer are found in Cyprus, Romania and Poland, with less than 300 per 100,000 inhabitants.

Figure 2.13 SDR, motor vehicle traffic accidents, 0–64 per 100,000



Source: WHO Health for All 2005.

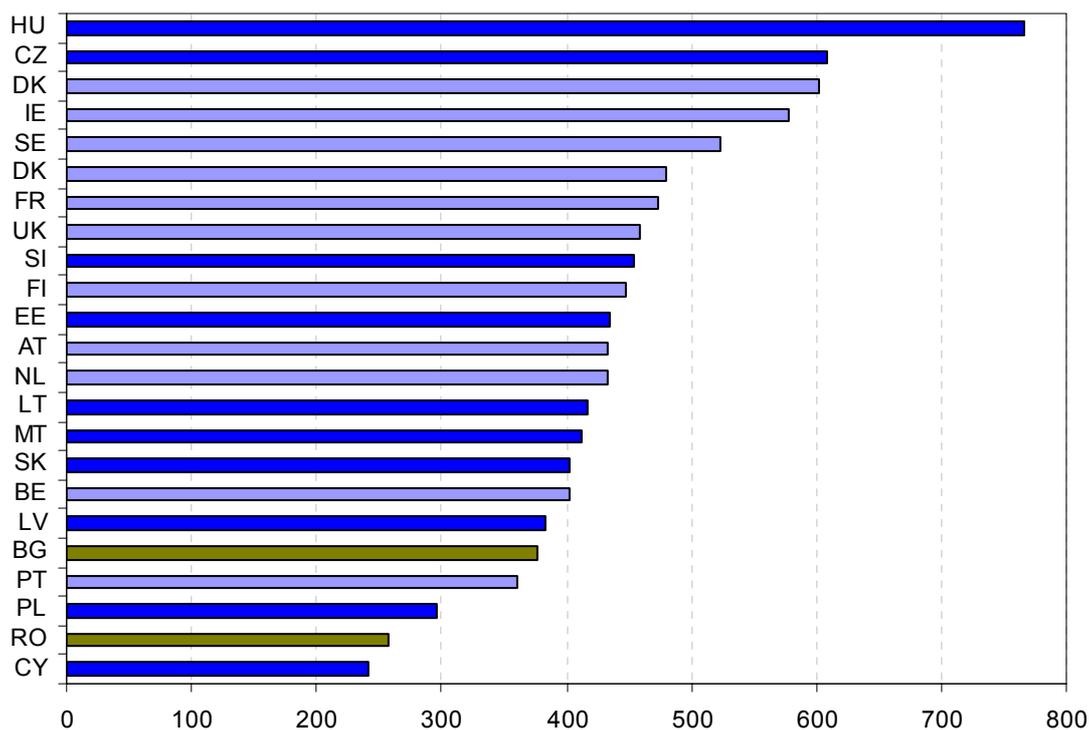
Lung cancer is the most common cancer in Europe, nearly 400,000 new cases per year (Tyczynski et al. 2002). As Figure 2.15 shows, age-standardised incidence rates are markedly higher in the east than in the west. Hungary has the highest rates of male lung cancer in Europe and in the world (Novotny et al. 1999), followed in Europe by Belgium. The lowest rates for men are observed in Sweden and Portugal. For women, the highest rates are registered in Denmark, Hungary and the United Kingdom; while, the lowest incidence rates are found in Spain, Malta and Portugal. Male death rates for lung cancer are now decreasing in most European countries included the new Member States. On the contrary, mortality for lung cancer among women is increasing almost everywhere, but the UK and to some extent Ireland and Denmark (Didkowska et al. 2005). The leading

contributors of lung cancer are the number of cigarettes smoked per day, the degree of inhalation and the initial age of smoking (Tyczynski et al. 2002; Didkowska et al. 2005). The relative risk of developing lung cancer is 20–30 times higher for smokers than for non-smokers.

Cervical cancer is also relatively common among the new Member States, reflecting high rates of sexually transmitted diseases, infrequent use of barrier contraceptives, and ineffective, mostly opportunistic, screening (McKee et al. 2004; Levi et al. 2000).

Infectious diseases were effectively tackled during the Soviet model of monitoring and compulsion, however, the breakdown of control systems in these areas may threaten this success (Markina et al. 2000). Also of increasing concern is the recent rise in sexually transmitted diseases, HIV and tuberculosis, particularly in the Baltic States (Stern 1999). A particular concern is the high rate of drug-resistant disease and the co-existence of HIV and resistant tuberculosis, with no effective policy responses to date (Farmer et al. 1999).

Figure 2.14 Cancer incidence per 100,000, 2003 or latest year available



Source: WHO Health for All 2005.

The underlying factors

It is very likely that the political, social and economic transition in the countries of the Former Soviet Union has greatly affected people’s lives, many of whom experienced rising levels of poverty and economic hardship. Moreover, there is evidence demonstrating that the rise in mortality was greatest in regions that experienced the most rapid pace of

transition, as measured by gains and losses in employment (Walberg et al. 1998), and where measures of social cohesion were weakest (Kennedy et al. 1998; Shkolnikov et al. 2005). The transition was associated with an erosion of social norms, social cohesion and law and order, as reflected in the increase in the murder rate in Russia (Chervyakov et al. 2002; Shkolnikov et al. 2005).

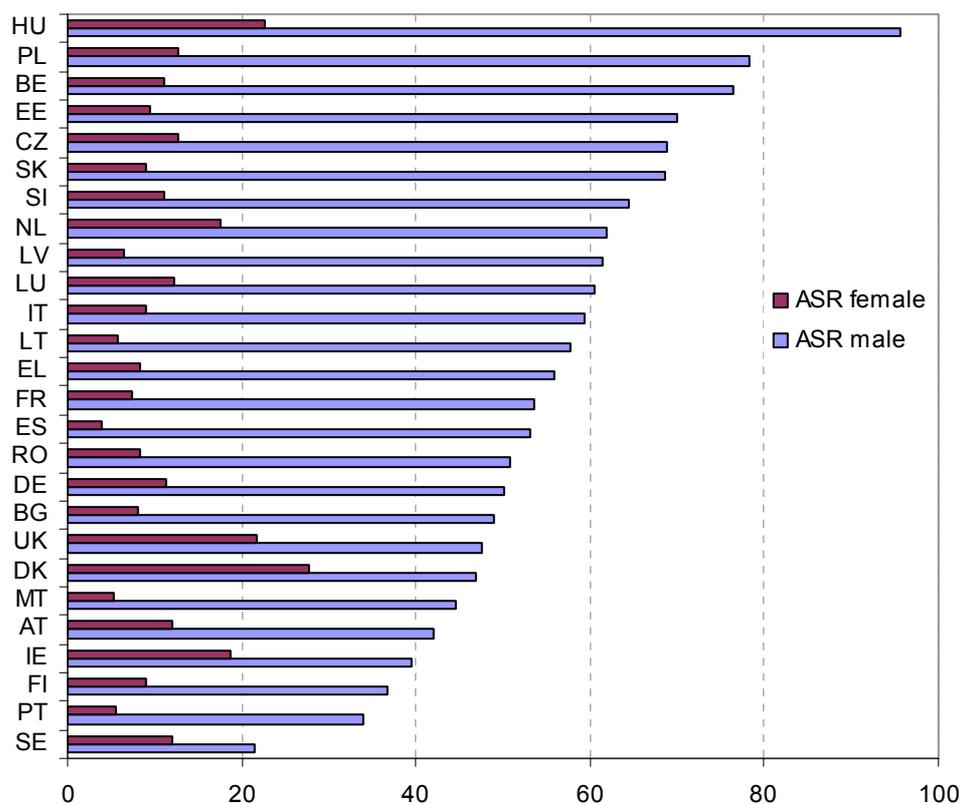
Moreover, psychosocial factors impact directly on individuals' vulnerability or resilience to health threats, in addition to impacting their ability to make healthy choices. Low levels of social support and feelings of lack of control over one's life have been associated with elevated mortality in several transitional countries (Bobak et al. 1997; Bobak et al. 2000; Hajdu et al. 1995; Rose 2000). Feelings of lack of control are also related to poor self-rated health in the CEE countries (Bobak et al. 2000). This relationship has also been shown at a population level, with low levels of perceived control associated with higher levels of total mortality in several transition countries (Pikhart 2001). Also, men with poor education were especially vulnerable to the changes, experiencing much higher levels of mortality compared with higher educated men (Shkolnikov et al. 1998).

Furthermore, a recent study – the LiviCordia study – found that elevated levels of psychosocial stress, job strain, social isolation, poor coping skills, low self-esteem, exhaustion, depression and attenuated cortisol responses to stress were associated with the four-fold difference in mortality from coronary heart disease between 50 year-old men in Vilnius, Lithuania, and Linköping, Sweden (Kristenson and Kucinskiene 2002).

While some vulnerable segments of the population, particularly poorly educated adult men, have been negatively affected by the transition, in general there have been some beneficial effects. For instance, the opening of markets has allowed fresh fruits and vegetables to be available all year round. Also, greater attention to safety and routine maintenance, due to the emergence of an active consumer market, has led to a decline in injuries (Mckee et al. 2004).

Policy changes are also important to consider when seeking explanation for health trends, and are explored further in the next section (*Section 3.0 Avoidable Mortality*). In the Baltic States, changes in mortality rates and disease patterns can be further understood with reference to Gorbachev's anti-alcohol campaign of 1985 (White, 1996). This initially highly effective and wide ranging programme led to an immediate improvement in life expectancy due largely to a decline in cardiovascular disease, injuries, and alcohol-related deaths. In addition, tobacco policies, although strong in Poland, Hungary and the Baltic States, are being challenged by the recently opened borders allowing greater flow of smuggled tobacco products and the targeting of new markets through advertising, affecting young women in particular (Fagerstrom et al. 2001).

Figure 2.15 Age-standardised lung cancer incidence rates / 100,000 in Europe,



Source: Tyczynski et al. 2002.

During the post-transition period, health has been high on the political agenda in most of the CCEE. In Hungary and Romania, for example, the health ministry was awarded to a symbolic minority party (Nolte & McKee 2004). Reforming health care has been the focus of many health ministries in these countries, in particular developing new financing structures. However, response to the important causes of diseases have largely been weak, with the exception of tobacco control in Poland. For instance, there have been few policies put forward to tackle the problem with alcohol consumption.

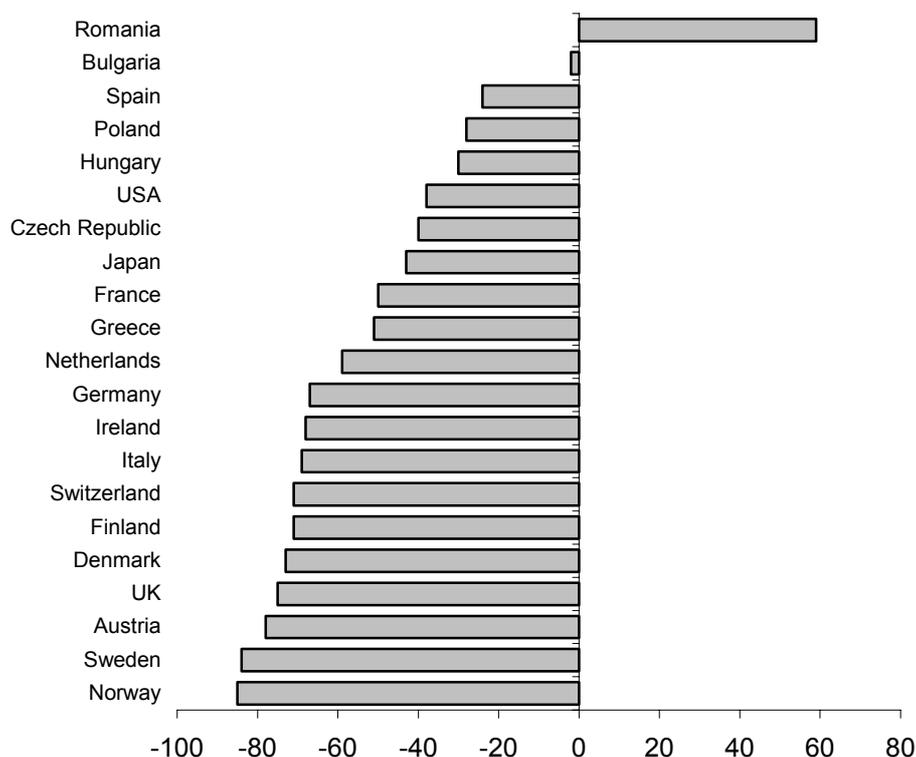
The contribution of health care

Since it is widely agreed that access to timely and effective health care interventions significantly reduces mortality (Mackenbach et al. 1998), it is important to examine the effect of health care on the population health of the countries of CEE. Since 1970, the decline in avoidable mortality has been slower in the east than the west of Europe. Furthermore, about 25% of the difference in mortality rates between east and west Europe has been attributed to inadequacies in medical care (Velkova et al. 1997).

More recently in some countries, there has been evidence suggesting some tangible improvements in outcomes attributed to health care such as improvements in the survival of low birth weight babies and in cancer survival (Nolte et al. 2000; Koupilova' et al. 1998;

Shkolnikov et al. 1999; Becker & Boyle 1997). For instance, in the Czech Republic, there were considerable improvements in birth-weight specific mortality, and by implication, the quality of care (Koupilova' et al. 1998). Improvements have been seen in areas of cancer survival (Levi et al. 2001), particularly testicular cancer, in Bulgaria, Hungary and Poland, and most notably in the Czech Republic (see Figure 2.16).

Figure 2.16 Change in deaths from testicular cancer age 20–44: 1975–9 to 1995–9



Source: Levi et al. 2001

However, in some countries, there have been serious problems with some elements of their health care systems, particularly in sustaining an adequate pharmaceutical supply (e.g. in Hungary and Romania). Another area indicating a breakdown in the delivery of health care services is evidence of mortality among young people with diabetes. For instance, deaths from diabetes at ages under 50 increased about eight-fold in the 1990s in many former Soviet countries. The contribution of health care to changes in mortality is further explored across the EU and CC3 in the *Avoidable Mortality* section which follows.

In addition to the aforementioned difficulties facing the countries of CEE, there are emerging health problems. For, health threats are growing due to increasing social inequalities and ageing populations, largely due to falling fertility rates below replacement level (except in Poland and Slovakia). In addition, despite economic growth among the more successful countries in CEE, there has been growing evidence of increases in income inequalities with associated increases in poverty rates (Cornia et al. 2003). For example, Poland experienced an increase in GDP per capita of 2.4% between 1987/88 and 1993/5 which was accompanied by a 14% rise in poverty (UNDP 2003).

It is clear that the causes for high and fluctuating mortality and health status among the countries of CEE need to be considered within a broad political, social, economic, and biomedical context. The health status of recent years has been marked by significantly higher levels of mortality, particularly among adult males, than the EU-15. This health disadvantage has been attributed to cardiovascular disease, road traffic accidents and other external causes of death, and some cancers. Through further examination of risk factors for these causes of death, the main culprits were identified as smoking, alcohol, diets high in saturated fats and low in antioxidants, and the overall social and economic environment contributing to high levels of stress, poverty, and limited social support. Despite some progress that has been made in several of the countries of CEE, specifically the “advanced reformers” – Czech Republic, Hungary, Poland, Slovakia and Slovenia – they still lag behind the EU-15 standards in almost all health indicators. The recent health gains in certain CEE countries in the EU have led to the emergence of a new ‘mortality gap’ in Europe between Russia and its former CEE satellite countries (Shkolnikov et al. 2005).

References

- Barr, N. (1999). Health and health care in the post Communist countries. *Eurohealth* 4 (6).
- Becker, N., Boyle, P. (1997). Decline in mortality from testicular cancer in West Germany after reunification. *Lancet* 350:744.
- Bobak, M., Skodova, Z., Pisa Z., Poledne, R. and Marmot, M. (1997). Political changes and trends in cardiovascular risk factor in the Czech Republic, 1985–92. *J Epidemiol Community Health* 51, 272–7.
- Bobak, M., Pikhart, H., Hertzman C., Rose, R., Marmot, M. (2000). Socioeconomic factors, material inequalities, and perceived control in self-rated health: cross-sectional data from seven post-communist countries. *Soc Sci Med* 51: 1343– 1350.
- Britton, A., McKee, M. (2000) The relationship between alcohol and cardiovascular disease in Eastern Europe: explaining the paradox. *J Epidemiol Community Health* 54:328–32.
- Chervyakov, V.V., Shkolnikov, V.M., Pridemore, W.A., McKee, M. (2002). The changing nature of murder in Russia. *Soc Sci Med* 55:1713–24.
- Cornia, G.A., Addison, T., Kiiski, S. (2003). Income distribution changes and their impact in the post-World War II period. Discuss paper 2003/28. Helsinki: World Institute for Development Economics Research.
- Demographic and Health Survey (DHS) 1998
<http://www.hips.hacettepe.edu.tr/english/1998turkishsurvey1.htm#Tables>
- Didkowska, J., Manczuk, M., McNeil, A., Powles, J., Zatonski, W. (2005). Lung cancer mortality at age 35–54 in the European union: ecological study of evolving tobacco epidemics. *BMJ* 331: 189–191.
- Fagerstrom, K., Boyle, P., Kunze, M. and Zatonski, W. (2001). The anti-smoking climate in EU countries and Poland. *Lung Cancer* 32: 1–5.
- Farmer, P. E., Kononets, A. S., Borisov, S. E., et al. (1999). Recrudescence tuberculosis in the Russian Federation. In P. E. Farmer, L. B. Reichman and M. D. Iseman (eds) *The global impact of drug resistant tuberculosis*. Boston MA: Harvard Medical School/ Open Society Institute.
- Firat, D. (1996) Tobacco and cancer in Turkey. *J Environ Pathol Toxicol Oncol*, 15: 155–60.
- Hajdu, P., McKee, M., Bojan, F. (1995) Changes in premature mortality differentials by marital status in Hungary and in England and Wales. *Eur J Public Health* 5:259–64.
- Kennedy, B. P., Kawachi, I. and Brainerd, E. (1998). The role of social capital in the Russian mortality crisis. *World Development* 26, 2029–43.
- Kristenson, M., Kucinskiene, Z. (2002) Possible causes of differences in coronary heart disease mortality between Lithuania and Sweden: the LiVicordia Study. In G.Weidner, M.Kopp, M.Kristenson ed. *Heart Disease: Environment, Stress, and Gender*. Amsterdam, IOS Press, pp. 328–340.
- Koupilová, I., McKee, M., Holčík, J. (1998). Neonatal mortality in the Czech Republic during the transition. *Health Policy* 46:43–52.
- Levi, F., Lucchini, F., Negri, E., Franceschi, S. and la Vecchia, C. (2000). Cervical cancer mortality in young women in Europe: patterns and trends. *Eur J Cancer* 36: 2266–71.

- Levi, F., La Vecchia, C., Boyle, P., Lucchini, F. and Negri, E. (2001). Western and eastern European trends in testicular cancer mortality. *Lancet* 357, 1853–4.
- Mackenbach, J. P., Looman, C. W. N., Kunst, A. E., Habbema, J. D. F. and van der Maas, P. J. (1998). Post–1950 mortality trends and medical care: gains in life expectancy due to declines in mortality from conditions amenable to medical intervention in The Netherlands. *Soc Sci Med* 27: 889–9.
- Markina, S.S., Maksimova, N.M., Vitek, C.R., Bogatyreva, E.Y. and Monisov, A.A. (2000). Diphtheria in the Russian Federation in the 1990s. *J Infect Dis* 181(Suppl 1): S27–34.
- McKee, M., Adany, R., MacLehose, L. (2004). Health status and trends in candidate countries. In M. McKee, L. MacLehose and E. Nolte (Eds.) *Health Policy and European enlargement. Copenhagen*. European Observatory on Health Systems and Polices.
- McKee, M., Shkolnikov, V. (2001). Understanding the toll of premature death among men in eastern Europe. *BMJ* 323:1051–5.
- Meslé, F. (2002). Mortality in eastern Europe and the former Soviet Union: long–term trends and recent upturns. Paper presented at IUSSP/MPIDR Workshop “Determinants of diverging trends in mortality”, Rostock, Germany.
- Nolte, E., Hort, A., Koupilová, I., McKee, M. (2000). Trends in neonatal and postneonatal mortality in the eastern and western parts of Germany after unification. *J Epidemiol Comm Health* 54:84–90.
- Nolte, E., McKee, M., Gilmore, A. (2005). Morbidity and mortality in transition countries of Europe. In Macura M, MacDonald A, Haug W (eds) *The new demographic regime. Population challenges and policy responses*. Geneva: United Nations Economic Commission for Europe: 153–176.
- Novotny, T., Jha, P., Nguyen, S., Huffman, S. (2001). Tobacco control in the former Socialist economies of Europe and Central Asia. *Eurohealth* 4 (6), 1998/1999
- Onat, A. (2001). Risk factors and cardiovascular disease in Turkey. *Atherosclerosis*, 156, 1–10.
- Pikhart, H. (2001). *Social and Psychosocial Determinants of Self-rated Health in Central and Eastern Europe*. Boston: Kluwer Academic Publishers.
- Pomerleau, J., McKee, M., Robertson, A., Kadziauskiene, K., Abaravicius, A., Vaask, S. (2001). Macronutrient and food intake in the Baltic republics. *Eur J Clin Nut*, 55:200–7.
- Powles, J.W., Zatonski, W., Hoorn, S.V., and Ezzati, M. (2005). The contribution of leading diseases and risk factors to excess losses of healthy life in eastern Europe: burden of disease study. *BMC Public Health* 5: 116.
- Pudule, I., Grinberga, D., Kadziauskiene, K., Abaravicius, A., Vaask, S., Robertson, A., McKee, M. (1999). Patterns of smoking in the Baltic Republics. *J Epidemiol Comm Health* 53:277–83.
- Razum, O., Akgun, S. and Tezcan, S. (2000). Cardiovascular mortality patterns in Turkey: what is the evidence? *Soz Praventivmed*, 45, 46–51.
- Rose, R. (2000). How much does social capital add to individual health? A survey study of Russians. *Soc Sci Med*, 51: 1421–35.
- Shkolnikov, V.M., Leon, D., Adamets, S., Andreev, E., Deev, A. (1998). Educational level and adult mortality in Russia: an analysis of routine data 1979 to 1994. *Soc Sci Med* 47:357–69.

- Shkolnikov, V.M., McKee, M., Vallin, J., Aksel, E., Leon, D., Chenet, L., Meslé, F. (1999). Cancer mortality in Russia and Ukraine: validity, competing risks, and cohort effects. *Int J Epidemiol* 28:19–29.
- Shkolnikov, V.M., Andreev, E., Leon, D., McKee, M., Meslé, F., Vallin, J. (2005). *Mortality Reversal in Russia: the story so far*. Max Planck Institute for Demographic Research.
- Spritzer, D. A. (2004). Obesity epidemic migrates east. *CMAJ* 171 (10).
- Stern, V. (1999). Sentenced to die. the problem of TB in prisons in Eastern Europe and central Asia. London: International Centre for Prison Studies, Kings College London.
- Tyczynski, J.E., Bray, F., Parkin, D.M. (2002). Lung cancer in Europe. European Network of Cancer Registries (ENCR); *International Agency for Research on Cancer* Vol.1.
- Velkova, A., Wolleswinkel–van den Bosch, J. H. and Mackenbach, J. P. (1997). The east–west life expectancy gap: Differences in mortality from conditions amenable to medical intervention. *Int J Epidemiol* 26: 75–84.
- Walberg, P., McKee, M., Shkolnikov, V., Chenet, L. and Leon, D. A. (1998). Economic change, crime, and mortality crisis in Russia: regional analysis. *BMJ* 317, 312–318.
- White, S. (1996). *Russia goes dry*. Cambridge: Cambridge University Press.
- World Health Organization. Tobacco or Health Programme. Tobacco or health: a global status report. Country profiles by region.
<http://www.cdc.gov/tobacco/who/cyprus.htm>
- World Health Organization Regional Office for Europe. Health for All database. Copenhagen: WHO Regional Office for Europe, 2005.
- UNDP (2003) Human Development Report 2003. United National Development Programme, New York/Oxford: Oxford University Press.
- Zatoński, W.A., Boyle, P. (1996). Health transformations in Poland after 1988. *J Epidemiol Biostat* 1:183–7.
- Zatonski, W., Smans, M., Tyczynski, J. and Boyle, P. (1996). Atlas of Cancer Mortality in Central Europe. *IARC Scientific Publications* No. 134. Lyon, France, International Agency for Research on Cancer.

3. AVOIDABLE MORTALITY

Having reviewed the health trends in the EU, it is important to better understand to what extent the health system contributes to the observed changes within and variations between countries' health status. This section draws on a recent report for the Institut des Sciences de la Santé (Newey et al. 2003).

Avoidable mortality is a concept that was developed by Rutstein and colleagues in the 1970s (Rutstein et al. 1976). Originally intended to provide a measure of the quality of medical care, it refers to death from certain causes that should be avoided in the presence of timely and effective medical care.

Analyses of avoidable mortality are essentially based on a list of selected disease groups that are considered to be effectively treatable or preventable by health care services. Recently, work has focused on differentiating the causes that are responsive to medical intervention through secondary prevention and treatment ('treatable conditions'), and those responsive to interventions that are usually outside the direct control of the health services through inter-sectoral health policies ('preventable' conditions).

Key Points:

- Avoidable mortality refers to death from certain causes that should be avoided in the presence of timely and effective medical care.
- During the 1970s and 1980s, avoidable mortality accounted for between a quarter and a third of the gap in life expectancy between the east and west of Europe
- Since the 1990s, the pattern of avoidable mortality (both treatable and preventable) has been less clear.
- Romania and Bulgaria have the highest level of avoidable mortality among the countries analysed, accounting for almost half of total mortality in men in the former; therefore it appears substantial improvements to population health can be made by addressing the health system
- While improvements were made in some countries (e.g. the Czech Republic, Hungary and Slovenia, and, to lesser extent, Poland), others have shown little (Latvia, Lithuania, Bulgaria) or no improvement at all (Romania, especially among men)

This section systematically explores variations in mortality that may be considered to be 'treatable' or 'preventable' in the countries of the enlarged EU, and Candidate Countries over the 1990s.

This analysis uses the refined concept of avoidable mortality, separating treatable conditions from preventable conditions. The 'avoidable' conditions, along with age limits,

are shown in the appendix. Ischaemic heart disease (IHD) was not assigned to either category, and treated separately as (1) the precise contribution of medical care to reductions in deaths from this condition is unresolved (Tunstall et al. 2000), (2) IHD may be understood as an indicator of health care but also of health policy, and (3) the large number of deaths involved is likely to conceal the impact of medical care on diseases other than IHD.

The mortality data upon which this study is based were extracted from the World Health Organization (WHO) mortality files for the period 1990–2002. Levels and trends in avoidable mortality are examined by calculating age-standardised death rates with direct standardisation to the European standard population. This analysis is restricted to the larger countries of the EU, thus excluding Malta and Luxembourg, and also limited to those with sufficient data for the time period, thus excluding Cyprus, Turkey, Belgium, Slovakia, Denmark and Greece.

3.1 Cross-sectional analysis

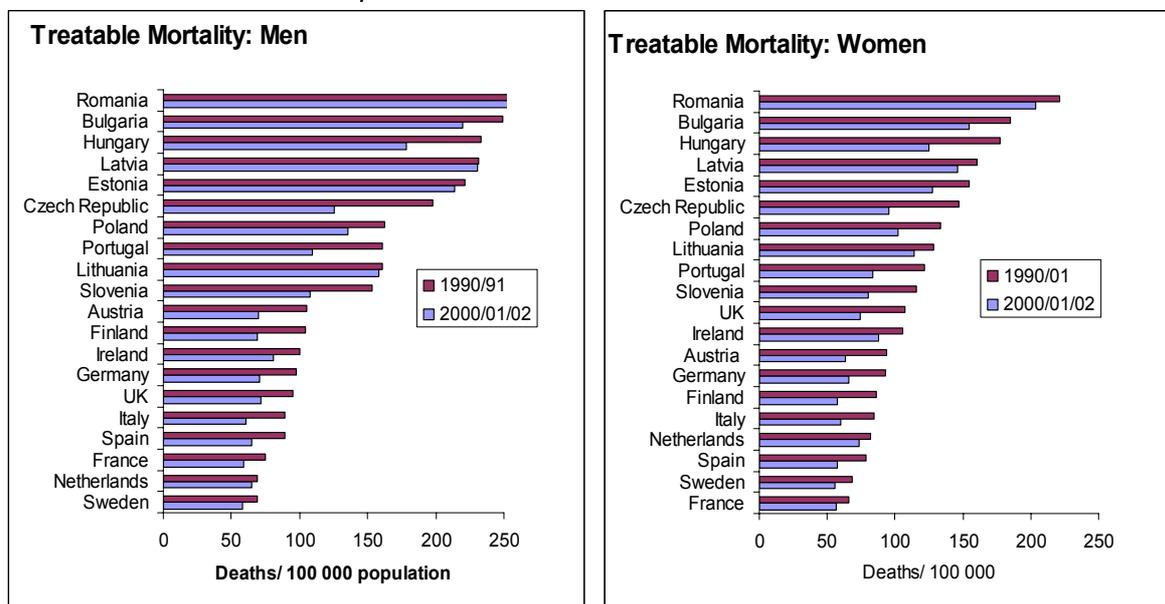
This section examines age-standardised rates from treatable and preventable causes and from IHD in the EU and the candidate countries Bulgaria and Romania in 1990/91 and 2000/02.

Treatable mortality

As shown in Figure 3.1, treatable mortality was highest in central and eastern European countries (particularly Romania, Bulgaria and Hungary) in both 1990/91 and 2000/02, with 260 and 221 deaths/ 100 000 population for Romanian men and women respectively in 1990/91. Portugal is the only EU 15 country to display similarly high levels. Levels were lowest in France (women) and Sweden (men). All countries, except Romania (men), experienced declines in treatable mortality during the 1990s, particularly Portugal, Austria and Finland as well as new EU member (in Czech Republic rates declined by around one-third). Comparatively less progress was made in the Baltic States Latvia, and Lithuania, declining by only 0.4% and 1% from men respectively, and 9% and 11% for women over the time period.

In the context of all cause mortality, in 1990/91, treatable mortality accounted for between 13% (Netherlands) and 30% (Bulgaria) of mortality under 75 in men and 26% (Sweden) and 44% (Romania) in women. These relative proportions changed only little over time for both men and women.

Figure 3.1 Age-standardised death rates of treatable mortality in 18 EU member states and the candidate countries Bulgaria and Romania, 1990/91 and 2000/02

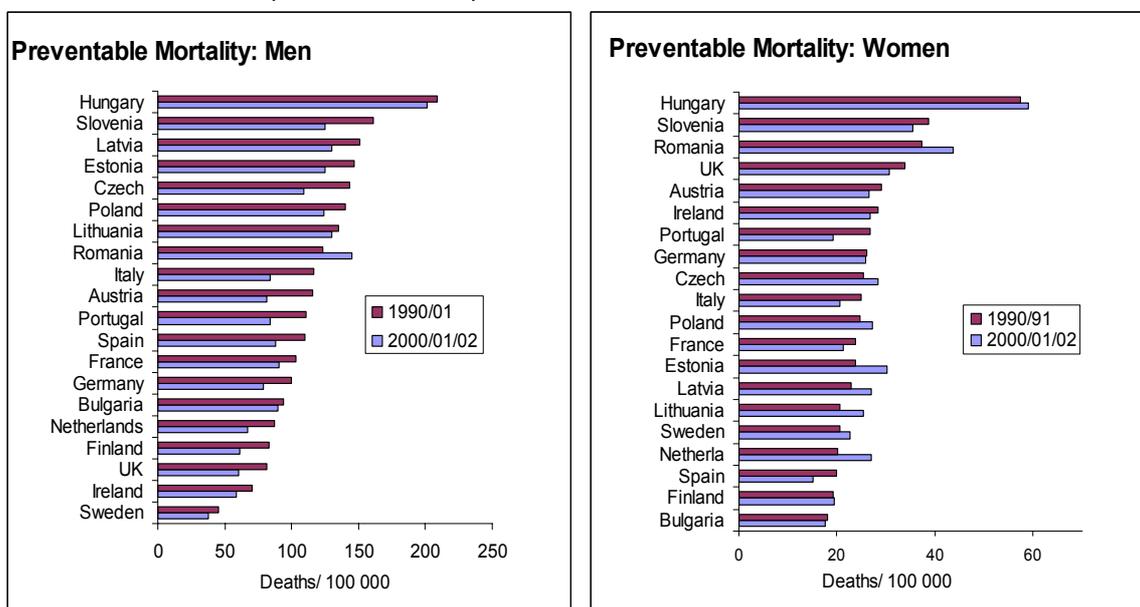


Source: Newey et al. 2003

Preventable mortality

Turning to preventable mortality, one obvious feature is the substantial gap between men and women in all countries, with death rates among men at least twice those of women (Figure 3.2). This gender-gap in preventable mortality is most pronounced in the new Member States of central and eastern Europe, which also show the highest absolute values, especially for Hungarian men at 209 deaths/ 100 000 compared to only 46/ 100 000 in their Swedish counterparts. For women, death rates were again highest in Hungary (57/ 100 000), followed at some distance by Slovenia and Romania, as well as the United Kingdom (34/ 100 000).

Figure 3.2 Age-standardised death rates of preventable mortality in 18 EU member states and the candidate countries Bulgaria and Romania, 1990/91 and 2000/02



Source: Newey et al. 2003

Unlike the situation with treatable causes, with the exception of Romania, men have consistently seen declines in preventable mortality whilst women have not. The declines among men were most prominent in Italy, Austria, Portugal, Finland, the UK and, among the new member states, Czech Republic and Slovenia at over 20%. Preventable mortality rose among women in all new member states (except Slovenia) and Romania. Among the EU-15, most countries experienced declines in preventable mortality, especially those in the Mediterranean region where rates fell by around 20–30%, whilst in both Sweden and the Netherlands preventable mortality increased by 10% and 33% respectively.

As a result of these diverse changes, by 2000/2002, levels of preventable mortality among women were lowest in Spain and Portugal, as well as Bulgaria, at less than 18/100 000. For men, the new member states and Romania continued to show the highest levels of preventable mortality, where in 2000/02 the majority of rates were above 120/100 000.

Once again focussing on these figures in the context of all-cause mortality, deaths from preventable causes accounted for between 10% (Sweden) and 21% (Italy) of all deaths for men and 4% (Bulgaria) and 11% (Hungary) for women. While for men the share remained fairly stable, it increased for women in all countries except Spain and Portugal, to over 10% in most EU 15 countries in 2000/02, with several new member states rapidly approaching.

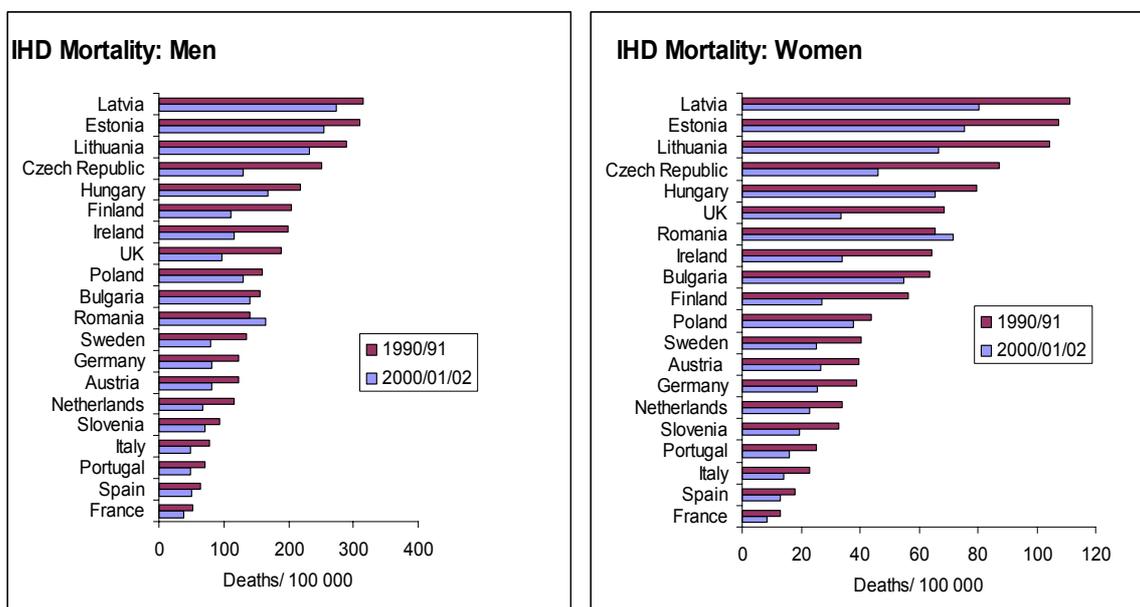
IHD

Turning now to ischaemic heart disease (IHD), Figure 3.3 illustrates how in 1990/91 standardised death rates were the highest in the Baltic States. This was the case for both

men and women (men: 280–310/100 000; women: 105–115/100 000). High levels were also seen in the Czech Republic and Hungary, and among the EU-15 in the UK, Ireland and Finland. The rates were lowest in France and the Mediterranean countries, closely followed by Slovenia. While this is again observed for both men and women, it is important to note that absolute levels among men exceed those in women. As with treatable conditions, all countries experienced declines in IHD mortality during the 1990s, again with the exception of Romania where levels increased by about 10–20% in women and men, to 72/100 000 and 164/100 000, respectively (Tables 1 and 2). Particularly large declines were seen in the Czech Republic, where age-standardised death rates almost halved in both men and women, to levels that are now fairly similar to those seen in Poland. from 252/100 000 in 1990/91 to 129/100 000 in 2000/02 in men and 87/100 000 to 46/100 000 in women.

Similar large improvements were seen in the UK, Ireland and Finland, where rates fell to between 96/100 000 (UK) and 115/100 000 (Ireland) in men and 27/100 000 (Finland) and 34/100 000 (Ireland) in women. Elsewhere, IHD mortality fell by about one-fifth to one-third; the only exceptions were Bulgaria, Latvia (men) and Poland (women), where there were improvements of just over 10%.

Figure 3.3 Age-standardised death rates of IHD mortality in 18 EU member states and the candidate countries Bulgaria and Romania, 1990/91 and 2000/02



Source: Newey et al. 2003

3.2 Analysis of trends in selected countries

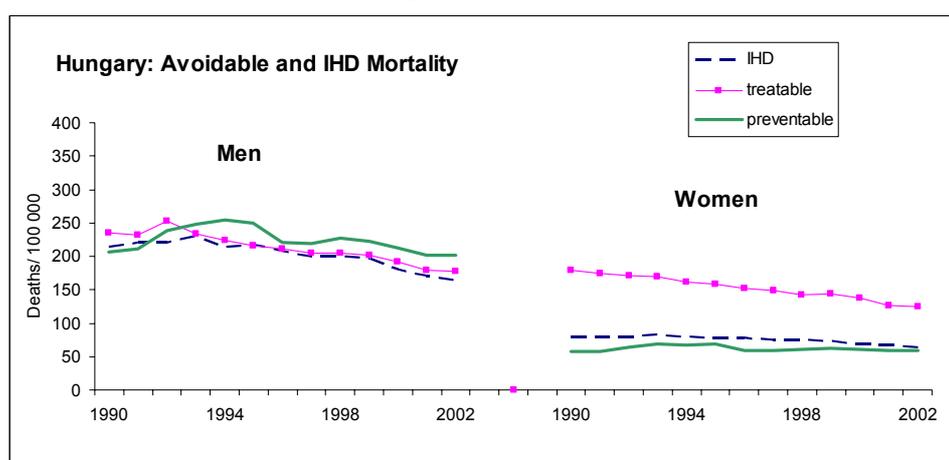
This section examines more specifically the pattern of mortality treatable and preventable causes, and from IHD in the 1990s in seven countries: Hungary, Lithuania, Poland, Slovenia and Romania, with Sweden and Portugal included for comparison.

Hungary

Figure 3.4 illustrates how, among men, following an initial rise in the early 1990s, mortality from preventable causes and IHD fell to levels that were below those seen in 1990, particularly so for IHD rates, which in 2002 were 77% of the 1990 rate. In contrast, treatable mortality fell steadily during the 1990s, as in Sweden, by about 23% over the time period. As a result the gap in treatable mortality between the two countries remained similar, with rates in Hungary exceeding those in Sweden by a factor of 3.5 (see Figure 3.9 for Swedish trends). For preventable conditions however, the gap widened so that in 2002 rates were about 6 times higher in Hungary, reflecting the unprecedented high death rates from both lung cancer and liver cirrhosis.

Women also experienced sustained improvements in mortality from treatable conditions, falling to 70% of the 1990-level by 2002. This total relative change was larger than for Swedish women, causing the mortality gap to narrow somewhat, although in 2002 the absolute level in Hungary was still around 2.5 times that of Sweden. It is noteworthy that overall levels of treatable mortality in Hungary were about twice as high as the level of IHD and preventable mortality for women, but similar for men. As with men, however, IHD mortality among women fell, whilst there was a small increase from preventable conditions.

Figure 3.4 Trends in age-standardised rates of treatable, preventable and IHD mortality in Hungary, 1990– 2002.

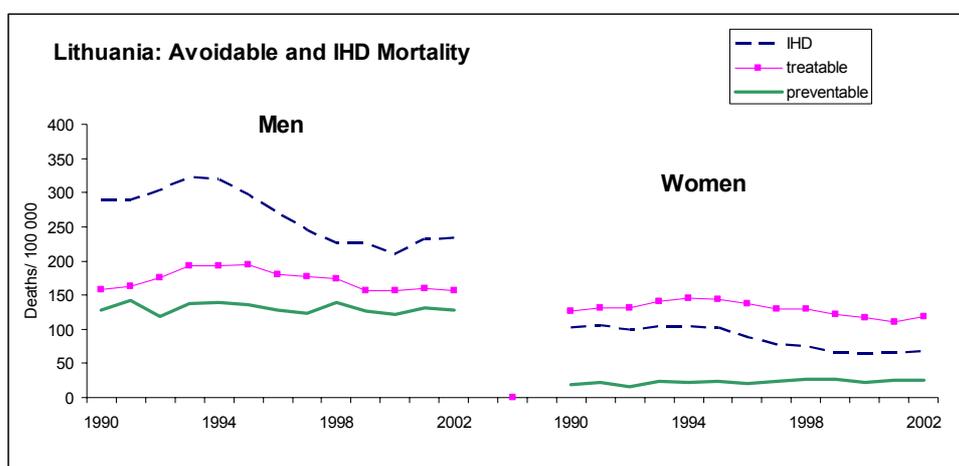


Source: Newey et al. 2003

Lithuania

The pattern observed in Lithuania is very different from that of Hungary, with large fluctuations in all cause and IHD mortality in the mid-1990s, particularly among men (Figure 3.5). In a further contrast to Hungary, male mortality from preventable conditions changed little during the 1990s. Treatable mortality showed an increase until the mid-1990s, and then declined to levels similar to those in 1990 (at 157/100 000). The net result of these changes is that avoidable mortality among Lithuanian men in 2002 was almost identical to the 1990 level, so widening the gap with Swedish men who experienced a steady improvement over the same period, resulting in rates for Lithuanian men exceeding those in Sweden by more than three times.

Figure 3.5 Trends in age-standardised rates of treatable, preventable and IHD mortality in Lithuania, 1990– 2002.



Source: Newey et al. 2003

Like Lithuanian men, women also experienced fluctuations in all-cause and IHD mortality, although death rates were about three times lower than men for IHD and 2.5 times lower for all causes. For treatable mortality, as with men, following an initial rise until the mid-1990s, rates fell steadily, reaching levels just slightly lower than the 1990 rate (135/100 000 in 2002). The rate of mortality from preventable conditions was low among Lithuanian women in the 1990, but it experienced a steady increase and in 2002 it reached the rate of 24/ 100 000, that is a level similar to that of Swedish women. For avoidable mortality overall, the gap between Swedish and Lithuanian women increased, largely due to the greater increase in preventable mortality amongst Lithuanian women than their Swedish counterparts.

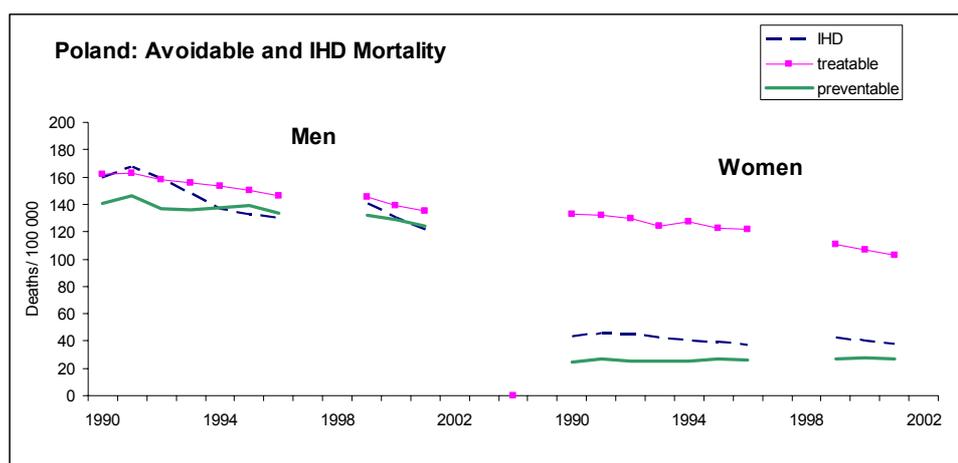
Poland

In Poland the trends from 1990–2002 are very similar to that seen in Hungary, for both men and women, albeit at somewhat lower levels (Figure 3.6). However, while Poland also experienced an initial increase in mortality from preventable conditions and IHD, this worsening was short-lived and followed by improvements from 1991 onwards. Thus,

among men, preventable and IHD mortality fell to levels that were lower than those seen in 1990, in case of IHD substantially so, to 75% of the 1990 rate. For preventable mortality, the corresponding figure was 88% of the 1990 rate. Mortality from treatable conditions also fell steadily throughout the 1990s, to 136/100 000 in 2001, although the relative change was smaller than among Swedish men, thus causing the mortality gap with Sweden to widen somewhat, with absolute levels about 2.5 times higher in Sweden.

As in Hungary, Polish women also experienced sustained improvements in mortality from treatable conditions, falling to about 75% of the 1990-level in 2001. Again, the relative change in treatable conditions was larger than among Swedish women. Despite narrowing the gap, absolute levels remained high at about twice the Swedish rates. IHD mortality also fell steadily after 1991, to about 85% of the 1990 level (38/100 000 in 2001) while there was a small increase in mortality from preventable conditions, to 27/100 000 in 2001 (+10%), similar to that seen in Sweden.

Figure 3.6 Trends in age-standardised rates of treatable, preventable and IHD mortality in Poland, 1990– 2002. NB Different scale from previous figures



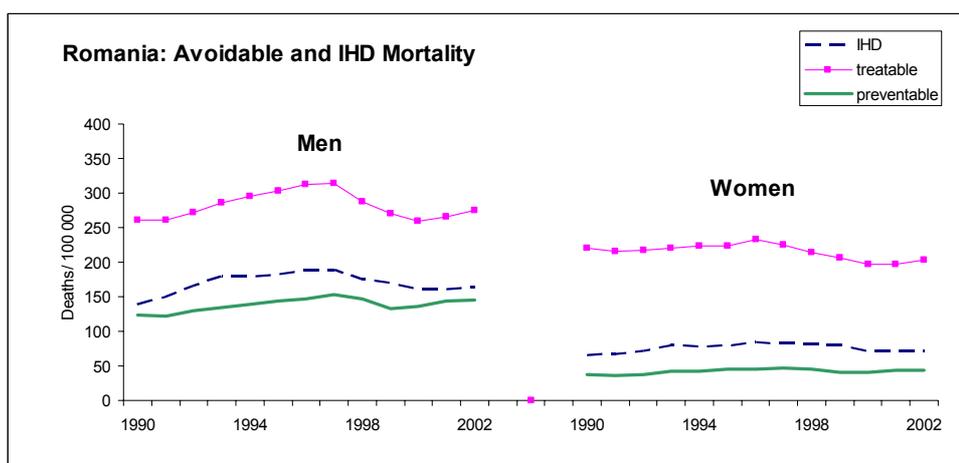
Source: Newey et al. 2003

Romania

The mortality pattern in Romania has been very different (Figure 3.7) from the preceding countries. As already mentioned, one distinct feature of Romania is its claim to the highest levels of treatable mortality among the countries considered in this analysis, accounting for almost half of total mortality in men. As in Lithuania, Romania has experienced an increase in treatable mortality during the 1990s, only slowly declining from 1997 onwards, although this trend has reversed since 2000. Among men, in 2002, treatable mortality was about 5% higher than in 1990; among women, the 2002 rate was less than 7% lower than the 1990 rate. Mortality from treatable conditions among men was five times higher than in Sweden; for women, the corresponding figure was 3.5 times. Compared with Portugal, which has the highest levels of treatable conditions in the EU 15, the difference is still about 2.5 fold.

Romania also experienced a sustained increase in IHD mortality and mortality from preventable conditions throughout much of the 1990s, again in both men and women. Improvements were only seen from the late 1990s, although with little change since 2000. The overall result of these changes is that, in 2002, in men, levels of treatable and IHD mortality were higher than in 1990, by about 20%, at 164/100 000 and 145/100 000, respectively. Among women, this pattern was very similar, albeit at a lower level, at 72/100 000 for IHD and 44/100 000 for preventable mortality.

Figure 3.7 Trends in age-standardised rates of treatable, preventable and IHD mortality in Romania, 1990– 2002.

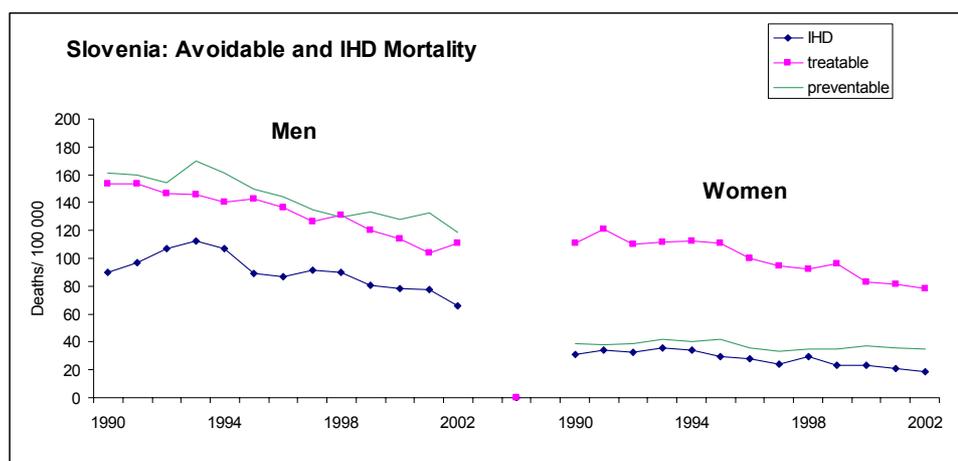


Source: Newey et al. 2003

Slovenia

Turning finally to Slovenia, Figure 3.8 demonstrates a mortality pattern that is again very different from the countries considered in this comparison. Importantly, for men, levels of treatable and preventable mortality have been very similar throughout much of the 1990s, around 50% higher than IHD mortality.

Figure 3.8 Trends in age-standardised rates of treatable, preventable and IHD mortality in Slovenia, 1990– 2002.



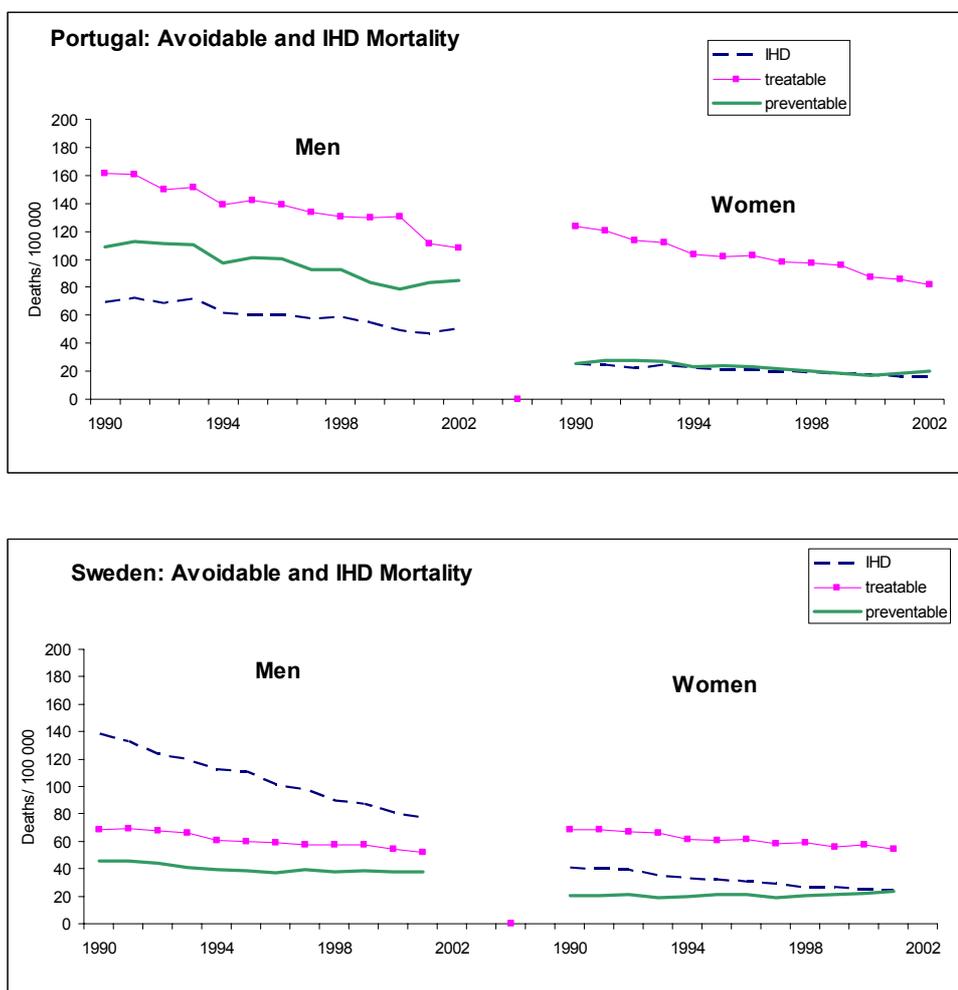
Source: Newey et al. 2003

Following an initial increase in the early 1990s, both treatable and preventable mortality fell steadily until 1999, with continuous decline in treatable conditions and a stabilisation of preventable mortality. As a result, in 2002, both treatable and preventable mortality had fallen to about 75% of the 1990 rate. IHD mortality followed a somewhat similar pattern, involving an initial increase in death rates, followed by a sustained decline from 1993, to 66/100 000 in 2002. Because the changes in treatable and preventable mortality observed for Slovenia occurred at a pace (defined as total percentage change between 1990/91 and 2000/02) that was very similar to that in Sweden, the mortality gap remained fairly stable, with treatable mortality about double and preventable mortality about 3.5 times the rates seen in Sweden.

Women also experienced a steady decline in treatable mortality, falling to 70% of the 1990 rate in 2002 but remaining some 50% higher than the corresponding rate in Sweden. There was also a considerable decline in IHD mortality, of about 40%, to 18/100,000 in 2002, about 25% lower than the rate in Sweden. In terms of preventable mortality, there was, however, little change, albeit some fluctuations in the mid-1990s, resulting in a small improvement in 2002 (90% of the 1990 rate).

It is important to note that levels of treatable mortality in Slovenia for men have been very similar to those in Portugal, and for women even lower (Figure 3.9). Mortality, in contrast, was higher in Slovenia from the start (i.e. 1990, by about 40% in men and 50% in women) and remained so throughout the period under study, rising to 75% in 2002.

Figure 3.9 Trends in age-standardised rates of treatable, preventable and IHD mortality in Portugal and Sweden, 1990– 2002.



Source: Newey et al. 2003

3.3 Discussion

This analysis of avoidable mortality in the enlarged EU and Candidate Countries in the 1990s demonstrated a clear east–west divide in the early 1990s for both men and women. This finding is not entirely unexpected given the existing body of research on trends in mortality in the former communist countries of central Europe that showed how the decline in mortality from causes considered avoidable through health care intervention had been slower than in the west during the 1970s and 1980s (Boys et al. 1991; Gaižauskienė and Westerling 1995). It suggested that deaths from these causes accounted for between a quarter and a third of the gap in life expectancy between the east and west of Europe (Velkova et al. 1997). However, as the findings of the present study suggest, the pattern has changed somewhat since, painting a rather complex picture.

Treatable mortality

At the beginning of the 1990s, levels of treatable mortality were highest in Romania and Bulgaria, followed closely by the new Member States from central and eastern Europe. Some have however made substantial progress since, especially the Czech Republic, Hungary and Slovenia, and, to lesser extent, Poland, while others have shown little (Latvia, Lithuania, Bulgaria) or no improvement at all (Romania, especially among men). However, the overall trends obscure important differences in specific categories of causes of deaths. Thus, successes and failures were, to a considerable degree, driven by infant mortality which, in the central European countries fell almost immediately following transition while others experienced increases, which were short-lived in some (Estonia, Lithuania) and sustained in others (Latvia, Bulgaria). Interestingly, Romania, while displaying the highest levels of infant mortality throughout this period experienced a steady decline, albeit some fluctuations in the mid-1990s (WHO Regional Office for Europe 2004).

Many countries also experienced declines in mortality from cerebrovascular disease, which again were immediate in some (Czech Republic, Slovakia, Slovenia, Hungarian women) while temporarily increasing in others, particularly the Baltic states of Estonia and Latvia, as well as Bulgaria and Romania. The control of hypertension as a strong risk factor for cerebrovascular disease was particularly poor in eastern Europe (Ryglewicz et al. 1998). However, this is now changing, with recent improvements in cerebrovascular disease mortality possibly reflecting a combination of better access to pharmaceuticals and hypertensive treatment along with improvements in secondary care. Despite evidence of greater awareness and significant declines in the prevalence of hypertension in the new Member States (Cifkova et al. 2004), it is noted that the treatment of hypertension is still largely inadequate, with low proportions of blood pressure control reported in a number of countries, including Latvia and Poland (Dzerve et al. 2004; Rywik et al. 1998). Indeed, levels of premature mortality from cerebrovascular disease in the new Member States and Candidate Countries are still substantially higher than in the EU.

Romania and Bulgaria, whose levels of mortality from treatable conditions were the highest in this study, were also the only countries to have recorded an increase in mortality from testicular cancer among men over the last 30 years, at a time when substantial improvements had occurred in the rest of Europe (Levi et al. 2001). One explanation for this is an increase in diagnoses. It is noteworthy that in both countries the share of overall mortality (under 75) attributable to treatable conditions is much higher than in the EU, particularly in men, at over 25%, and over 40% in Romanian women, suggesting that both countries still have some way to go to achieve the health outcomes seen in their neighbours to the west.

Preventable mortality

Interpretation of the data on deaths amenable to inter-sectoral health policies (preventable mortality) must be undertaken with caution as they combine three major causes: deaths from lung cancer, motor vehicle and traffic accidents and cirrhosis of the liver. However, as with treatable conditions, in the early 1990s, rates of preventable mortality have been highest in the eastern part of the region especially Hungary, as was the gender-gap, reflecting the much greater exposure to risks such as drinking and smoking among men.

Unlike the situation with treatable causes, however, with the exception of Romania, men have consistently seen declines in preventable mortality while women have not.

The consistent decline in mortality from traffic accidents during this period has contributed greatly to the declines in preventable mortality seen for men, particularly in the Mediterranean countries. It has also had a major influence on rates of preventable mortality for women, outweighing the effects of increasing rates of lung cancer and liver cirrhosis for women in countries such as Finland. A profile of mortality from road traffic accidents over this time period can be seen in *Section 2, Health Status in the EU*.

Tobacco smoking is the single most important risk factor of lung cancer, and the changing pattern of lung cancer mortality between 1990 and 2002 has had a major impact on preventable mortality. Traditionally smoking has been very common among men throughout Europe, and less so amongst women. As a consequence, a gender-gap in death rates from lung cancer has emerged. Female smoking patterns have however been changing with smoking rates increasing (Levi et al. 2003; Tyczynski et al. 2004), especially among the young in major cities (Forey et al. 2002). This change is reflected in the increases in preventable mortality seen for countries such as Hungary, Romania and Slovenia where lung cancer rates for women have risen over the last decade, to a large extent, reflecting the increasing death toll among a generation of women who began smoking in the 1960s. It has been predicted that this increase will surpass trends already seen in several countries in Western Europe (Brennan and Bray 2002). However, as seen in Poland, the negative impact of transition on tobacco consumption does not have to be definitive. The Polish government was the first in the region to enact comprehensive tobacco control legislation and, since 1995, has developed a set of tobacco control policies that were more comprehensive than those in force in the EU 15 (Gilmore et al. 2004). Smoking rates are now declining and health indicators are improving as a result. It may be anticipated that the gender-gap in preventable mortality, as defined here, will continue to narrow in the foreseeable future, reflecting the changing patterns in smoking.

Liver cirrhosis, a condition that is strongly related to alcohol consumption (Corrao et al. 2004), also appears to be a growing concern for a number of countries, particularly Romania, the Baltic states, Ireland and UK, where rates have considerably increased for both men and women. These findings highlight the need for continued policy development on this issue, particularly in those countries that have witnessed an increase in levels of alcohol consumption.

IHD

Despite continuing to represent a substantial challenge in terms of all-cause mortality, the trends observed in IHD mortality for both men and women present grounds for optimism. Declines, particularly in Finland, UK, Ireland and the Czech Republic, demonstrate the success of policies such as tobacco control and dietary interventions, along with advances in health care for prevention and treatment of IHD (Vartiainen et al. 1994; Capewell et al. 1999). Although a number of well-established risk factors exist, there is a continued need for research into issues such as alcohol consumption, which can contribute to IHD mortality (Law 1999). Despite the declines in IHD, most recently observed in Romania,

further sizeable improvements are possible, and efforts should be made to improve treatment and policies accordingly.

Overall, the results indicate the importance of thinking about the contribution that improved health care can make to public health in Europe.

References

- Boys, R.J., Forster, D.P. and Jozan, P. (1991). Mortality from causes amenable and non-amenable to medical care: the experience of eastern Europe. *BMJ* 303, 879–883.
- Brennan, P., Bray, I. (2002). Recent trends and future directions for lung cancer mortality in Europe. *Br J Cancer* 87:43–8.
- Capewell, S., Morrison, C., McMurray, J. (1999). Contribution of modern cardiovascular treatment and risk factor changes to the decline in coronary heart disease mortality in Scotland between 1975 and 1994. *Heart* 81: p. 380–6.
- Cifkova, R., Skodova, Z., Lanska, V., Adamkova, V., Novozamska, E., Petrziikova, Z., Jozifova, M., Plaskova, M., Hejl, Z., Palous, D., Galovcova, M. (2004). Trends in blood pressure levels, prevalence, awareness, treatment, and control of hypertension in the Czech population from 1985 to 2000/01. *J Hypertens* 22:1479–85.
- Corrao, G., Bagnardi, V., Zambon, A., La Vecchia, C. (2004). A meta-analysis of alcohol consumption and the risk of 15 diseases. *Prev Med* 38(5):613–9.
- Dzerve, V., Britcina, N., Pakhomova, J. (2004). Prevalence and control of hypertension in Latvia. *J Hum Hypertens* 18:587–90.
- Forey, B., Hamling, J., Lee, P., Wald, N. (2002). *International Smoking Statistics*. Second edition. Oxford: Oxford University Press.
- Gaižauskienė, A. and Westerling, R. (1995). A comparison of avoidable mortality in Lithuania and Sweden 1971–1990. *Int J Epidemiol* 24: 1124–1131.
- Gilmore, A.B., Österberg, E., Heloma, A., Zatonski, W., Delcheva, E., McKee, M. (2004). Free trade versus the protection of public health: the examples of alcohol and tobacco. In M. McKee, L. MacLehose, E. Nolte E (eds.) *Health policy and European Union enlargement*. Buckingham: Open University Press, 198–24.
- Law, M., Wald, N. (1999). Why heart disease mortality is low in France: the time lag explanation. *BMJ* 29;318(7196):1471–6.
- Levi, F., La Vecchia, C., Boyle, P., Lucchini, F., Negri, E. (2001). Western and eastern European trends in testicular cancer mortality. *Lancet* 357:1853–4.
- Levi, F., Lucchini, F., Negri, E., La Vecchia, C. (2004). Trends in Mortality from major cancers in the European Union, including acceding countries, in 2004. *Cancer* 101(12):2843–50
- Newey, C., Nolte, E., McKee, M, and Mossialos, E. (2003). Avoidable mortality in the enlarged European Union. Report for the Institut des Sciences de la Santé.
- Rutstein, D.D., Berenberg, W., Chalmers, T.C., Child, C.G., Fishman, A.P., Perrin, E.B. (1976). Measuring the quality of medical care. *N Engl J Med* 294:582–8.
- Ryglewicz, D., Polakowska, M., Lechowicz, W., Broda, G., Rószkiewicz, M., Jasiński, B. (1998). Stroke mortality rates in Poland did not decline between 1984 and 1992. *Stroke* 28: 752–57.
- Rywik SL, Davis CE, Pajak A, Broda G, Folsom AR, Kawalec E, Williams O.D. (1998). Poland and U.S. collaborative study on cardiovascular epidemiology in the community: prevalence, awareness, treatment, and control of hypertension in the Pol-MONICA project and the U.S. Atherosclerosis Risk in Communities Study. *Ann Epidemiol* 8: 3–13.
- Tunstall-Pedoe, H., Vanuzzo, D., Hobbs, M., Mähönen, M., Cepatis, Z., Kuulasmaa, K., Keil, U. (2000). Estimation of contribution of changes in coronary care to improving

survival, event rates, and coronary heart disease mortality across the WHO MONICA Project populations. *Lancet* 355: 688–700.

- Tyczynski, J.E., Bray, F., Aareleid, T., Dalmas, M., Kurtinaitis, J., Plesko, I., Pompe-Kirn, V., Stengrevics, A., Parkin, D.M. (2004). Lung Cancer Mortality Patterns in selected Central, Eastern and Southern European countries. *Int J Cancer* 109: 598–610.
- Vartiainen, E., Puska, P., Pekkanen, J., Tuomilehto, J., Jousilahti, P. (1994). Changes in risk factors explain changes in mortality from ischaemic heart disease in Finland. *BMJ* 309: p. 23–27.
- Velkova, A., Wolleswinkel–van den Bosch, J.H., Mackenbach, J.P. (1997). The east–west life expectancy gap: Differences in mortality from conditions amenable to medical intervention. *Int J Epidemiol* 26:75–84.
- World Health Organization Regional Office for Europe. Health for All database. Copenhagen: World Health Organization Regional Office for Europe, 2004.

Appendix

List of conditions considered to be 'avoidable' used in this analysis.

	Name of group	Age	ICD9	ICD10	'Treatable' / 'Preventable'
1	Intestinal infections	0-14	001-009	A00-A09	'Treatable'
2	Tuberculosis	0-74	010-018, 137	A15-A19, B90	'Treatable'
3	Other infectious (Diphtheria, Tetanus, Poliomyelitis)	0-74	032, 037, 045	A36, A35, A80	'Treatable'
4	Whooping cough	0-14	033	A37	'Treatable'
5	Septicaemia	0-74	038	A40-A41	'Treatable'
6	Measles	1-14	055	B05	'Treatable'
7	Malignant neoplasm of colon and rectum	0-74	153-154	C18-C21	'Treatable'
8	Malignant neoplasm of skin	0-74	173	C44	'Treatable'
9	Malignant neoplasm of breast	0-74	174	C50	'Treatable'
10	Malignant neoplasm of cervix uteri	0-74	180	C53	'Treatable'
11	Malignant neoplasm of cervix uteri and body of the uterus	0-44	179, 182	C54, C55	'Treatable'
12	Malignant neoplasm of testis	0-74	186	C62	'Treatable'
13	Hodgkin's disease	0-74	201	C81	'Treatable'
14	Leukaemia	0-44	204-208	C91-C95	'Treatable'
15	Diseases of the thyroid	0-74	240-246	E00-E07	'Treatable'
16	Diabetes mellitus	0-49	250	E10-E14	'Treatable'
17	Epilepsy	0-74	345	G40-G41	'Treatable'
18	Chronic rheumatic heart disease	0-74	393-398	I05-I09	'Treatable'
19	Hypertensive disease	0-74	401-405	I10-I13, I15	'Treatable'
20	Ischaemic heart disease	0-74	410-414	I20-I25	separate (see text)

2	Cerebrovascular disease	0-74	430-438	I60-I69 ¶	'Treatable'
1					
2	All respiratory diseases	1-14	460-479,	J00-J09, J20-J99	'Treatable'
2	(excl. pneumonia/influenza)		488-519		
2	Influenza	0-74	487	J10-J11	'Treatable'
3					
2	Pneumonia	0-74	480-486	J12-J18	'Treatable'
4					
2	Peptic ulcer	0-74	531-533	K25-K27	'Treatable'
5					
2	Appendicitis	0-74	540-543	K35-K38	'Treatable'
6					
2	Abdominal hernia	0-74	550-553	K40-K46	'Treatable'
7					
2	Cholelithiasis & cholecystitis	0-74	574-575.1	K80-K81	'Treatable'
8					
2	Nephritis and nephrosis	0-74	580-589	N00-N07, N17-N19, N25-N27	'Treatable'
9					
3	Benign prostatic hyperplasia	0-74	600	N40	'Treatable'
0					
3	Maternal deaths	All	630-676	O00-O99	'Treatable'
1					
3	Congenital cardiovascular anomalies	0-74	745-747	Q20-Q28	'Treatable'
2					
3	Perinatal deaths, all causes excluding stillbirths	All	760-779	P00-P96 Ĩ	'Treatable'
3					
3	Misadventures to patients during surgical and medical care	All	E870-E876, E878-E879	Y60-Y69, Y83-Y84	'Treatable'
4					
<hr/>					
3	Malignant neoplasm of trachea, bronchus, and lung	0-74	162	C33-C34	'Preventable'
5					
3	Cirrhosis of liver	0-74	571	K70, K73-K74	'Preventable'
6					
3	Motor vehicle accidents	All	E810-825	V02-V04, V09, V12-V14, V20-V29, V79, V82-V87, V89	'Preventable'
7					
<hr/>					

4. SOCIOECONOMIC INEQUALITIES IN HEALTH AND ACCESS TO HEALTH CARE

Following a discussion of trends in health status and living conditions across Europe, and some explanations for cross-country differences, with particular focus on the role of the health care system, it is important to analyse what patterns can be seen within countries. More specifically, who benefits from the overall improvements in health status that have been observed across Europe? Moreover, is the gap in health status within countries between the wealthy and the poor, between the employed and the unemployed, and between different population groups widening? To what extent are inequalities in health and access to care in the original Member States also seen in the new and candidate countries?

This section begins with a discussion of the theory underlying socioeconomic inequalities in health, outlines the key points covered in this section, and then discusses four broad areas: income inequality and health; socioeconomic determinants of health, mortality, and risky behaviours; other determinants of health – notably housing and employment; followed by an review of the evidence of inequalities in access to health care services.

Socioeconomic status is linked to differences in disease rates within and between societies either directly or indirectly (Wilkinson 1999; Wadsworth 1999; Alder and Newman 2002). Income, occupation, and education directly influence the material conditions necessary for survival and indirectly shape the degree of social participation and control over life circumstances.

Education is acquired by early adulthood and affects future occupational and income opportunities and is related with social position; it also endows the knowledge and skills to access better information and resources to promote health.

Income directly affects living conditions, and by discussing income it is important also to consider its lack: poverty. There is an income threshold above which both participation and control influence health more than material conditions (Marmot 2002). However, in wealthy countries, relative but not absolute income influences health indicators within and between nations.

Occupational status affects health in different pathways depending on work characteristics. Unemployment and length of unemployment have direct and indirect effects on health; job insecurity increases the risk of mental and physical health problems. Among employed people, differences in health might be related to differences in qualifications and job characteristics. People in lower-status jobs are more exposed to both physical and psychological risks.

Education, income and occupation are also proxies for other determinants that have a more direct effect on health. For instance, people in lower socioeconomic groups tend to live in

poorer neighbourhoods which are more likely to be located near industrial areas, highways, and toxic waste sites with greater residential crowding, noise and poorer housing quality. Social networks and cohesion as well as social isolation and lack of engagement greatly affect health status. Behavioural factors such as smoking, diet, alcohol consumption and drug addiction are powerful determinants of health and are related with socioeconomic position. For example, in richer countries obesity and tobacco consumption are more common among people with lower education and income.

In most western European countries, material circumstances have improved in the last 30 years: wages have increased, residential crowding has decreased, diets are more varied, and almost everyone has central heating and owns consumer durables (Bobak et al. 1998). Poverty in many western countries is related with being unable to go on holiday, “not having hobbies or leisure activities, not having friends or family around for a snack, not taking children swimming” (Marmot 2002). However, for most central and eastern European countries (CEE) the situation is quite contrasting: material circumstances did not improve between the 1970s and late 1980s, and then deteriorated during the 1990s; inequalities across socioeconomic groups and regions have widened more sharply than in western Europe (Bobak et al. 1998).

Key points:

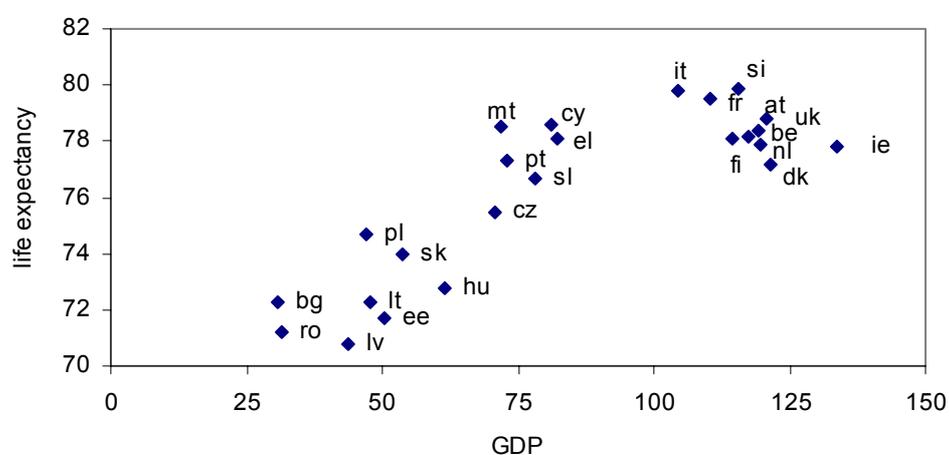
- In western countries there is no association between GDP per capita and life expectancy. On the contrary, in the new Member States and the three Candidate Countries the correlation between GDP per capita and life expectancy is very high.
- Income inequality is associated with lower life expectancy and higher mortality both in the west and the east.
- Education and occupational status are important determinants of health in the EU. Education-related inequalities are seen in common chronic diseases but the magnitude varies among men and women.
- On average, socioeconomic inequalities in health decrease when age increases.
- In the EU-15 between 1980s-1990s, there was no change in socioeconomic inequalities in health among men, but among women they slightly increased (in Italy, Spain and the Netherlands).
- A social gradient favouring the better-off is seen for all causes of mortality and especially in cardiovascular mortality, stroke mortality and respiratory diseases (men). However, breast cancer mortality is higher among women in higher socioeconomic groups.
- Socioeconomic inequalities in mortality have increased between 1981-1985 and 1991-1995 due largely to the proportionally faster relative decline of mortality in the higher socioeconomic classes although the decrease in absolute mortality has been similar in the lower and upper groups
- Education and income are important determinants of smoking in Europe. In northern countries, smoking is more common among men and women in lower socioeconomic groups. However in southern countries smoking is less common among men but this is not seen among women.
- Being overweight is a major risk factor for hypertension; obesity varies with age, education, socioeconomic status, marital status and tobacco consumption.
- Unemployment is associated with poor health status and increased chance of mental health problems, social exclusion and suicide.
- In the EU, work-related stress affects one-third of the workforce; about 25% of new disability benefits are due to mental conditions in Europe.
- Unhealthy housing is internationally recognised as a significant threat to physical, social and mental health: problems with housing are especially prevalent in the new Member States and the three Candidate Countries.
- Physical health problems such as respiratory symptoms and accidents have been linked to substandard housing.
- Homelessness is strongly associated with physical and mental health problems (e.g. substance abuse, malnutrition, respiratory disease, violence and injury).
- Private health care expenditure, the number of hospitals and hospital beds per 100 000 population, and proximity to health facilities are largely comparable across the EU.

- Income-related inequalities in proximity to hospitals and primary care are seen in several European countries.
- Socioeconomic characteristics affect access to health care in almost all European countries.
- While GP access is fairly equitably distributed by income, in all countries, the better off are more likely to visit a specialist (particularly in Portugal, Finland, Italy and Ireland).
- For inpatient care, in 7 of 12 western European countries, the probability of being admitted to hospital was larger for people with higher income, particularly in Portugal, Greece, Italy, Austria and Ireland.

4.1 Income inequality and health

Economic growth is a major determinant of average health status in poor and developing countries where malnutrition and infectious diseases contribute to the high percentage of maternal, infant and childhood deaths; but it has much less effect in rich countries. Figure 4.1 shows that in western European countries there is no association between GDP per capita and life expectancy. When only the new Member States and Bulgaria and Romania are considered the correlation between the two indices is very high: 0.86. Cyprus and Malta are comparable to the EU-15: both life expectancy at birth and GDP are similar to the EU average and are considerably higher than the CEE countries. In poor countries, income and life expectancy/mortality are clearly related but in rich countries the relation weakens and life expectancy is more associated with income inequality. After 1989, CEE countries witnessed both an increase in poverty and income inequality. Figure 4.2 shows that countries with higher income inequality have lower life expectancy both in the EU-15 and new Member States.

Figure 4.1 Relation between life expectancy and GDP per capita in PPS (100 = EU25), 2002^a

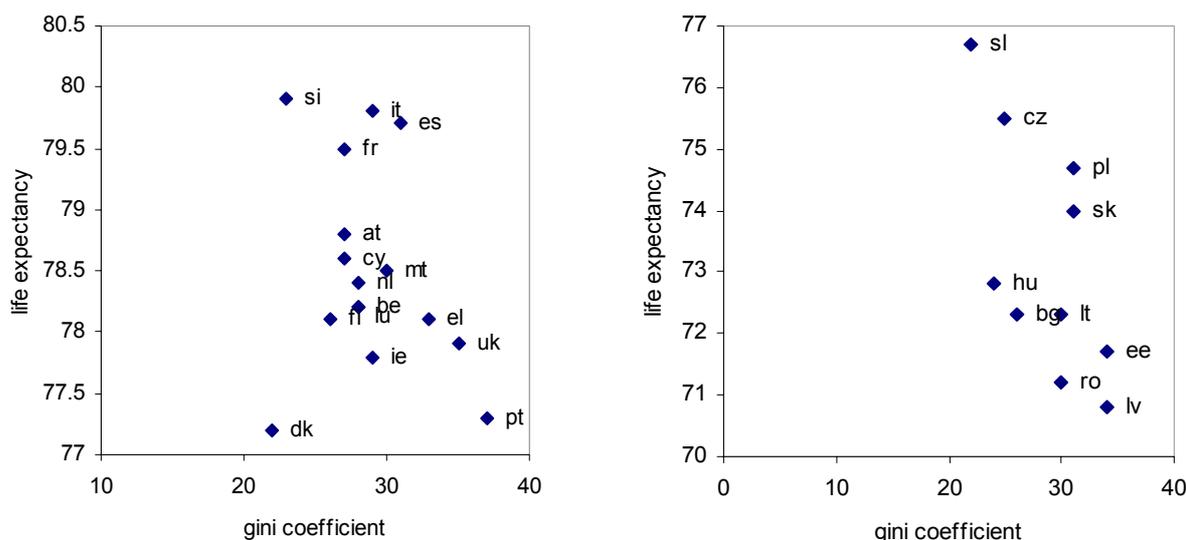


^a Life expectancy data: Italy, Cyprus 2001, UK 2000.

Source data: OECD 2004.

Higher income inequality was found to be strongly associated with higher mortality among infants, and to less extent with mortality among those aged 1–14 in Austria, Belgium, Denmark, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Spain, Sweden, the UK and other OECD countries (Lynch et al. 2001). The association between income inequality and mortality declines with age and becomes negative for those aged 65 years or older although not significantly. The correlation between income inequality and mortality is higher for men than for women in all age categories. Among women, income inequality is positively and significantly associated with chronic obstructive diseases, infectious, and unintentional death under age 1; but negatively associated with suicide and stroke. Among men, higher inequality is related with higher probability of homicide, infectious diseases and unintentional death under age 14, but with lower stroke mortality. The two most striking findings are the correlation of 0.63 (weighted for population size) between income inequality and lung cancer among women, and 0.21 among men; and correlation with homicide of 0.65 (men) and 0.66 (women) (Lynch et al. 2001).

Figure 4.2 Relation between income inequality and life expectancy in Europe, 2002^{a b}



^a Life expectancy data: Italy 2001, UK 2000.

^a Life expectancy data: Cyprus 2001.

^b Gini coefficient: Belgium, Denmark, Greece, Ireland and Italy 2001.

Source data: OECD 2004.

An increase in income is associated with improvements in self-assessed health status also at the individual level (Mackenbach et al. 2005). Higher household income is associated with better health conditions for both men and women, particularly in the middle-income range in seven European countries (Belgium, Denmark, England, Finland, France, the Netherlands and Norway). In the highest-income group, the relationship between income and self-assessed health is curvilinear; higher income is associated with less than proportional increases in self-assessed health in all countries analysed. A curvilinear association was found also for the lowest-income group in Belgium, Finland, Norway and the Netherlands, where the relationship reverses in particular among women. However, for

these four countries net instead of gross income was measured. If the relationship between household income and morbidity is curvilinear, then it is likely that direct effects of material circumstances and poverty on health status are the most important. On the other hand, if the relationship is more linear, indirect effects of income through psychosocial factors are more likely to explain health inequalities.

4.2 Socioeconomic determinants of health

Occupational status and education together with other behavioural and psychosocial factors affect the distribution of morbidity within countries. In Phase III of the Whitehall study in England, a clear relation between employment grade and SF-36 physical functioning score was found for both men and women (Marmot et al. 2005). The presence of a social gradient in health in England was also highlighted by the results of the Whitehall studies I and II. Even after controlling for age differences, the social gradient in health did not disappear, inequalities were particularly large for angina symptoms and mental disorders (Asthana et al. 2004). For each age group, people in higher socioeconomic classes reported better health status, and fewer angina symptoms and mental disorders than individuals in lower social class. Socioeconomic differences in angina symptoms and self-assessed health decreased with increasing age; while, for mental health problems socioeconomic inequalities were largest in the working-age group.

In Sweden, a social gradient was found for coronary heart disease (CHD); the relative risk of CHD among non-skilled workers was nearly two-fold higher than for high-level non-manual workers (Hemmingsson and Lundberg 2005).

Likewise, in Finland, metabolic syndrome and CHD were more prevalent in individuals with low education compared with university education (Silventoinen et al. 2005); and metabolic syndrome explained CHD only slightly. Moreover, household income, education and occupational class are also powerful determinants of inequalities in longstanding illness for both Finnish men and women (Lahelma et al. 2004). The risk of suffering from limiting longstanding illness was much greater among women and men with basic education when compared with university education, 1.70 and 1.92 respectively; for manual workers when compared with upper white collar was respectively 1.60 and 2.0; and for people in the lowest quartile when compared with the highest one was 2.56 and 1.49. Socioeconomic factors are also correlated with each other; part of the effect of each socioeconomic indicator was explained or mediated through other socioeconomic factors. For example, the effect of income on health can be partly explained by education and occupational status.

In Northern Ireland and France (PRIME study), a socioeconomic gradient was found for long-term risks of CHD (Yarnell et al. 2005). Men with CHD were more likely to live in poor material circumstances, be unemployed, or have low education. Among those free of CHD at baseline, socioeconomic differentials in risks factors are evident but only education and unemployment status contributed significantly to risk of CHD at 5-year follow up.

In Barcelona, the prevalence of poor self-assessed health status was higher among unskilled male workers (OR: 7.69), semi-skilled (OR: 4.92), small employers (OR: 5.90) and petit bourgeoisie (OR: 4.48) when compared with managers and supervisors (Borrell et al. 2004). Among men, job insecurity was associated with a nearly three-fold higher risk of having poor health.

A social gradient in self-reported health was also found in Estonia (Leinsalu 2002). For women and men with low educational level the risk of being in poor health was respectively four-fold and two-fold higher than for those with the highest educational status.

In Latvia, income differences were found to be the main determinants of poor self-assessed health (Monden 2004). Among men in the lowest income quintile the probability of reporting poor health was over five times more likely than for people in the highest quintile; and among women it was over three times higher (See Table 4.1). Occupational status was also strongly related to health status, with unskilled blue-collar male workers five times more likely (and three times more likely among women) to report bad health when compared with manager and professionals. Low education and unemployment were also associated with poor self-reported health. After adjusting for education, only income differences and economic inactivity remained strong determinants of reported health status. The magnitude of socioeconomic differences was lower for indices of longstanding illness than for indices of poor self-assessed health.

Similarly, in Bulgaria, the probability of reporting poor health increases with age and decreases with educational level (Balabanova and McKee 2002). Self-assessed health is also associated with financial status and this seems to be a much better predictor of health than income, in particular among women.

Table 4.1 Socioeconomic determinants of self-assessed health among men and women in Latvia, age 25–70 (odds ratio)

	Men		Women	
	Model 1	Model 2	Model 1	Model 2
Education:				
Primary	2.21	1.57	2.48	2.21
Secondary	1.39	1.13	1.99	1.74
Tertiary	1.00	1.00	1.00	1.00
Income:				
Lowest quintile	5.10	4.43	3.26	2.67
2 nd quintile	4.83	4.33	2.86	2.49

3 rd quintile	3.65	3.32	2.58	2.35
4 th quintile	1.77	1.67	1.75	1.71
Highest quintile	1.00	1.00	1.00	1.00
Occupation:				
Unskilled blue collar	5.39	2.93	2.89	1.93
Skilled blue collar	2.64	1.76	2.17	1.39
Unskilled white collar	1.87	1.16	2.18	1.56
Skilled white collar	1.75	1.41	1.02	0.91
Management & professionals	1.00	1.00	1.00	1.00
Economic activity:				
Non-active	6.12	4.75	2.79	2.38
Unemployed	3.44	2.48	1.92	1.53
Self-employed	1.00	1.00	1.00	1.00

Notes: numbers in bold are statistically significant with a 95% confidence interval.

Model 1: adjusted for age, marital status, ethnicity and urbanisation. Model 2: additionally adjusted for education and income.

Source: *Monden 2004.*

In Hungary in 1988, the main risk factors of self reported morbidity were low personal income, alcohol consumption and BMI among men (Kopp et al. 2004); while among women, they were BMI, number of cigarettes per day and wine consumption. No socioeconomic indicators were significantly associated with reported health status among women. By 1995, however the situation had changed; cigarette consumption was a significant risk factor for poor health for men and women. Moreover, among men, morbidity was significantly correlated with educational level; while among women poor health was mainly associated with personal income. After including other psychosocial factors in the regression model, the effects of income and education decreased, and morbidity among men in 1995 was explained by depression (measured by the Beck Score), years of smoking and perceived control in work; and among women, by depression and anxiety.

International comparison of socioeconomic determinants of health

International studies in socioeconomic determinants of health are helpful to determine the patterns of socioeconomic health inequalities in Europe. Large education-related inequalities in self-assessed health were observed in Austria, Denmark, England, Italy, the Netherlands, Norway, West Germany, Spain, and Sweden (Table 4.2) with large differences in magnitude (Kunst et al. 2005). Between the 1980s and the 1990s, socioeconomic inequalities in self-assessed health remained, on average, stable for men but slightly

increased for women. Increasing inequalities were observed in Italy, the Netherlands and Spain, but this was not seen in Northern countries. This suggests that Northern countries' welfare states had mechanisms to protect people in lower socioeconomic classes from the health effects of the economic crises in the 1990s. However, large socioeconomic inequalities in reported health status still persist in all the 10 western countries analysed.

Table 4.2 Magnitude of educational differences in pair/poor self-assessed health: men and women aged 25–69 years (Odds ratios^a, 95% confidence intervals)

Country	Men		1990s		Women		1990s	
	1980s		1980s		1980s		1990s	
Finland	3.15 (2.55–3.88)		2.99 (2.44–3.66)		2.86 (2.28–3.58)		3.29 (2.60–4.18)	
Norway	2.37 (1.71–3.29)		2.37 (1.70–3.30)		3.32 (2.37–4.66)		3.06 (2.22–4.23)	
Denmark	2.93 (2.16–3.9)		2.30 (1.73–3.04)		3.10 (2.13–4.50)		2.84 (2.10–3.82)	
England	3.11 (2.27–4.25)		3.08 (2.57–3.68)		2.08 (1.59–2.71)		2.66 (2.21–3.19)	
Netherlands	2.95 (2.46–3.52)		2.81 (2.39–3.30)		1.95 (1.63–2.35)		2.12 (1.81–2.49)	
W. Germany	1.50 (1.20–1.88)		1.76 (1.44–2.14)		1.89 (1.43–2.50)		1.91 (1.50–2.44)	
Austria	3.39 (2.92–3.93)		3.22(2.79–3.71)		2.75 (2.37–3.19)		2.67 (2.31–3.07)	
Italy	2.05(1.79–2.34)		2.94 (2.54–3.40)		1.86 (1.62–2.15)		2.55 (2.20–2.95)	
Spain	1.86 (1.56–2.17)		2.58 (1.81–3.67)		1.97 (1.63–2.37)		3.10 (2.18–4.41)	
Tot (excl. Italy)	2.61 (2.41–2.83)		2.54 (2.35–2.75)		2.48 (2.28–2.69)		2.70 (2.50–2.92)	

^a The reference category in all countries is higher educational level

Source: Kunst et al. 2005.

Education-related inequalities in common chronic diseases were found in Belgium, Denmark, Finland, France, Great Britain, Italy, the Netherlands, and Spain (Dalstra et al. 2005). Most diseases showed higher prevalence among people with low educational level, only allergy was more common in the high education group (Table 4.3). High inequalities

favouring the better-off are observed for stroke, diseases of the nervous system, diabetes and arthritis. No statistically significant inequality was found for cancer, kidney and skin diseases. The size of socioeconomic differences in chronic diseases varied between men and women. For diabetes, hypertension, and heart diseases inequalities were higher among women; while for back and spinal cord disorders inequality was higher among men. By comparing the working-age and the elderly population groups, it is evident that on average education-related inequalities decreased when age increased. The only exceptions were chronic respiratory diseases, headache and migraine. Among the working-age group cancer was more prevalent in the low educated group but in old age the pattern reversed; among older people cancer appears to affect the better educated.

Socioeconomic differences in self-assessed health status are found also in eastern European countries such as Russia, Estonia, Lithuania, Latvia, Hungary, Poland and Czech Republic; and the findings are not dissimilar from those in the EU-15 (Bobak et al. 2000). Education and material deprivation are important determinants of health status; people with higher education are less likely to report poor health (OR: 0.36). Low perceived control in work was also significantly associated with poor health, even after adjusting not only for age and gender but also for education, deprivation, and inequality.

Table 4.3 Education differences (low compared to high education) for chronic disease groups in Europe (OR with 95% confidence intervals)

Chronic group	disease	Total	Men	Women	Men and women (25–59 years)	Men and women (60–79 years)
Stroke		1.64 (1.40–1.93)	1.70 (1.35–2.14)	1.56 (1.25–1.96)	1.89 (1.25–2.51)	1.53 (1.27–1.86)
Diseases of nervous system		1.63 (1.51–1.77)	1.57 (1.40–1.77)	1.57 (1.41–1.75)	1.81 (1.64–1.99)	1.33 (1.17–1.52)
Diabetes mellitus		1.60 (1.43–1.80)	1.30 (1.11–1.51)	2.19 (1.82–2.63)	1.64 (1.38–1.94)	1.57 (1.34–1.84)
Arthritis		1.56 (1.40–1.73)	1.50 (1.27–1.77)	1.46 (1.26–1.68)	2.04 (1.76–2.36)	1.17 (1.01–1.36)
Hypertension		1.42 (1.34–1.50)	1.10 (1.00–1.22)	1.52 (1.42–1.62)	1.55 (1.43–1.67)	1.30 (1.20–1.40)
Stomach/duodenum ulcer		1.40(1.22–1.60)	1.41(1.19–1.67)	1.56(1.25–1.95)	1.37(1.15–1.62)	1.46(1.16–1.83)

Genitourinary diseases	1.35(1.24–1.47)	1.29(1.13–1.48)	1.53(1.36–1.72)	1.51(1.36–1.69)	1.15(1.00–1.31)
Headache/migraine	1.35(1.27–1.43)	1.18(1.06–1.32)	1.29(1.20–1.3)	1.28(1.20–1.37)	1.62(1.42–1.84)
Osteoarthritis	1.34(1.21–1.49)	1.32(1.12–1.55)	1.29(1.12–1.48)	1.51(1.30–1.75)	1.20(1.03–1.38)
Liver/gall diseases	1.26(1.08–1.46)	1.10(0.87–1.40)	1.30(1.07–1.58)	1.31(1.07–1.60)	1.19(0.95–1.49)
Chronic respiratory diseases	1.24(1.15–1.33)	1.33(1.20–1.48)	1.19(1.07–1.33)	1.13(1.03–1.25)	1.42(1.26–1.61)
Heart diseases	1.22(1.10–1.35)	1.18(1.04–1.34)	1.51(1.28–1.79)	1.29(1.09–1.53)	1.18(1.04–1.33)
Back and spinal cord disorders	1.19(1.11–1.29)	1.33(1.19–1.49)	1.05(0.94–1.16)	1.29(1.18–1.41)	0.98(0.86–1.13)
Cancer	1.13(0.98–1.30)	0.96(0.78–1.20)	1.22(1.02–1.46)	1.64(1.02–1.46)	0.77(0.64–0.93)
Kidney stones and other kidney diseases	1.11(0.95–1.31)	1.03(0.83–1.27)	1.34(1.04–1.72)	1.17(0.95–1.45)	1.03(0.80–1.33)
Skin diseases	0.99(0.91–1.08)	0.99(0.86–1.14)	0.98(0.87–1.11)	0.98(0.88–1.09)	10.3(0.86–1.23)
Allergy	0.73(0.66–0.81)	0.67(0.57–0.79)	0.72(0.63–0.82)	0.69(0.61–0.78)	0.82(0.68–0.99)

Source: Dalstra et al. 2005

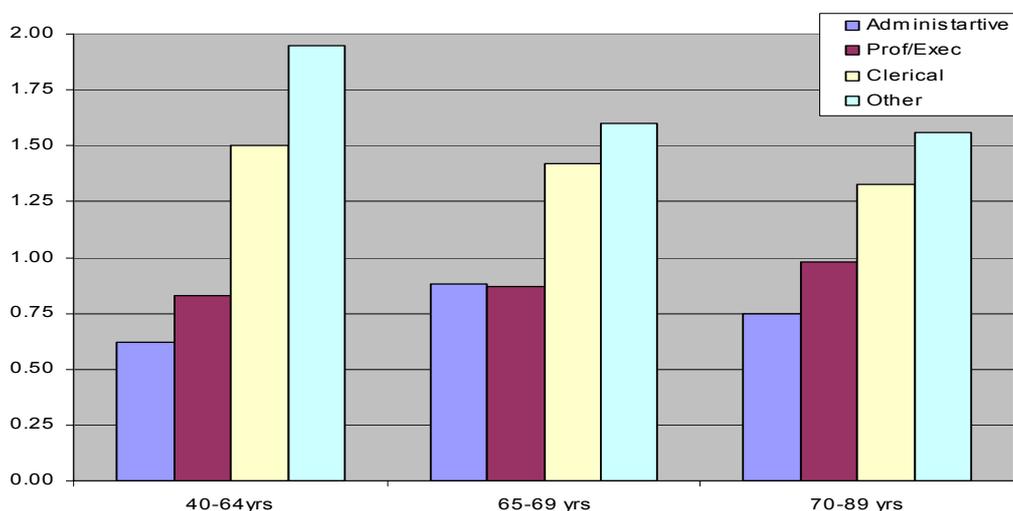
4.3 Socioeconomic inequalities in mortality

The relation between socioeconomic factors and mortality has received considerable attention in Europe. The World Health Organization, in their 1995 report, analysed the contribution of individual causes of death at different ages to the life expectancy gap between eastern and western Europe. Though there was a large difference in infant mortality between the west and the east, only 15% of the total difference was explained by the pattern of diseases in children <1 year old. Forty three per cent of the gap originated in the 35–64 years age group and 23% in the age-group 65 and over (Bobak 1996).

Cardiovascular disease was the main explanatory factor (54%) followed by external causes (23%) and respiratory diseases (16%).

The Whitehall studies on British civil servants showed that English men in the lowest employment grades had four times higher mortality rate than those in the highest administrative grade in the age group 40–64 years (Marmot 1999). Position in the social hierarchy was strongly correlated with mortality risk (Figure 4.3). Men second from the top had higher mortality than top-grade civil servants; clerical officers had higher mortality than men above them in the hierarchy, but lower than men in the lowest employment grades. A social gradient in mortality that runs from the least to the most deprived class was present not only for all causes of death but also for coronary heart diseases and neoplasms (van Rossum et al. 2000).

Figure 4.3 Mortality relative rates by grade of unemployment, Whitehall study (men 25 years of follow-up)



Source: Marmot 1999.

In Sweden, a social gradient was found for all cause mortality and cardiovascular mortality; the relative risks of all causes of mortality among non-skilled workers and skilled workers in comparison with high-level non manual workers were respectively 2.24 and 1.81; for cardiovascular disease mortality were respectively 2.38 and 1.77 (Hemmingsson and Lundberg 2005).

In Norway, between 1980 and 1990 there were educational differences in mortality and this inequality was on average higher among men (Mackenbach et al. 1999). Men and women who had obtained higher educational qualifications had lower mortality rates. Inequalities favouring the better educated were recorded for almost all causes of death but breast cancer which was more common among women with higher education; no inequality was found for neoplasm among both genders, and among women for cerebrovascular diseases and external causes of disease. Among men, the largest inequalities were recorded in respiratory diseases, lung cancer, and external causes; among women, education-related

inequality was largest for ischaemic heart diseases and cardiovascular diseases and in both cases was even higher than among men.

In Lithuania, between 1989 and 2001 education inequalities in mortality have increased, in particular among women (Kelediene and Petrauskiene 2005). The authors argue this trend results from the fact that mortality rates have decreased among people with high education but increased among people with low education.

A similar pattern was observed in Estonia. Educational differences in mortality have registered a steep increase from 1989 and 2000 for both men and women (Leinsalu et al. 2003). In 2000, the gap in life expectancy between men aged 25 years with a university degree and those with low education was 13.1 years and among women, the gap was 8.6 years; nearly 5 years larger than in 1989. Large inequalities in favour of people with higher education level were observed for all selected causes of mortality; and in 2000, they were significantly large for infectious diseases (RR: 7.88), alcohol poisoning (RR: 3.71), transport accident (RR: 3.44), chronic respiratory diseases (RR: 3.32) and lung cancer (RR: 3.34). Almost all the inequalities in specific causes of mortality increased between 1989 and 2000; and particularly so for infectious diseases (from 4.12 in 1989 to 7.88 in 2000) and ischaemic heart diseases (from 1.39 in 1989 to 2.25 in 2000). Inequalities decreased, but not significantly, for alcoholic liver cirrhosis, alcohol poisoning, suicide and homicide (Leinsalu et al. 2003).

In Slovenia, various factors related with premature risk of dying (age: 25–64) were recently analysed (Artnik et al. 2004). The main causes of death for men aged 25–44 were injuries. The probability of dying of neoplasms or circulatory diseases increased with age. Women lived longer and premature deaths among women were mainly due to breast and cervical cancer. The role of education as a determinant of premature death varied with specific causes of death. Women with the lowest educational level were more likely to die from cardiovascular diseases while, the contrary was observed for deaths due to breast cancer. Therefore, as seen in other countries breast cancer mortality is more common among higher socioeconomic groups. Among men, the probability of dying for respiratory and digestive diseases was larger for those who had not completed primary school. On the contrary, men with higher education level were more likely to die of circulatory diseases. Moreover, the authors emphasized the positive effect of marriage, which might be linked to both socioeconomic and psychosocial factors on health status; single men and women died earlier than the married, followed by divorced people.

Similar trends are seen in the Czech Republic. Mortality was significantly higher among men with a low level of education but no inequality was found among women in the period 1988–1992 (Mackenbach et al. 1999). Inequalities favouring the better educated were recorded for different causes of death⁴ but breast cancer and lung cancer which were more

⁴ The causes of death analysed are neoplasm, lung cancer, breast cancer, cardiovascular diseases, ischemic heart diseases, cerebrovascular diseases, respiratory diseases, gastrointestinal diseases, cancer and external causes of death.

common among women with high education (Figure 4.7); no inequality was found for external causes of disease among women. Among men, education-related inequalities were particularly large in respiratory diseases, lung cancer, gastrointestinal diseases, and external causes. Educational differences in specific causes of mortality were, on average, smaller among women than among men, the largest education-related inequality favouring the better-educated women was for respiratory diseases.

In Hungary, an ecological study was performed to analyse the role of subjective social status, and objective socioeconomic status (measured by income and education) in relation to male and female middle aged mortality rates (Kopp et al. 2005). Male mortality was associated with both male and female subjective social status, income and education; and the correlation between male middle-aged mortality was higher with female socioeconomic status variables than with male socioeconomic status. Female socioeconomic status variables, male education and objective social status were correlated with female mortality, but male income not. Therefore, it seems that improvements in socioeconomic status among women might bring along an increase in life expectancy for both men and women.

International comparisons of socioeconomic determinants in mortality

Education- and occupation- related inequalities in mortality favouring the better-off have increased between 1981–1985 and 1991–1995 in Denmark, England and Wales, Norway, Sweden, Italy (Turin), and particularly so, among Finnish men (Mackenbach et al. 2003). The main cause of this widening gap was the proportional faster relative decline of mortality in the higher socioeconomic classes although the decrease in absolute mortality has been similar in the lower and upper groups.

A similar decline in cardiovascular mortality was recorded for all six countries and in all socioeconomic classes, but again the relative decline was larger among the rich (Mackenbach et al. 2003). Socioeconomic differences in cardiovascular mortality explained almost half of the widening relative gap in mortality in all populations but Italy. Changes in other causes of deaths also contributed to the widening gap. The authors considered also the socioeconomic change in three other causes of mortality: neoplasms, other diseases and injuries. The occupation gap for neoplasms between the 1980s and 1990s increased in Sweden, England/Wales and Italy; for other diseases an increase was seen in Finland and Sweden; and for injuries in Finland and Italy. The widening in inequality in total mortality was also caused by increasing rates of mortality in the lower socioeconomic classes for lung cancer, breast cancer, respiratory diseases and gastrointestinal diseases among both men and women in almost all countries but Italy.

Men and women with lower education level had significantly higher stroke mortality than those with a middle/high educational level in Finland, Norway, Denmark, England/Wales, Belgium, Switzerland, Austria, Italy (Turin), and Spain (Barcelona and Madrid) (Avedano et al. 2004). The magnitude of education inequalities in stroke mortality was similar across Europe; only Austria reported larger than average differences for both men and women.

The risk of dying from stroke was approximately 26% and 28% higher for men and women with low educational level than those in high education. On average, educational differences tended to decrease with age; faster declines were seen in Norway, Austria, and Barcelona. The reduction with age was not statistically significant in England/Wales, Turin and Madrid. The contribution of education inequalities in stroke mortality to the overall education differences in life expectancy at age 30 years was 7% among men and 14% among women. The elimination of education inequalities in stroke mortality would have reduced education differences in life expectancy by 9% among men and 18% among women in Turin, and by 7% and 18% respectively in Austria.

As emphasized above, income and income inequality affect material circumstances both directly and indirectly through social participation and degree of control. Indeed, OECD countries with greater trade union membership and female political representation have lower child mortality (Lynch et al. 2001). Quality of the psychosocial environment is only moderately and inconsistently associated with mortality; but greater distrust and lack of control are related with higher coronary heart disease mortality. Low control in the workplace was related to higher risk of cardiovascular disease in the Whitehall II study (Bosma et al. 1997). Less control is also associated with higher death rates also in Latvia, Lithuania, Estonia, Hungary, Poland and Czech Republic (Marmot and Bobak 2000).

4.4 Socioeconomic determinants of risky behaviours: smoking and obesity

Income, education, employment status and psychosocial factors affect health also through behaviour and lifestyles such as smoking, diet, physical activity, alcohol consumption and drug addiction. In wealthy countries, people with lower education and income are more likely to be obese and consume tobacco. Such behaviours are powerful determinants of several life-threatening diseases such as lung cancer, hypertension, diabetes, cardiovascular and heart diseases.

Smoking

Education and income are strong predictors of smoking in Finland, Denmark, Ireland, UK, Belgium, Germany, Austria, Italy, Spain, Portugal and Greece (Huisman et al. 2005). The prevalence and consumption of tobacco is not equally distributed across the European Union, indeed smoking habits usually spread through populations in four stages (Mackenbach et al. 2004). In stage 1, smoking is exceptional and mainly a habit of men in higher socioeconomic groups. In stage 2, prevalence rates peak at 50%–80%, the difference among socioeconomic groups tend to disappear; a gender lag of approximately 10–20 years was observed in smoking behaviour. In stage 3, prevalence among men decreases and individuals in higher socioeconomic groups gradually stop smoking; while women reach their peak in this stage. In stage 4, prevalence rates for both men and women continue decreasing and smoking becomes mainly a habit of lower socioeconomic classes. Different countries are at different stages.

Northern countries are already in stage 4; both men and women in lower socioeconomic groups (education and income) are more likely to smoke (Huisman et al. 2005). Indeed, the probability of being a smoker is between 2 and 3-fold higher among men and women with a low educational level than for those with higher educational attainment in Denmark, Finland and Ireland.

On the contrary, southern countries such as Italy, Greece, and Portugal are still in stage 3. Education- and income-related inequality in smoking favours the better-off among men but not among women; and the social gradient is larger for people in the age-groups 25–34 years for both men and women.

Smoking is a leading risk factor of mortality for lung cancer (see *Section 2*) and, therefore, socioeconomic differences in smoking behaviours influence inequality in lung cancer first, and total mortality second. The non-homogenous development of the smoking epidemic across countries affects the dissimilar contribution of tobacco consumption to total mortality in the lowest socioeconomic group (Figure 4.12), which among men ranges from 5% in Madrid to 30% in England and Wales and among women from –14% in Madrid to 35% in England and Wales⁵ (Mackenbach et al. 2004).

Obesity

Obesity rates have increased rapidly over recent years and the process of technological advancement, urbanization and a more sedentary lifestyle together with other psychopathological and genetic determinants affect the imbalance between energy intake and expenditure. Obesity is strongly associated with socioeconomic status, in particular in wealthy countries (Cavelaars 1997), and different factors are causing this relationship (Wilkinson 1999):

- Diets that conform to nutritional recommendations generally cost more.
- The amount of physical exercise is influenced not only by individual choices, but also by the amount of leisure time, social transport policies and indoor activities that are not usually free.
- Among people in the lower socioeconomic classes the greater tendency to eat “for comfort” may be related to higher prevalence of depression.

The prevalence of obese individuals in the EU-15 varies with age, education, socioeconomic level, marital status and smoking behaviour (Martinez et al. 1999). The probability of being obese increases with age and peaks for the age-group 55–64 years

⁵ The authors analysed education-related differences in lung cancer and total mortality in 10 populations: Belgium, Switzerland, Austria, England/Wales, Norway, Denmark, Finland, Barcelona, Madrid and Turin. The follow up period varies across countries but the ranges from 1990 to 1997.

(Table 4.4). People in lower socioeconomic groups are more likely to be obese and a strong association between education and obesity is evident: people with low educational attainments are more likely to be obese. Single individuals are less prone to becoming obese than couples or widow/divorced people but this relationship is not anymore significant after standardizing for age and gender. The amount of time spent sitting down per week, the lack of interest in physical activity, and low participation in sports are also strong predictors of obesity (Martinez et al. 1999).

Table 4.4 Prevalence of obesity in the EU-15 (odds ratios with 95% confidence intervals)

	Crude		Adjusted by age and gender	
	OR	95% CI	OR	95% CI
Sex (women vs men)	1.2	1.00–1.25	1.10	0.98–1.23
Age				
15–24 (reference)	1		1	
25–34	2.76	2.07–3.68	2.75	2.06–3.67
35–44	3.89	2.94–5.15	3.87	2.92–5.15
45–54	6.23	4.73–8.20	6.20	4.71–8.16
55–64	7.31	5.55–9.64	7.31	5.54–9.63
65+	5.68	4.27–7.56	5.67	4.27–7.54
Socio economic level				
Middle-upper	1		1	
Middle	1.05	0.87–1.21	1.04	0.86–1.27
Middle-lower	1.41	1.18–1.69	1.38	1.15–1.66
Lower	1.65	1.37–1.99	1.56	1.28–1.89
Educational level				
Tertiary	1		1	
Secondary	1.56	1.29–1.88	1.54	1.28–1.86
Primary	2.66	2.21–3.22	2.12	1.75–2.58

Marital status				
Single	1		1	
Married	1.95	1.70– 2.24	1.13	0.97–1.31
Widow/divorced/separated	2.23	1.49– 3.32	1.07	0.87–1.32
Smoking status				
Never (reference)	1		1	
Current	0.71	0.63– 0.81	0.76	0.67–0.87
Ex (<1)	0.73	0.48– 1.10	0.82	0.54–1.24
Ex (>1 year)	1.41	120–166	1.19	1.01–1.40

Source: Martinez et al. 1999.

Being overweight is a major risk factor explaining the high prevalence of hypertension in western populations⁶ with a population attributable risk percentage that ranges from 11% in Italy to 25 % in the USA (Geleijnse et al. 2004). A low amount of physical activity also affects blood pressure level, particularly in the UK and the USA.

4.5 Other social determinants of health: employment and housing

Differences in health within and across countries may be better understood through a closer examination of living conditions, being important determinants of health and wellbeing. Among these consist of employment (including unemployment) and housing (including homelessness). The following sections aim to identify the evidence for and explain the drivers behind the impact of employment and housing on health.

Employment, unemployment and health

Among the most important social determinants of health include unemployment, stress, and work (WHO 2003). There is a broad consensus that unemployment contributes to a significant decline in health and wellbeing. Similarly, a plethora of literature supports the strong link between stress (typically prolonged periods) and mental and physical health problems. Work, on the other hand, while most often associated with positive characteristics such as income, structure, and feelings of accomplishment, it can also lead to stress, anxiety and other mental, in addition to physical, health problems. A simplified model of the relationship between employment, unemployment, stress and mental health problems can be seen below (Figure 4.4).

⁶ Finland, Italy, the Netherlands, UK and the USA.

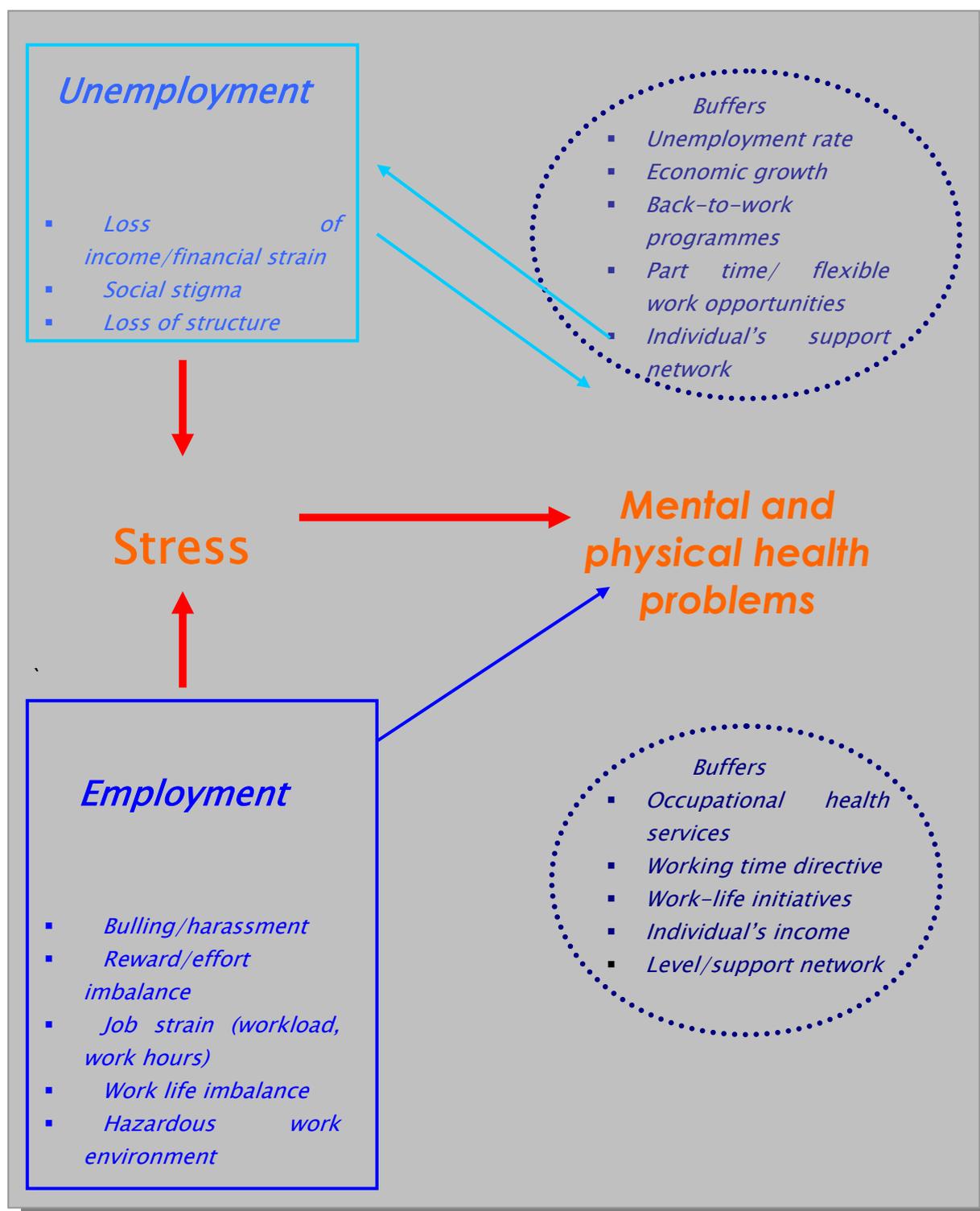
Unemployment

Unemployment is associated with poor health status and increased chance of poor mental health, social exclusion (Kessler et al. 1987; Warr 1987) and suicide (Blakely 2003) (See Section 4). It is largely agreed that the relationship between unemployment and mental health problems is bidirectional, or more likely, circular and reinforcing. Evidence from panel data support the claim for a causal relationship between unemployment and worsening life satisfaction in Germany, and symptoms of psychological distress in Britain (e.g. Thomas 2005), which appears stronger for men than for women.

Unemployment may often result from both mental and physical disabilities. In Europe, about 25% of new disability benefits are due to mental conditions (Grammenos 2003). Furthermore, the unemployment rate of people with moderate illness or disability is twice that among those with no disability while those with severe illness or disability have three times the unemployment rate (Grammenos 2003).

Rates of unemployment vary across the EU and the three candidate countries (see Figures 4.5 and 4.6). In 2004 the unemployment rate was 9% in the EU. The highest rates of unemployment can be found in the new member states, specifically, Poland (18.9%), Slovakia (18.2%), Lithuania (11%), with Spain as the exception, with 10.9% (Eurostat 2005). Long-term unemployment, 12 consecutive months or more (an indicator of social exclusion), varies widely across Europe.

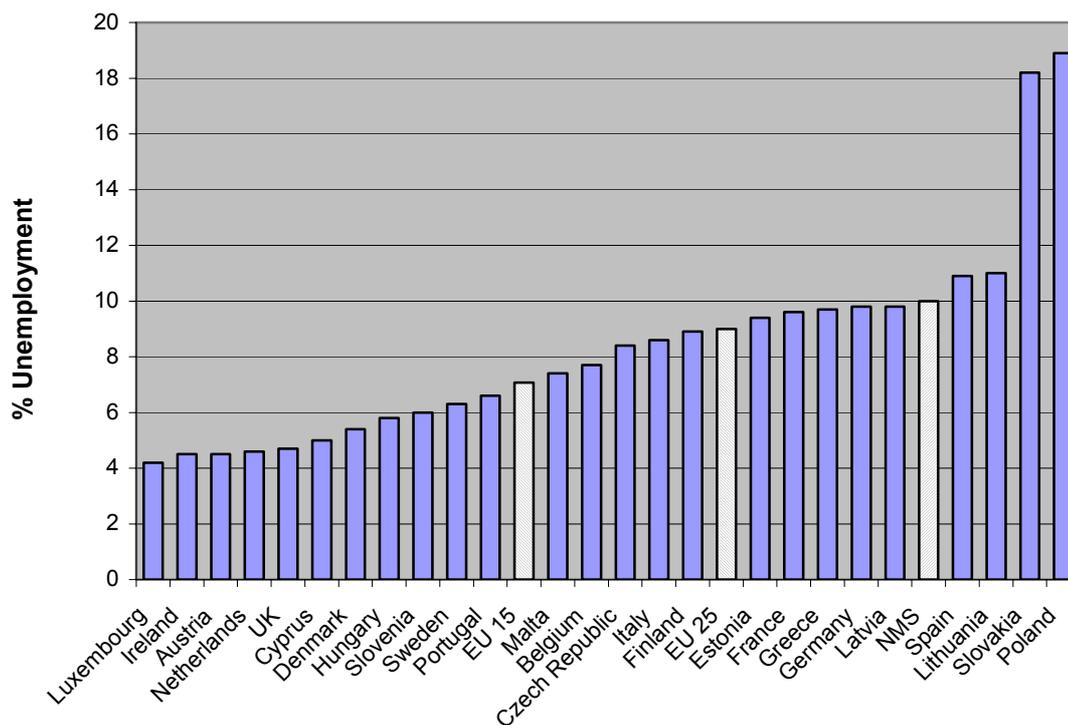
Figure 4.4 Flow chart depicting employment, unemployment and health



Slovakia (11.1%), Poland (10.7%) and Lithuania (6.1%) have the highest rates of long-term unemployment, followed by Greece (5.1%) and Italy (4.9%) (2003). While long-term unemployment in Romania is close to the EU average, in Bulgaria it is quite high with 8.9%. In recent years, levels of employment in several countries, particularly new Member States and the three Candidate Countries has fallen, with a corresponding increase in unemployment (Weiler 2005).

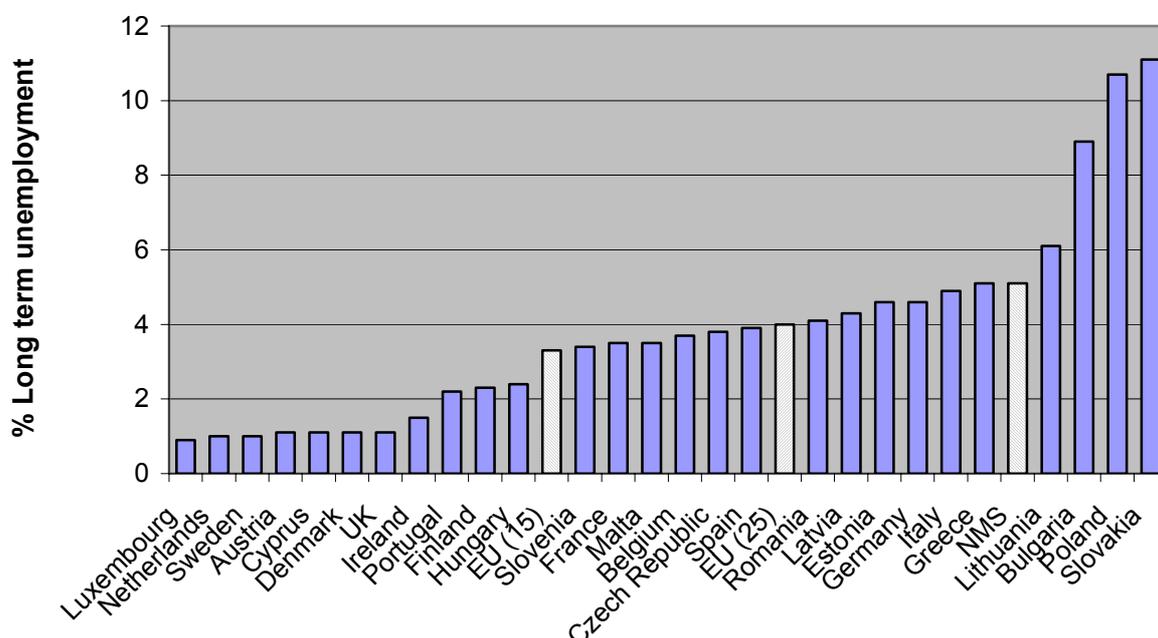
In those countries where there are high levels of unemployment, it is much more difficult for individuals who suffer from physical or mental health problems to find employment. Therefore with high competition for available jobs, it is less likely that individuals with any limitation, particularly mental health problems that are often associated with social stigma, will find work (Whiteside 1988).

Figure 4.5 Unemployment rate, 2004



Source: WHO Health for All 2005

Figure 4.6 Long-term unemployment rate (12 months and more as a percentage of the active population), 2003



Source: WHO Health for All 2005

Work and stress

With a changing workplace in Europe that is signified by a transition from industrial to information-based work, in addition to an ageing and an increasingly culturally diverse workforce, new challenges are being placed on workers and employers. Instead of the physical hazards that previously dominated the ‘unhealthy workplace’ framework, now mental health has become the focus of healthy workplace initiatives.

In the EU, work-related stress is now believed to affect one-third of the workforce (Ivanov 2005), and high job stress is associated with poor mental health (See *Section 5* on Mental Health Policy in the EU). The top three reasons for absenteeism in Europe are mental health problems and work-related stress, musculo-skeletal problems, and cardiovascular disease (McDaid et al. 2005). Mental health problems are beginning to surpass musculo-skeletal problems (e.g. chronic back pain) as the leading cause of days absent from work in Europe (Wynne and MacAnaney 2004). At the same time, an estimated 16% of all cardiovascular disease in men and 22% in women may be attributed to work-related stress in Spain (European Foundation for the Improving of Living and Working Conditions 2005). In Sweden, mental health problems account for around 27% of all cases of long-term sick leave, in the Netherlands 35% of those leaving work did so because of mental health problems, and in Austria between 1993 and 2002 the number of absent days due to

mental health problems increased by 56% (McDaid et al. 2005). Also in Spain, between 50 and 60% of sick leave and disability claims are due to stress at work (McDaid et al. 2005).

Absenteeism due to mental health problems is not only becoming more common than that caused by physical illness or injury, but it is associated with longer periods of absence, particularly for depression. One study found that the average duration of absence from depression was 95.2 days compared to 65.6 days for other mental health problems (Dewa 2002).

There are several possible characteristics of a workplace that may cause stress, which may then lead to other mental health problems. Some of the possible causes of stress include: job functions, job insecurity, perceived lack of support, level of empowerment in the decision-making process, bullying or harassment, job strain (i.e. workload and number of hours working), match between workers' skills and job requirements, poor working conditions (exposure to noise, heat, dangerous substances), work-life imbalance (including social and family roles) and an imbalance between reward and effort (Gabriel and Liimatainen 2000; Michie and Williams 2003; McDaid et al. 2005; Virtanen et al. 2002; Godin and Kittel 2004).

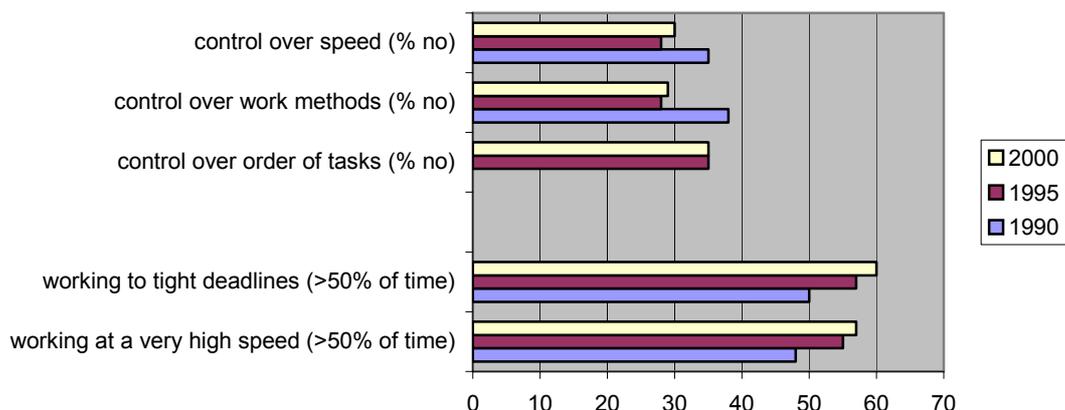
European surveys indicate a worsening of these problems: an increase in the incidence of physical violence, bullying and sexual harassment in the workplace; and an increase in other risks for work-related stress such as tight deadlines and working at a very high speed (in seven countries surveyed⁷ – see Figure 4.7) (European Foundation for the Improving of Living and Working Conditions 2005).

The number of hours worked is linked to work-related stress. The number of 'usual' hours worked per week varies somewhat across Europe. In 2003 men in the UK reported working the most hours per week (44.6 hours) with the lowest seen in the Netherlands (39 hours). Women appear to work longest hours in Lithuania (42.2 hours) compared to the lowest of 36.6 hours in Italy (Eurostat, European Labour Force Survey 2003).

While the costs of mental health problems are borne in multiple sectors such as legal system, health and social care, and education, by far the most important costs from mental health problems are due to lost productivity – which is estimated to be between 60 and 80% (McDaid et al. 2005). Therefore the implications of work-related stress and mental health problems are considerable.

⁷ Data are from the European Working Conditions Observatory (EWCO) network of seven European countries: Denmark, Finland, France, Germany, the Netherlands, Spain and Sweden.

Figure 4.7 Risks for work-related stress in seven countries, 1990–2000



Source: European Working Condition Surveys, European Foundation for the Improvement of Living and Working Conditions

Housing and health

Housing is an important determinant of health, with substandard housing and poor living conditions posing significant threats to health (Holland and Stewart 1997; Rosen 1993; McKeown 1979).

The World Health Organization (1998) has identified nine features of the housing environment that have important direct or indirect effects on the health of their occupants (WHO 1998):

- the structure of the shelter, including the extent to which it protects the occupants from the environment;
- provision of adequate water supplies;
- provision of proper sanitation and waste disposal;
- the quality of the housing site;
- overcrowding which can lead to household accidents and increased transmission of airborne infections such as acute respiratory infectious diseases, pneumonia and tuberculosis;
- the presence of indoor air pollution associated with fuels used for cooking and heating;
- food safety standards, including adequate provision for storing food to protect it against spoilage and contamination;
- vectors and hosts of disease associated with the domestic and peridomestic environment; and
- the home as a workplace—where the use and storage of toxic or hazardous chemicals and unsafe equipment may present health hazards.

The impact of housing on health in CEE is especially significant. Within the last decade there were dramatic changes to housing arrangements due to large-scale privatisation of

the housing sector, and a lack of government regulation coupled with general economic and social crisis. These rapid changes led to visible deterioration of housing stock, with lack of repairs and maintenance of housing, and a decline in new housing construction. In the late 1990s in the CEE countries an estimated 34 million people resided in large housing estates, largely prefabricated blocks of flats, compared to only 6 million in western Europe (European Academy of the Urban Environment 1998). An estimated 40–50% of CEE population live in this type of housing, typically constructed with low quality materials with inadequate construction methods and are not well maintained (Braubach and Bonnefoy 2003). Also, problems with securing affordable housing are widespread.

In countries of western Europe, problems with housing are prevalent, although not as visible. For instance, the trend towards decentralisation in many countries shifted responsibilities for housing to local authorities, although at local level the appropriate expertise may not be well established. Furthermore, many countries have considerable housing stock that is more than 30 years old remaining from post-war reconstruction that needs repair (Bonnefoy et al. 2003). For example, the UK is faced with deteriorating housing stock that was rapidly and inadequately constructed after the second World War (Holland and Stewart 1997). However advances in health and safety rating systems – the Housing Health and Safety Rating System – and the use of house condition surveys provide a good method for assessing a building and provide basis for action against unacceptable housing conditions. Also the Office of the Deputy Prime Minister in UK recognises that decent homes contribute to health and well-being, and has outlined the following target: by 2010 all social housing will be in decent condition (i.e. warm, weatherproof, with reasonably modern facilities), with most of the improvement taking place in deprived areas; and increase the proportion of private housing in decent condition occupied by vulnerable groups (Office of the Deputy Prime Minister 2005a). Also, Swedish housing policy aims to guarantee all people the right to good housing in an ecologically sustainable environment (Ministry of Sustainable Development 2004). The National Board of Housing, Building and Planning surveys the housing stock to identify renovation and maintenance needs. Housing allowances are directly paid in Sweden to allow families with low financial capacity to be able to acquire sound and sufficiently large accommodation partly to avoid overcrowding.

Housing and mental health

Environmental and neighbourhood factors, such as pollution, noise level, and crowding impact on mental health (Evans et al. 2003; Bonnefoy et al. 2004). Also, homelessness, lack of control over housing and housing that is not well secured causes anxiety, depression, insomnia, paranoid feelings, and social dysfunction (Krieger and Higgins 2002; Bonnefoy et al. 2004). Symptoms of stress, anxiety, irritability, depression, social misconduct, and attention capabilities at school in children may be related to housing conditions (Krieger and Higgins 2002). Also, stressful housing conditions can aggravate pre-existing psychiatric conditions, and indoor exposure to certain compounds may lead to neuropsychiatric disorders.

High-rise, multiple-family dwellings contribute to mental health problems as a result of social isolation of mothers and inadequate play opportunities for children (Evans et al.

2003). Indicators of poor housing quality such as structural deficiencies, pests, dampness and mould, and housing dissatisfaction are also associated with mental health problems. In light of the strong links between housing and mental health, future research should focus on rigorously evaluating housing improvements for low-income families (Evans et al. 2003).

Sleep disturbance, affecting 20% of adults in Europe, can often be attributed to environmental noise. Such noise at night leads to annoyance during the day, and may have long-term impact on mental health and cardiovascular health (Bonnefoy et al. 2004).

A recent multi-city WHO study found that people are significantly more likely to be depressed and anxious when they live in housing characterised by (Bonnefoy et al. 2004):

- Insufficient protection against noise, vibrations, dampness, droughts, mould, cold in winter
- Overcrowding
- Lack of light or no view of the outside environment
- Impeding socialisation, e.g. because of absence of parks and gardens
- Prone to vandalism
- Other factors related to low socioeconomic status, such as fear of losing the dwelling, having bad image of the neighbours.

It has also been demonstrated that lack of stability or unsatisfactory housing can lead to worsening of mental health. Moreover, people with mental health problems are especially likely to have poor quality housing. In the UK, people with mental health problems are one and a half times more likely to live in rented housing, twice as likely to report dissatisfaction with their accommodation, and four times more likely to report their housing has made their health worse (Office of the Deputy Prime Minister 2004b). Over four out of five people with severe and enduring mental health problems live in mainstream, unsupported housing, with half living alone (Office of the Deputy Prime Minister 2004b).

Certain housing and neighbourhood conditions may lead to feelings of insecurity such as deteriorating buildings, visible trash or graffiti. In Britain, fear of crime has a 'major' impact on quality of life in 7% of the population, with many more reporting 'some' impact (Bonnefoy et al. 2004). Some features of housing that may prevent these negative feelings include windows that close properly, fire escapes, well-lit common areas, and having a window overlooking the street. Findings from the recent multi-city WHO study indicate links between general health and feelings of safety or fear of crime, although this relationship is complex (Bonnefoy et al. 2004).

Housing and physical health

Overcrowding

A recent literature review in the UK on the impact of overcrowding on health highlights a significant body of evidence indicating a relationship between overcrowding and physical health, and less concretely, mental health (Office of the Deputy Prime Minister 2004a). This

review suggests that overcrowding may be associated with child and adult mortality, Sudden Infant Death Syndrome, respiratory conditions in children and adults, meningitis in children, tuberculosis, poor self-rated health, mental health problems (although the evidence is less conclusive), however there are some important gaps in the literature that require further investigation.

Indoor air quality

The effects of poor indoor air quality on health are widely accepted. Exposure to radon and asbestos can cause lung cancer. Environmental tobacco smoke has been linked with asthma, SIDS, respiratory disease, lung cancer, in addition to annoyance and discomfort (Braubach and Bonnefoy 2003; Bonnefoy et al. 2004). Some gas and heating appliances may emit pollutants that can lead to respiratory disease, infections, and asthma. Volatile organic compounds cause respiratory irritation, headache, nausea, organ toxicity and cancer. Adequate ventilation and maintenance of appliances can prevent some of these adverse effects.

Accidents

Accidents that occur in or around the home are a serious public health concern, particularly burns and falls. In Italy in 2000, there were over 4 million home accidents resulting in 6000 casualties and 7 million working days lost (Bonnefoy et al. 2004). Some housing-related risk factors for accidents include exposed heating sources, unprotected windows, slippery surfaces, breakable window glass in sites with frequent contact, poorly designed stairs, and inadequate lighting (Krieger and Higgins 2002). These factors are common among temporary housing for homeless people.

Results of the recent multi-city WHO study suggest that the risk of accidents increases if residents express dissatisfaction with dwelling size or layout, shared bedrooms, temperature too warm or too cold, inadequate lighting or glare, and insufficient kitchen or workspace (Bonnefoy et al. 2004). A link was also found between sleep disturbance and risk of accidents. There is a need for home safety awareness campaigns, and actions to ensure housing features that are potentially dangerous are removed or minimised.

Accessibility

Accessibility of housing as well as important amenities is especially important for older people and people with disabilities to live independently (a significant contributor to wellbeing). In the recent multi-city WHO study, only 27% of respondents viewed their residential building as easily accessible (Bonnefoy et al. 2004). Some governments have implemented special requirements for dwelling units for older people, or other groups who are likely to have poor health. For example, special design requirements can be used in order to improve safety and foster independence for people with limited mobility (Regnier 1993). Furthermore, the WHO identified that residential and urban design often neglects the needs of older people or residents with functional limitations, leading to increased risk of accidents and even social isolation.

Obesity

In light of the obesity 'pandemic' spreading throughout Europe, policy makers are becoming increasingly aware of the importance of facilitating and encouraging healthy, physically active lifestyles. WHO recommends governments to invest in parks, recreational activities, cycle paths, and walkways and facilitate their use. Housing policies are viewed as playing a crucial role in altering what is termed an 'obesogenic' environment (Bonney et al. 2004).

Mould growth

Vast evidence indicates that mould growth, brought on by dampness, is an important risk factor for respiratory illness. Viruses, bacteria and dust mites also flourish in damp conditions. Damp, mouldy homes are associated with higher rates of asthma, headaches and nausea (Krieger and Higgins 2002). Older houses with water damage, and poor social conditions such as large household size, overcrowding, inadequate ventilation, and state rental housing significantly predict damp and mould. Results from the recent multi-city WHO study identified several health problems significantly associated with mouldy homes: fatigue, headache, chronic anxiety, depression, and respiratory symptoms (Bonney et al. 2004).

Temperature

Thermal comfort depends largely on air temperature, humidity, radiant temperature and air speed. Cold indoor temperatures are associated with many health problems, and even death. In the UK, there are about 40–50 000 excess winter deaths per year, in part due to cold indoor temperatures (most often in older homes with inadequate heating) and among low income households (Bonney et al. 2004). In Scotland, over 70% of a sample of individuals from deprived areas reported their home to be "too cold" in the winter (Hopton 1996). Preliminary evidence suggests that about 20% of excess winter deaths in England and in countries of the Commonwealth of Independent States are due to housing conditions (Bonney et al. 2004).

The recent multi-city WHO study found that dissatisfaction with the heating system significantly predicts respiratory health problems. Also, cardiovascular problems and arthritic conditions are affected by temperature-related complaints in winter, persistent mould and fuel poverty. Furthermore, complaints about insulation are associated with insufficient sleep, low self-esteem and decreased appetite (Bonney et al. 2004). Inadequate thermal comfort has also been associated with increased susceptibility to throat infections, as well as annoyance and irritation (Braubach and Bonney 2003).

Homelessness and health

There is a strong association between homelessness and physical and mental health problems and premature mortality. It is important to note that the direction of effect between homelessness and health is often unclear. However it is widely agreed that homelessness is a major public health problem. The prevalence of homelessness varies

across countries, however it appears homelessness has grown in Europe since the 1980s, particularly among young people and women (Wright and Tompkins 2005). It is important to note that different countries use different definitions and criteria for homelessness, therefore making cross-country statistics difficult to compare (Edgar et al. 2003).

There is evidence highlighting the significantly poorer health status of homeless people compared to the general population, regarding diet and malnutrition, substance misuse, mental illness, sexual health, respiratory disease, infectious disease (e.g. HIV), cardiovascular disease, accident and hypothermia (George et al. 1991; Gill et al. 1996; Martens 2001; Office of the Deputy Prime Minister 2005b; Plearce and Quilgares 1996). Chronic diseases such as seizures, chronic obstructive pulmonary disease, arthritis, and other musculoskeletal disorders are common among homeless people. The problem of multiple morbidity adds further complexity to the health needs among homeless populations (Wright and Tompkins 2005).

Homeless people tend to have problems obtaining adequate health care and may experience barriers to access resulting from discrimination, appointment procedures, and financial constraints (Wright and Tompkins 2005). Conditions requiring uninterrupted treatment such as hypertension, diabetes, TB, HIV, addiction and mental illness are often inadequately controlled and difficult to manage without a stable residence (Hwang 2001; McMurray-Avila et al. 1998).

A review of evidence from Canada highlights some important health effects of homelessness (Hwang 2001). Some specific risk factors associated with homelessness include inadequate footwear, prolonged exposure to moisture, long periods of walking and standing, and repetitive minor trauma, which predispose the individual to the development of skin and foot diseases. Crowded shelters can lead to infestations with scabies and lice, and facilitate the spread of infectious diseases like TB. Extreme temperatures may lead to frostbite and hypothermia in colder climates, or sunburn or heatstroke in hot weather. Also, oral and dental health is often poor. Finally, violence and unintentional injury represent leading causes of mortality and morbidity among homeless men.

Mental health problems represent both a significant risk factor for, and an effect of, homelessness. A cross-country review of health in homeless populations over the past 50 years found that the most common mental health problems among homeless people differ across countries, but are typically depression, affective disorders, substance abuse, psychotic disorders, schizophrenia, and personality disorders (Martens 2001). Studies from Canada and US indicate that prevalence of schizophrenia among homeless people ranges from 6–13%, whereas affective disorders may be present in between 20–40% of homeless populations (Hwang 2001). In the UK 9% of homeless households were identified to be in priority need due to mental illness (Office of the Deputy Prime Minister 2005b). Alcohol use disorders are much more widespread, with lifetime prevalence rates of about 60% in Canada (Hwang 2001). At least 70% of homeless people in Sweden have a problem with drug or alcohol misuse, 35% have mental problems, and a quarter have both mental and drug or alcohol problems (Martin 2003). In the UK, one in three problem drug users are homeless or in need of housing support (Office of the Deputy Prime Minister 2005b). Also

over 75% of rough sleepers in London had used a drug and around a half of rough sleepers were dependent on a drug, excluding alcohol (Office of the Deputy Prime Minister 2005b).

4.6 Inequality in access to health care services

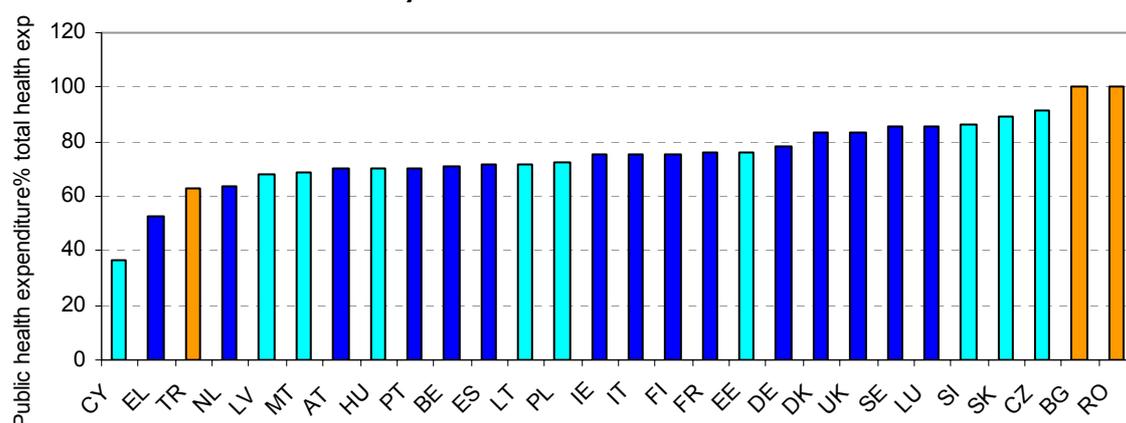
Universal coverage of the population for a fairly comprehensive package of medical services is a fundamental policy goal within the EU. Governments are not only committed to pursuing the efficient delivery of high quality medical care, but also to ensuring equitable access to these services.

In light of increasing social inequalities in health in many European countries, there is growing interest in assessing the extent to which the health care system should play a role. For, differences in access to health services across socioeconomic groups may exacerbate existing health inequalities. Therefore, consideration of the extent of inequalities in accessing health care services is essential in understanding the broader goal of health equity. The objective of this section is to analyse to what extent equity in access to health care is achieved in Europe.

Health care financing and delivery across Europe

The amount of public health expenditure as percentage of total health expenditure varies from 36.6% in Cyprus and around 50% in Greece to 100% in Romania and Bulgaria⁸ and no systematic differences across Europe were identified (Figure 4.8); on average, public expenditures appear larger in central and eastern Europe.

Figure 4.8 Public health expenditure as % of total health expenditures in Europe, 2002 or latest year available^a



^a Notes: the latest year available was 1994 for Bulgaria, 2001 for Slovenia and 2000 for Turkey. **Source:** WHO Health for All 2004.

⁸ Although it is unlikely that expenditure estimates are accurate. For example, this figure does not account for the significant level of informal payments in these countries.

Availability of health care resources is a prerequisite for achieving equal access across the population. There is no clear pattern between western and CEE countries in the number of hospitals and hospital beds per 100 000 inhabitants (Table 4.5). The number of hospitals per 100 000 ranges from 0.9 in Sweden to 16.7 in Cyprus, and the number of beds from 255 in Turkey to 892 in Germany. The number of hospitals and hospital beds are larger among the new Member States than in the EU-15, consistent with the literature indicating an oversupply of health care resources in this region.

In addition to limited supply of health care resources, geographical distance to hospital might be a barrier in fulfilling the goal of universal access to health care. In the EU-15 more than 50% of citizens live close to hospitals (the distance can be covered in less than 20 minutes either by car, public transport or foot). The proportion lowers somewhat for the new Member States and three Candidate Countries, where 38% of citizens have easy access to hospitals (Alber and Kohler 2004). Citizens of the EU-15 are more likely to reach hospitals by using either their cars or public transport, whereas in the new Member States and three candidate countries it is more common to bridge distances by foot.

Table 4.5 Number of hospital and hospital beds per 100 000 inhabitants in Europe in 2003 or the latest available year

	Hospital beds per 100 000	Hospitals per 100 000
Austria	834.1	3.4
Belgium	699.0	2.2
Denmark	413.4	1.3
Finland	724.9	7.3
France	780.1	5.3
Germany	892.7	4.4
Greece	471.7	3.1
Ireland	351.5	2.5
Italy	411.8	2.2
Luxembourg	676.7	8.4
Netherlands	457.7	1.2
Portugal	363.7	2.1
Spain	360.6	1.9
Sweden	522.0	0.9
UK	421.8	2.7
Cyprus	436.3	16.7
Czech Republic	855.5	3.6
Estonia	595.3	3.7
Hungary	783.5	1.8

Lithuania	868.2	5.6
Latvia	781.4	5.6
Malta	482.2	2.5
Poland	557.1	2.2
Slovakia	732.3	2.6
Slovenia	495.6	1.4
Bulgaria	628.5	3.8
Romania	656.5	1.9
Turkey	255.7	1.7
EU-15	558.8	3.3
NMC	658.7	4.6
CC3	513.6	2.5

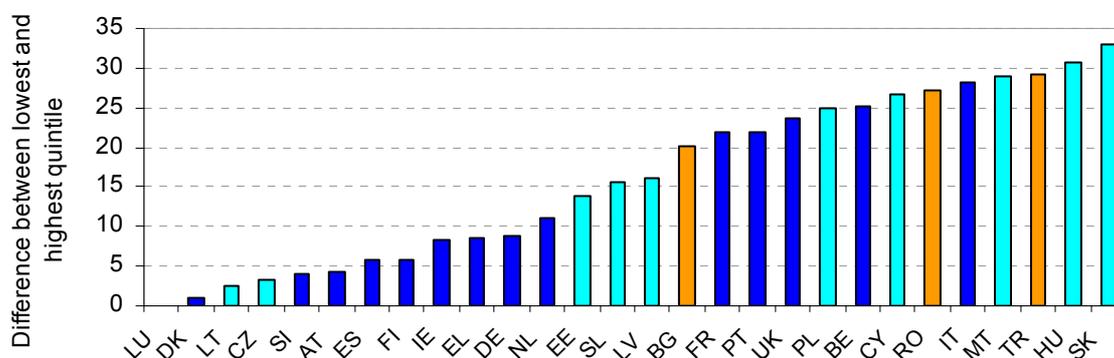
Source: WHO Health for All 2004.

Easy access to primary care is secured for 85% of the EU-15 citizens but only for 62% of the citizens in new Member States and Candidate Countries. In the EU-15 only in Portugal and Spain more than 30% of the respondents reported to travel more than 20 minutes to reach a primary care facility. In the new Member States and three Candidate Countries the countries with a smaller percentage of citizens that report easy access (< 40%) are Estonia, Turkey, Lithuania and Latvia (Alber and Kohler 2004).

Socioeconomic status and proximity to health services

To achieve equal access to health care, proximity to hospital or primary care should not depend on individual socioeconomic characteristics such as income and economic activity. However, in some EU-15 and almost all new Member States and three Candidate Countries people with higher income report easier access to hospitals. The accessibility gap in the EU-15 between the highest and lowest income quartile is higher than 20% in Belgium, France, Italy, Portugal and the UK; in the new Member States only Czech republic, Slovenia, Estonia, Lithuania, and Latvia the difference is less than 20%, but in Hungary and Slovakia is even larger than 30%.

Figure 4.9 Proximity to hospitals: difference between lowest and highest income quartile



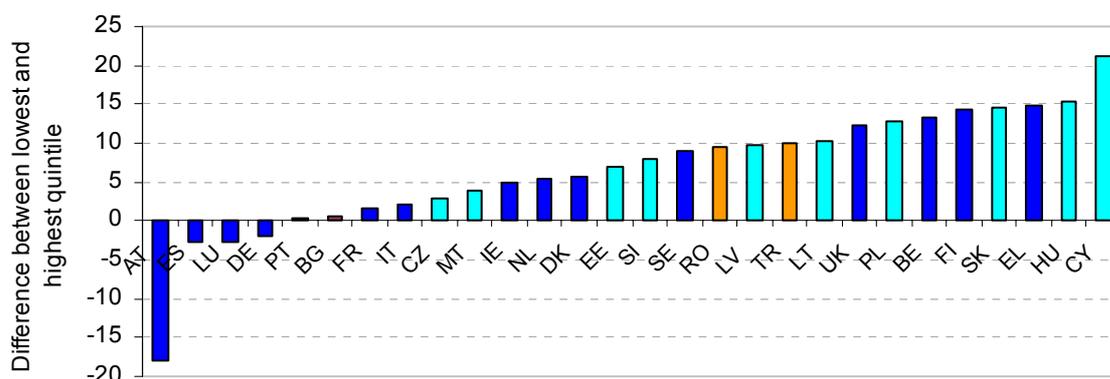
Source: Eurobarometer 52.1, Q17: Candidate Countries Eurobarometer 2001.1, Q25.

Unemployed and retired people have on average greater difficulty in reaching hospitals than the employed in all European countries, but the difference is more marked in the new Member States and the three candidate countries (Alber and Kohler 2004).

For proximity to general practitioners the level of income-related inequalities is lower in all countries. The average difference between the lowest and highest income quartile is 2.7% in the EU-15, and 11.9% in the new Member States; but large heterogeneity is observed across the EU-15 countries (Figure 4.10). Individuals with lower income have significantly easier access in Austria (17.9% difference favouring lower income groups), but the reverse is true in Greece (14.9), Finland (14.4), Belgium (13.4%), and the UK (12.3). In the new Member States and the three Candidate Countries, people with higher income live closer to a doctor, in particular in Cyprus (21.2%), Hungary (15.5%), Slovakia (14.6%), and Poland (12.9%).

Unemployment does not seem to be related to greater difficulties in reaching a general practitioner, but working people have on average easier access to a doctor than the retired in almost all European countries. The gap tends to be larger among the new Member States but differences are significant almost everywhere (Alber and Kohler 2004).

Figure 4.10 Proximity to general practitioners: difference between the lowest and highest income quartile



Source: Eurobarometer 52.1, Q17: Candidate countries Eurobarometer 2001.1, Q25.

Inequity in access to health care

European countries finance the majority of their health services from public sources and embrace the equity principle that health care should be allocated according to need, and not on the basis of willingness or ability to pay for the services. Yet, notable differences in the characteristics of each health care system are observed. The increasing tension between affordability and equity has encouraged many countries to re-examine their public-private mix and implement reforms that aim at improving efficiency while maintaining equity.

Socioeconomic inequalities in health care use have been detected in Estonia in 1999 (Habicht and Kunst 2005). Individuals living in rural areas were more likely to visit a GP or to use telephone consultations but less likely to seek specialist care. Women used all health services, except hospital care, more intensively than men. Education, income and economic activity were important determinants of health use even after controlling for health needs. People with a more favourable socioeconomic status were more likely to use all services but hospitals.

In Bulgaria, there is no income-related inequality in the total number of doctor consultation after adjusting for illness; the only exceptions are worse-off women who tend to consult more often. For the probability of seeking medical care, it emerges that rich people, especially men, seek secondary level care more often than poorer individuals.

The remainder of this section will present results from an international comparison of horizontal equity: the degree of inequality in use is measured by income, after standardising for (measurable) need differences. Inequity is measured using concentration indices of need-standardized distributions for total doctor visits and separately for general practitioner and medical specialist visits, inpatient care and dentist visits in 21 OECD

countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Mexico, the Netherlands, Norway, Portugal, Sweden, Spain, Switzerland, the UK and the USA.

Physician visits

There are important differences between countries in rates of doctor visits (Van Doorslaer et al. 2004). On average, more than 70% of the adult population visited a doctor in the last year; this proportion is lower in Greece (63%), the US (68%), and especially in Mexico (21% only). The proportion visiting a GP is fairly stable at around 70–80%, except in Greece and Switzerland, while there is much more variation in specialist visits. The percentage of people visiting a specialist ranges from 20% in Ireland or 30% in Denmark and Norway to 60% in Austria and France. In high-use countries like Germany, Hungary, France, Belgium and Austria the frequency of visits is around 7–8 doctors' visits per year, which is twice the rate in low-use countries like Finland, Switzerland, or Denmark. These cross-country differences in utilisation rates are not correlated with doctor/population ratios. However, differences in remuneration types and cultural differences in seeking medical advice might partly contribute to these differences.

When considering within-country variations in use by income, in virtually every OECD country, low-income groups are more intensive users of doctor services than higher income groups. The differences vary by country but, on average, the bottom income quintiles report about 50% more doctor visits per year than the top income quintiles.

However, the probability of doctor visits is higher among richer groups after standardizing for population's needs (as indicated by positive HI⁹ index values for most countries; Figure 4.11). The HI indices are significantly different from zero (indicating inequality) in Finland, Italy, Netherlands, Norway, Portugal, and Sweden. No violation of the horizontal equity principle (i.e. the HI is not significantly different from zero) is found in Austria, Belgium, Denmark, France, Germany, Greece, Hungary, Ireland, Spain, and the UK. This means that in about half of the countries studied, given the same need, the rich are more likely to see a doctor than the poor. The level of income-related inequity in total number of doctor visits seems to be less pro-rich than when the probability of a doctor visit is measured (Figure 4.12). Pro-rich inequity was found to be statistically significant only in Finland, Portugal, Sweden and Austria, while the reverse is seen in Belgium and Ireland (pro-poor).

The probability of contacting a GP is fairly equitably distributed by income, with a few pro-rich exceptions (Finland, and Portugal). Pro-poor inequalities occur in countries where the access to a medical specialist is direct (i.e. Greece, Spain and Germany where there is no

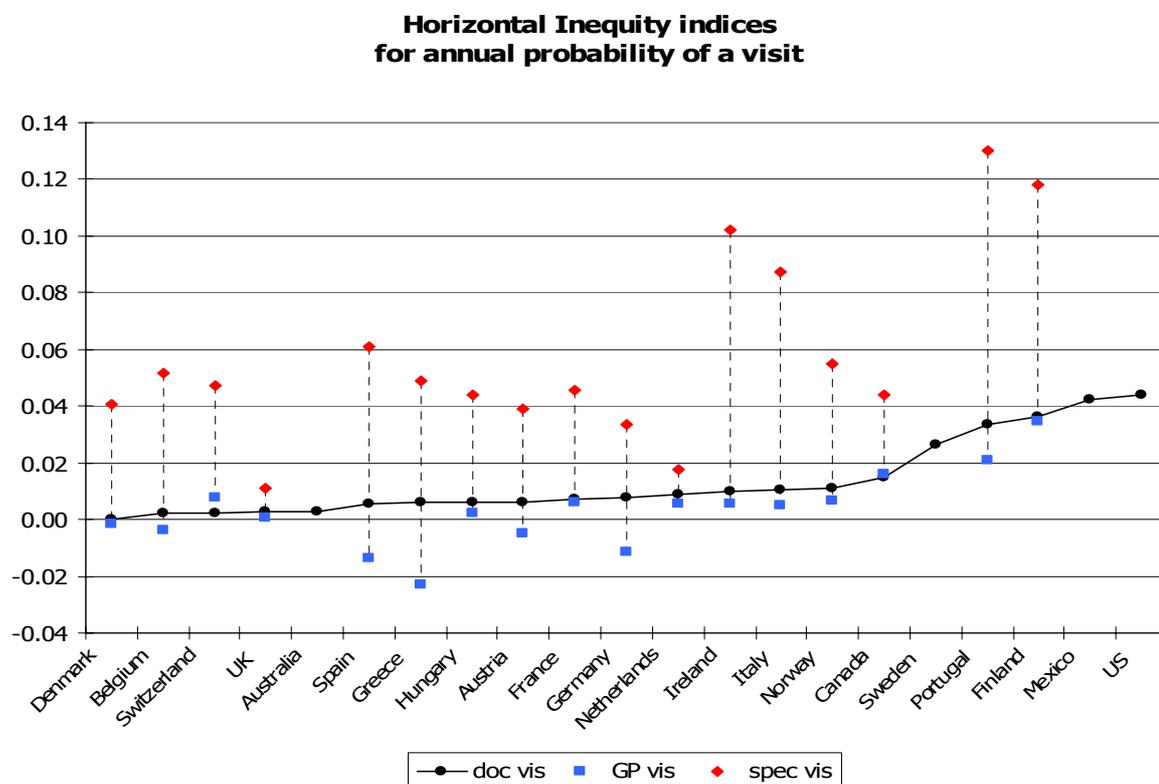
⁹ *HI* is defined as the difference between the degree of income-related inequality in *actual* hospital admissions and the income-related inequality in *need-expected* use. Horizontal inequity is pro-rich and favours the better-off when the horizontal inequity index, *HI_{hw}*, is positive and pro-poor when negative.

gate-keeping systems). But, on the whole, the likelihood of seeing a GP appears distributed according to need, and is not influenced by income.

The need-standardized distributions of total GP visits (Figure 4.12) are significantly pro-poor in ten countries. In only one country, Finland there is pro-rich inequity (see further discussion of this result below). Therefore, given that the probability of seeking GP care is equitably distributed, most of the pro-poor distributional pattern in mean visits must be due to the pro-poor conditional use. But. In almost every OECD country, the probability of seeing a GP is fairly equally distributed across income, but once people go, the poor are more likely to consult more often.

The pattern is very different for specialist visits; in all countries, the better-off have a significant higher probability of visiting a specialist. Although there are important differences between countries in the degree to which this occurs, access to specialist services seems not equally distributed across income groups. In all countries, controlling for need, the rich are more likely to seek specialist care than the poor, and especially so, in countries that offer options to seek private care like Finland, Portugal, Ireland, Italy and Spain, but not only. Indeed, pro-rich inequity in specialist visits was observed also in countries without such private options, and with GP gatekeepers, like Denmark, Norway, Sweden, and to much less extent also in the Netherlands and the UK.

Figure 4.11 Horizontal inequity indices for annual probability of a doctor visit, 21 OECD countries

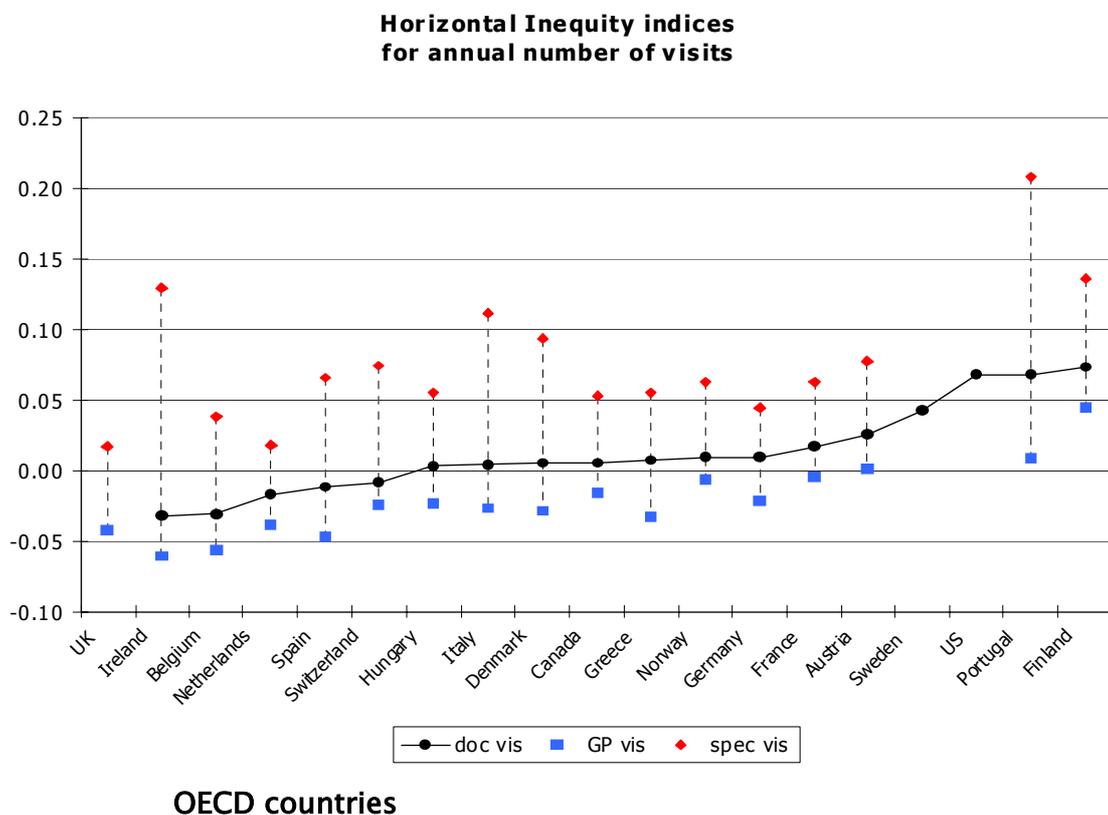


Notes: Countries ranked by HI for doctor visits. HI indices are estimated concentration indices for need-standardized use. Positive (negative) index indicates pro-rich (pro-poor) distribution. German GP and specialist indices for ECHP 1996.

Source: Van Doorslaer, Masseria, and Koolman 2005.

The level of pro-rich inequity is even higher when the total number of specialist visits is measured. Therefore, in this case, the conditional use reinforces the pro-rich patterns induced by the inequitable probability distribution. In virtually all countries, distributions are significantly in favour of the higher income groups. The only exceptions are Norway, the Netherlands and the UK, where the HI indices are positive but not significantly different from zero.

Figure 4.12 Horizontal inequity indices for annual mean number of visits, 19



Notes: Countries ranked by HI index for doctor visits. HI indices are estimated concentration indices for need-standardized use. Positive (negative) index indicates pro-rich (pro-poor) distribution. German GP and specialist indices for ECHP 1996.

Source: Van Doorslaer, Masseria, and Koolman 2005.

Inpatient care

The probability of being admitted to hospital varies across OECD countries and for the European ones it ranges from 5% in Greece to 14% in Austria (Van Doorslaer et al. 2004). Distributional patterns are different for the number of nights spent in hospitals; among the European countries those with the lowest average numbers of nights spent in hospitals are Portugal (0.63) and Greece (0.66), while those with the largest are Hungary (2.5) and Austria (2.01).

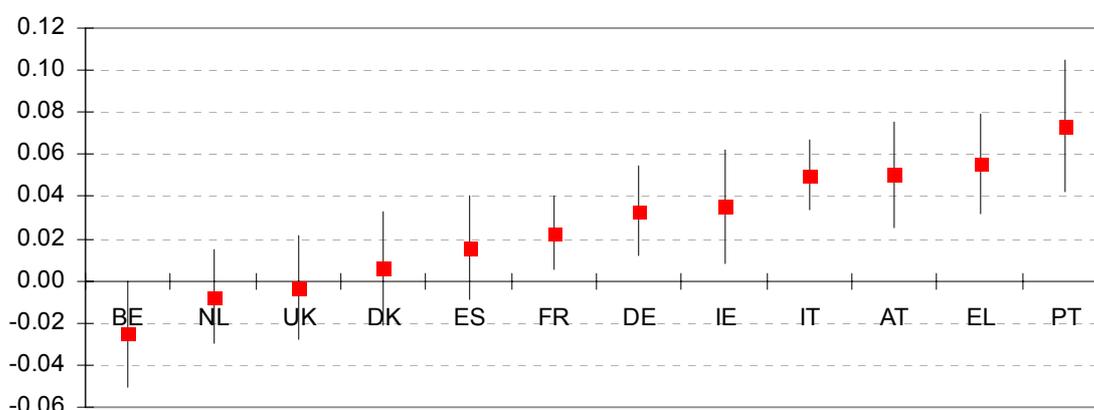
People at the bottom end of the income distribution are more likely to be admitted to hospitals in almost all OECD countries and to spend more nights in hospitals.

The picture is more heterogeneous after standardizing for population's needs (i.e. inequity). For the majority of countries it was impossible to detect any inequity both in the probability and the total number of nights spent in hospitals. This might be due to the very skewed distributions of hospitals care (i.e. many people did not go to hospitals) and the difficulty of explaining length of stay with the information available in these surveys. Significant inequality was found only for the countries with large sample sizes. Individuals with higher income were more likely to be admitted to hospitals in Mexico and Portugal. On the contrary, pro-poor inequity was found in Australia, Canada, Switzerland and the USA (Van Doorslaer et al. 2004).

Different results have been found by Masseria, van Doorslaer and Koolman (2004) by pooling several waves of the European Community Household panel Survey (from 1994 to 1998) for 12 European countries: Austria, Belgium, Denmark, Italy, France, Germany, Greece, Ireland, the Netherlands, Portugal, Spain, and the UK¹⁰. In almost all these countries, the index of horizontal inequity for the probability of hospital admission is positive, indicating income-related inequity in favour of the better-off. The level of inequity is particularly large in Portugal, Greece, Italy, Austria, and Ireland. All these countries, except Austria, offer hospital physicians some way to practise privately alongside the public sector. Belgium is the only country with a negative and statistically significant index, indicating horizontal inequity favouring the poor.

¹⁰ Finland was excluded because data were available only for two years; for Austria data were available only from the second year (1995); for Germany and the UK comparable data were available only for the first three years

Figure 4.13 Horizontal inequity index for the probability of hospital admission in 12 European countries (1994–1998)



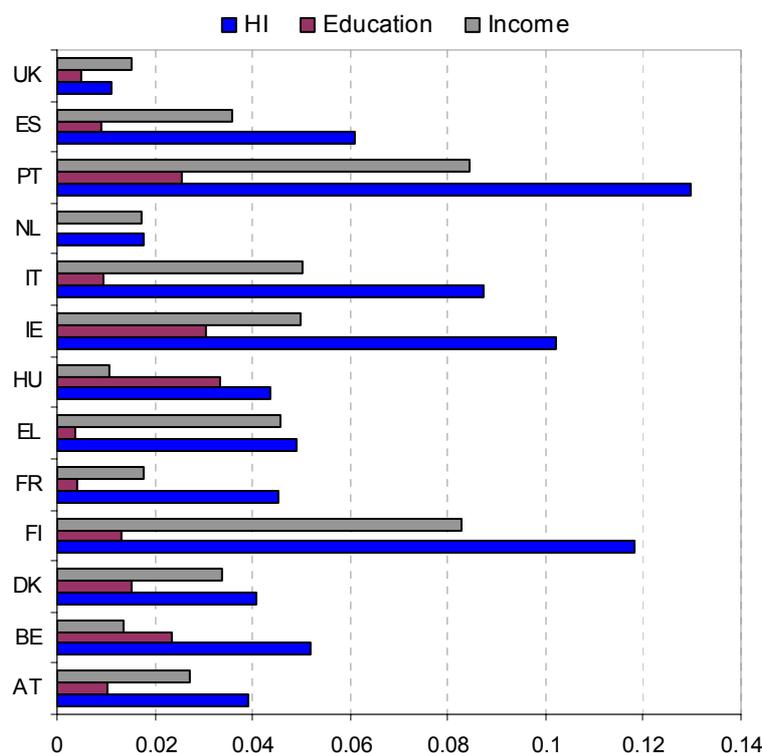
Source: European Community Household Panel.

Understanding the sources of inequity

Education is an important socioeconomic factor that is related to both income and health. Indeed, differences in medical care use by level of education often reflect the utilisation patterns by income. The higher educated, *ceteris paribus*, are more inclined to visit specialists almost everywhere and particularly so in Hungary where the contribution¹¹ of education to the pro-rich inequity in specialist visits is larger than the contribution of income (Figure 4.14). The picture is less clear-cut with respect to GP visits, total doctor visits and hospital care use; contributions are smaller, and most often negative. This means that education appears to be a more important cause of inequality in specialist care than in other health care services.

¹¹ The contribution of each variable to total inequality in specialist visits depends on three factors: (1) the importance of this variable (as indicated by its mean), (2) the extent to which it is distributed across income (as indicated by its concentration index value), and (3) the (marginal) effect of this variable on the number of specialist visits (as indicated by the regression coefficient). A positive (negative) contribution increases (decreases) the overall level of inequity. For example, in Hungary the contribution of education is 0.03, and this means that the inequality in specialist use is 0.03 higher than it would have been if education did not have an effect on use.

Figure 4.14 Contribution of education and income to the overall level of inequality in specialist visits (probability) in Europe



Source: European Community Household Panel.

Differences in employment status might also affect access to medical care, for example by impacting the time costs of using the health system. *Ceteris paribus*, not being in paid employment seems to influence the degree to which utilisation patterns vary by income, and its contribution is generally negative (Van Doorslaer et al. 2004). Individuals receiving a retirement or a disability pension, holding everything else constant (e.g. self-reported health and age), have lower incomes and are less healthy than their working counterparts. Activity status might, therefore, operate as (imperfect) need proxies. However, the difference between needed use and actual use distributions might be driven by the different time costs that people out of work face in comparison with their counterparts.

The impact of activity status on inequalities varies tremendously across countries. In Denmark and Hungary, the pro-poor contribution to inequity of employment status is driven by the retired; the (early) retired in these countries are worse off than those in the same age category who continue working, and also seek more medical care. In Finland, the pro-rich inequity in GP care is caused by the higher utilisation rates of employed versus non-employed; and this is partly due to the inclusion of occupation-based health visits¹², among general primary health care.

¹² A more meaningful disaggregation of doctor visits in Finland by sector reveals a high degree of pro-rich inequity for occupational care and private visits, a very low degree of pro-rich inequity

To understand and interpret the contributions of education and activity status, a thorough understanding of health care policies, and also labour markets and social policies in each of the countries is necessary.

Inequality in access to health care among the elderly population

There have been some country-specific studies on inequalities in access to health care among older people (e.g. Morris et al. 2005; Fernandez-Mayoralas et al. 2000; Nelson et al. 2002; Santana 2000; Allin 2005). In England, the effect of age on the use of health care (GP, outpatient and inpatient care) is not linear (i.e. the probability of accessing health care does not increase with age) and the pattern varies between men and women (Morris et al. 2005). Men over 60 years old have a higher probability of using health care (especially inpatient and outpatient care) than women. Allin (2005) analyses the level of inequity in health care services (GP, specialist, dental and hospital care) among individuals over 65 years in the UK and finds that people on higher income are more likely to seek medical care than the worse-off. In Spain (Fernandez-Mayoralas et al. 2000) retirees, pensioners and housewives have a higher probability of consulting a doctor than employed individuals. Hospital care is mainly associated with population need, but is more frequent in urban settings and among people with a lower level of education.

In 9 European countries (Sweden, Denmark, Germany, the Netherlands, Switzerland, Austria, Italy, Spain and Greece) the average number of consultation with physicians (in the last 12 months) is associated with age: 82% of the people in the age category 50–52 years had at least one visit, but the proportion increases to 94% at the age of 85+ (Santos Eggimann et al. 2005).

in outpatient care visits and a pro-poor distribution of health centre contacts (Unto Häkkinen, personal communication).

References

- Alder, N. E., Newman, K. (2002). Socioeconomic disparities in health: pathways and policies. *Health Aff* 21(2): 60–76.
- Alber, J., Kohler, U. (2004). Health and care in an enlarged Europe. Dublin, European foundation for the improvement of working and living conditions.
- Allin, S (2005). Equity and inequality in health care use among older people in the United Kingdom paper presented at Institute for Social and Economic Research, BHPS–2005 Research Conference, 1 July 2005.
- Artnik, B., Vidmar, G., Premik, M. (2004). A study on socioeconomic determinants of mortality in Slovenia, Global Forum for Health Research, Forum 8, Mexico City: <http://www.globalforumhealth.org/Forum8/Forum8-CDROM/Posters/Artnik%20B%20F8-079.doc>.
- Asthana, S., Gibson, A., Moon, G., Brigham, P., Dicker, J. (2004). The demographic and social class basis of inequality in self-reported morbidity: an explanation using the Health Survey for England. *J Epidemiol Community Health* 58: 303–307.
- Avendano, M., Kunst, A.E., Huismna, M., Van Lenthe, F., Bopp, M., Borrell, C., Valkonen, T., Regidor, E., Costa, G., Donkin, A., Borgan, J.K., Deboosere, P., Gadeyne, S., Spadea, T., Andersen, O., Mackenbach, J.P. (2004). Educational level and stroke mortality: a comparison of 10 European populations during the 1990s. *Stroke* 35: 432–437.
- BBC (2005). Cancer doctors are 'stressed out': <http://news.bbc.co.uk/1/hi/health/4181062.stm>
- Balabanova, D. C., McKee, M. (2002). Self-reported health in Bulgaria: levels and determinants. *Scand J Public Health* 30(4): 306–312.
- Balabanova D, McKee, M. (2002). Access to health care in a system transition: the case of Bulgaria. *Int J Health Plann Manage*, 17(4): 377–95.
- Blakely, T. A., Collings, S.C., Atkinson, J. (2003). Unemployment and suicide. Evidence for a causal association? *J Epidemiol Community Health* 57(8): 594–600.
- Bobak, M., C. Hertzman, Z. Skodova, M. Marmot (1999). Socioeconomic status and cardiovascular risk factors in the Czech Republic. *Int J Epidemiol*, 28: 46–52.
- Bobak, M., Blane, D., Marmot, M. (1998). Social determinants of health: their relevance in the European context, Review of Health Promotion and Education Online: Verona Initiative: <http://www.rhpeo.org/ijhp-articles/e-proceedings/verona/2/>.
- Bobak, M., Pikkhart, H., Rose, R., Hertzman, C., Marmot, M. (2000). Socioeconomic factors, material inequalities, and perceived control in self-rated health: cross-sectional data from seven post-communist countries. *Soc Sci Med*, 51: 1343–1350.
- Bobak, M., Marmot, M. (1996). East–West mortality divide and its potential explanations: proposed research agenda. *BMJ*; 312: 421–425.
- Bonnefoy, X. R., Annesi–Maesano, I., Aznar, L.M., Braubach, M., Croxford, B. (2004). Review of evidence on housing and health. Fourth Ministerial Conference on Environment and Health, World Health Organization.
- Borrel, C., Muntaner, C., Benac, J., Artazcoz. L. (2004). Social class and self-reported health status among men and women: what is the role of work organisation, household, material standards and household labour? *Soc Sci Med* 58: 1869–1887.

- Bosma, H., Marmot, M.G., Hemingway, H., Nicholson, A.C., Brunner, E., Stansfield, S.A. (1997). Low job control and risk of coronary heart disease in Whitehall II (prospective cohort) study. *BMJ* 314: 558–565.
- Braubach, M., Bonnefoy, X. (2003). Health and health perception in relation to housing and housing perception. Healthy Housing: promoting good health, University of Warwick, World Health Organization.
- Cavalaars, A.E., Geurts, J.J., Cialesi, R., Grotvedt, L., Helmert, U., Lahelma, E., Lundberg, O., Matheson, J., Mielck, A., Mizrahi, A., Rasmussen, N.K., Regidor, E., Spuhler, T., Mackenbach, J.P. (1997). Differences in self-reported morbidity by educational level: A comparison of 11 Western European countries. *J Epidemiol Community Health* 52: 219–227.
- Craig, N. (2005). Exploring the generalizability of the association between income inequality and self-assessed health. *Soc Sci Med* 60: 2477–2488.
- Dalstra, J. A. A., Kunst, A.E., Borrell, C., Breeze, E., Ambois, E., Costa, G., Geurts, J.M.M., Lahelma, E., Van Oyen, H. Rasmussen, N.K., Regidor, E., Spadea, T., Mackenbach, J.P. (2005). Socioeconomic differences in the prevalence of common chronic diseases: an overview of eight European countries. *Int J Epidemiol* 34(2): 316–326.
- Department of Health (2002). Mental Health and Employment in the NHS. London, Department of Health.
- Dewa, C. S., Goering, P., Lin, E., Paterson, M. (2002). Depression-related short-term disability in an employed population. *J Occup Environ Med* 44(7): 628–33.
- European Academy of the Urban Environment (1998). A future for the large housing estates. European strategies for prefabricated housing estates in Central and Eastern Europe. Berlin, EAUE.
- European Foundation for the Improvement of Living and Working Conditions (2005). Work-related stress. Dublin, European Foundation for the Improvement of Living and Working Conditions.
- Evans, G. W., Wells, N.M., Moch, A. (2003). Housing and mental health: a review of the evidence and a methodological and conceptual critique. *J Soc Issues* 59: 475–500.
- Fekete, S., Voros, V., Osvath, P. (2005). Gender differences in suicide attempters in Hungary: retrospective epidemiological study. *Croat Med J* 46: 288–293.
- Fernandez-Mayoralas, G., Rodriguez, V., Rojo, F. (2000). Health services accessibility among Spanish elderly. *Soc Sci Med* 50: 17–26.
- Gabriel, P., Liimatainen, M.-R. (2000). Mental health in the workplace. Geneva, International Labour Organization.
- Geleijnse, J. M., Kok, F.J., Grobbee, D.E. (2004). Impact of dietary and lifestyle factors on the prevalence of hypertension in Western populations. *Eur J Public Health* 4(3): 235–239.
- George, S., Shanks, N., Westlake, L. (1991). Census of single homeless people in Sheffield. *BMJ* 302: 1387–9.
- Gerdtham, U. G., Johannesson, M. (2003). A note on the effect of unemployment on mortality. *J Health Econ* 22: 505–518.
- Gill, B., Meltzer, H., Hinds, K. (1996). The prevalence of psychiatric morbidity among homeless adults. London, Office of Population, Census and Surveys.

- Godin, I., Kittel, F. (2004). Differential economic stability and psychosocial stress at work: associations with psychosomatic complaints and absenteeism. *Soc Sci Med* 58(8): 1543–53.
- Grammenos, S. (2003). Illness, disability and social inclusion. Dublin, European Foundation for the Improvement of Living and Working Conditions.
- Gunnell, D., A. Lopatzidis, D. Dorling, H. Wehner, H. Southall, S. Frankel (1999). Suicide and unemployment in young people. Analysis of trends in England and Wales, 1921–1995. *Br J Psychiatry* 175: 263–270.
- Habicht, J., Kunst, A.E. (2005). Social inequalities in health care services utilisation after eight years of health care reforms: a cross-sectional study of Estonia, 1999. *Soc Sci Med*, 60: 777–787.
- HABITAT (1996). Second United Nations Conference on Human Settlements (Habitat II), Istanbul.
- Heijbel, B., Josephson, M., Jensen, I., Vingard, E. (2005). Employer, insurance, and health system response to long-term sick leave in the public sector: policy implications. *J Occup Rehabil* 15(2): 167–76.
- Hemmingsson T., Lundberg, I. (2005). How far are socioeconomic differences in coronary heart disease hospitalisation, all-cause mortality and cardiovascular mortality among adult Swedish males attributable to negative childhood circumstances and behaviour in adolescence? *Int J Epidemiol* 34(2): 260–267.
- Holland, W.W., Stewart, S. (1997). *Public health: The vision and the challenge*. London, UK, The Nuffield Trust.
- Hopton, J., Hunt, S. (1996). The health effects of improvements to housing: a longitudinal study. *Housing Studies* 11(2): 271–286.
- Huisman, M., Kunst, A.E., Mackenback, J.P. (2005). Inequalities in the prevalence of smoking in the European Union: comparing education and income. *Prev Med* 40: 756–764.
- Hwang, S. W. (2001). Homelessness and health. *CMAJ* 164(1): 229–233.
- Ivanov, I. (2005). Mental health and working life. WHO Ministerial Conference on Mental Health Briefing Paper. Copenhagen, WHO Regional Office for Europe.
- Kalediene, R., Petrauskiene, J. (2005). Inequalities in mortality by education and socio-economic transition in Lithuania: equal opportunities? *Public Health* 119(9): 808–815.
- Kessler, R. C., House, J.S., Turner, J.B. (1987). Unemployment and health in a community sample. *J Health Soc Behav* 28(1): 51–9.
- Kopp, M. S., Skrabski, A., Kawachi, I., Alder, N.S. (2005). Low socioeconomic status of the opposite sex is a risk factors for middle aged mortality. *J Epidemiol Community Health* 59: 675–678.
- Kopp, M., Csoboth, C.T., Rethelyi, J. (2004). Psychosocial determinants of premature health deterioration in a changing society: the case of Hungary. *J Health Psychol* 9(1): 99–109.
- Krieger, J., Higgins, D.L. (2002). Housing and health: time again for public health action. *Public Health Matters*, 92(5): 758–768.
- Kunst, A.E., Lahelma, V., Bartly, E., Lissau, M., Regidor, I., Mielk, E., Cardano, A., Dalstra, M., Geurts, J.A.A., Helmert, U., Lennartsson, C., Ramm, J., Spadea, T., Stronegger, W.J., Mackenbach, J.P. (2005). Trends in socioeconomic inequalities in self-assessed health in 10 European countries. *Int J Epidemiol* 34(2): 295–306.

- Lahelma, E., Martikainen, P., Laaksonen, M., Aittomaki, A. (2004). Pathways between socioeconomic determinants of health. *J Epidemiol Comm Health* 58: 327–332.
- Leinsalu, M. (2002). Social variation in self-rated health in Estonia: a cross-sectional study. *Soc Sci Med*, 55(5): 847–861.
- Leinsalu, M., Vagero, D., Kunst, A.E. (2003). Estonia 1989–2000: enormous increase in mortality differences by education. *Int J Epidemiol* 32: 1081–1087.
- Lynch, J., Smith, G.D., Hillemeier, M., Shaw, M., Raghunathan, T., Kaplan, G. (2001). Income inequality, the psychosocial environment, and health: comparisons of wealthy nations. *Lancet* 358: 194–200.
- Mackenbach, J. P., Bos, V., Andersen, O., Cardano, M., Costa, G., Harding, S., Reid, A., Hemstrom, O., Valkonen, T., Kunst, A.E. (2003). Widening socioeconomic inequalities in mortality in six western European countries. *Int J Epidemiol* 32: 830–837.
- Mackenbach, J. P., Huismna, M., Andersen, O., Bopp, M., Borgan, J.K., Borrell, C., Costa, G., Deboosere, P., Donkin, A., Gadeyne, S., Minder, C., Regidor, E., Spadea, T., Valkonen, T., Kunst, A.E. (2004). Inequalities in lung cancer mortality by the educational level in 10 European countries. *Eur J Cancer* 40: 126–135.
- Mackenbach, J. P., Kunst, A.E., Groenhouf, F., Borgan, J.K., Costa, G., Faggiano, F., Jozan, P., Leinsalu, M., Martikainen, P., Rychtarikova, J., Valkonen, T. (1999). Socioeconomic inequalities in mortality among women and among men: an international study. *Am J Public Health* 89(12): 1800–1806.
- Mackenbach, J. P., Martikainen, P., Looman, C.W.N., Dalstra, J.A.A., Kunst, A.E. (2005). The shape of the relationship between income and self-assessed health: an international study. *Int J Epidemiol* 34(2): 286–292.
- Marmot, M. (2002). The influence of income on health: views of an epidemiologist. *Health Aff* 21(2): 31–46.
- Marmot, M. (2005). Social determinants of health inequalities. *Lancet* 365: 1099–1104.
- Marmot, M., Bobak, M. (2000). International comparators and poverty and health in Europe. *BMJ* 321: 1124–1128.
- Marmot, M., Brunner, E. (2005). Cohort Profile: the Whitehall II study. *Int J Epidemiol* 34(2): 251–256.
- Martinez, J. A., Kearney, J.M., Kafatos, A., Paquet, S., Martinez-Gonzales, M.A. (1999). Variables independently associated with self-reported obesity in the European Union. *Public Health Nutr* 2(1a): 125–133.
- Masseria, C., Koolman, X. Van Doorslaer, E. (2004). Income related inequality in the probability of a hospital admission in Europe. ECuity Project III Working Paper, No.13.
- Martens, W. H. (2001). A review of physical and mental health problems in homeless persons. *Public Health Review* 29(1): 13–33.
- Martin, M. (2003). Homelessness: there is a better way (Sweden). Ottawa, Canadian Centre for Policy Alternatives.
- McDaid, D., Curran, C., Knapp, M. (2005). Promoting mental well-being in the workplace: a European policy perspective. *Int Rev Psychiatry* 17(5): 1–9.
- McKeown, T. (1979). *The Role of Medicine: drama, mirage or nemesis*. Oxford, Blackwell.
- Mechanic, D. (2002). Disadvantage, inequality, and social policy. *Health Aff* 21(2): 48–59.

- Michie, S., Williams, S. (2003). Reducing work related psychological ill health and sickness absence: a systematic literature review. *Occup Environ Med* 60(1): 3–9.
- Middleton, N., Gunnell, D., Frankel, S., Whitley, E., Dorling D. (2003). Urban–rural differences in suicide trends in young adults: England and Wales, 1981–1998. *Soc Sci Med*, 57: 1183–1194.
- Ministry of Sustainable Development (2004). Housing and Housing Policy in Sweden. Stockholm, Ministry of Sustainable Development.
- Monden, C. (2004). Socioeconomic health inequalities in Latvia: a cross–sectional study. *Scand J Public Health* 32: 217–223.
- Monks, J., Strube, J., Reckinger, P., Plassman, R. (2004). Framework agreement on work related stress. Brussels, European Social Partners.
- Morris, S., Sutton, M., Gravelle, H. (2005). Inequity and inequality in the use of health care in England: an empirical investigation. *Soc Sci Med* 60: 1251–1266.
- Nelson, T., Livingstone, G., Knapp, M., Manela, M., Kitchen, G., Katona, C. (2002). Slicing the health service cake: the Islington study. *Age Ageing* 31: 445–450.
- Office of the Deputy Prime Minister (2004a). The Impact of Overcrowding on Health and Education: A review of the evidence and literature. London, Office of the Deputy Prime Minister.
- Office of the Deputy Prime Minister (2004b). Mental Health and Social Exclusion. London, Office of the Deputy Prime Minister.
- Office of the Deputy Prime Minister (2005a). Sustainable Communities: Homes for All. London, Office of the Deputy Prime Minister.
- Office of the Deputy Prime Minister (2005b). Sustainable Communities: settled homes; changing lives. A strategy for tackling homelessness. London, Office of the Deputy Prime Minister.
- Pikhart H, M. B., Rose, R., Marmot, M (2003). Household item ownership and self–rated health: material and psychosocial explanations. *BMC Public Health* 3:38.
- Plearce, N., Quilgares, D. (1996). *Health and homelessness in London*. London, King's Fund.
- Preti, A., Miotto, P. (1999). Suicide and unemployment in Italy, 1982–1994. *J Epidemiol Comm Health* 53: 694–701.
- Regnier, V. (1993). *Assisted living housing for elderly: design innovations from the United States and Europe*. New York, Wiley.
- Rosen, G. (1993). A history of public health. Baltimore, Johns Hopkins University Press.
- Santana, P. (2000). Ageing in Portugal: regional inequalities in health and health care. *Soc Sci Med*, 50: 1025–1036.
- Santos–Eggimann, B., Junod, J., Cornaz, S. (2005). Health services utilisation in older Europeans. In Borsch–Supan et al. eds: *Health, Ageing and Retirement in Europe*.
- Silventoinen, K., Pankow, J., Jousilahti, P., Hu, G., Tuomilehto, J. (2005). Educational inequalities in the metabolic syndrome and coronary heart disease among middle–aged men and women. *Int J Epidemiol* 34(2): 327–334.
- Taylor, C., Graham, J., Potts, H., Richards, M.A., Ramirez, A.J. (2005). Changes in mental health of UK hospital consultants since the mid–1990s. *Lancet* 366(9487): 742–744.

- Thomas, C., Benzeval, M., Stansfeld, S.A. (2005). Employment transitions and mental health: an analysis from the British household panel survey. *J Epidemiol Comm Health* 59(3): 243–9.
- Thomas, R., Evans, S., Huxley, P., Gately, C., and Rogers, A. (2005). Housing improvement and self-reported mental distress among council estate residents. *Soc Sci Med* 60: 2773–2783.
- Van Doorslaer, E., Masseria, C., Koolman, X. (2005). Income-related inequality in the use of medical care in 21 OECD countries. *CMAJ* (forthcoming).
- Van Doorslaer, E., Masseria, C. and the OECD Health Equity Research Group Members (2004). Income-related inequality in the use of medical care in 21 OECD countries. OECD Health Working Papers, No 14.
- van Rossum, C.T.M., Shipley, M.J., van de Mheen, H., Grobbee, D.E., Marmot M.G. (2000). Employment grade differences in cause specific mortality. A 25 year follow up of civil servants from the first Whitehall study. *J Epidemiology Comm Health* 54: 178–184.
- Virtanen, P., Vahtera, J., Kivimaki, M., Pentti, J., Ferrie, J. (2002). Employment security and health. *J Epidemiol Comm Health* 56(8): 569–74.
- Wadsworth, M. (1999). Early life. In Marmot & Wilkinson, (eds) *Social determinants of health*. Oxford: Oxford University Press.
- Watson, R. (2005). Heart disease rising in central and eastern Europe. *BMJ* 320: 467.
- Warr, P. (1987). *Work, unemployment and mental health*. Oxford, Clarendon Press.
- Weiler, A. (2005). Annual review of working conditions in the EU: 2004–2005. Dublin, European Foundation for the Improvement of Living and Working Conditions.
- Whiteside, N. (1988). Unemployment and health: an historical perspective. *J Soc Policy* 17: 177–194.
- WHO (1995). The world health report 1995 - bridging the gaps. <http://www.who.int/whr/previous/en/>
- WHO (1998). The World Health Report 1998. Life in the 21st century: A vision for all. Geneva, World Health Organization.
- WHO (2003). Social Determinants of Health: The Solid Facts. Denmark: WHO Regional Office for Europe.
- WHO (2005). Mental health declaration for Europe. Facing the challenges, building solutions. Copenhagen, World Health Organization.
- Wilkinson, R. (1999). Putting the picture together: prosperity, redistribution, health and welfare. In Marmot & Wilkinson, eds: *Social determinants of health*. Oxford: Oxford University Press.
- Wright, N. M. J., Tompkins, C.N.E. (2005). How can health care systems effectively deal with the major health care needs of homeless people? Copenhagen, WHO Regional Office for Europe's Health Evidence Network.
- Wynne, R., MacAnaney, D. (2004). Employment and disability: back to work strategies. Dublin, European Foundation for the Improvement of Living and Working Conditions: 128.
- Yarnell, J., Yu, S., McCrum, E., rveiler, D., Haas, B., Dallongeville, J., Montaye, M., Amouyel, P., Ferrieres, J., Ruidavets, J-B., Evans, A., Bingham, A., Ducimetiere P.; for the PRIME study group (2005). Education, socioeconomic and lifestyle factors, and risk coronary health diseases: the PRIME Study. *Int J Epidemiol* 34(2): 268–275.

5. MENTAL HEALTH IN EUROPE:

A POLICY PERSPECTIVE

Recent years have seen mental health raised significantly up both the global and European health policy agendas. We have seen the publication of a World Health Report devoted entirely to mental health (World Health Organization 2001), while all 52 member states of the WHO European Region, as well as the European Union and Council of Europe, came together at Helsinki in January 2005 to endorse a Declaration and Action Plan on mental health (World Health Organization 2005). At EU level a Green Paper on Mental Health was published in the autumn of 2005 while there have also publications of reports related to the state of mental health in the European Union and actions related to mental health promotion and depression (Commission of the European Communities 2004; Henderson et al. 2004; Jane-Llopis and Anderson 2005).

This level of pan European interest in mental health is well merited, if somewhat overdue. Mental health problems have been estimated to account for approximately 20% of the total burden of ill health across Europe (World Health Organization 2004). This assessment of burden is just the tip of the iceberg, what makes mental health almost unique is the broad impact it can have on all aspects of life including physical health, family relationships and social networks, employment status and contact with the criminal justice system. The economic costs of poor mental health are very high because of these multiple adverse consequences. A high level of stigma associated with mental health problems can also lead to discrimination and reduced self-esteem, and indeed reduce the willingness of public policymakers to invest in mental health.

Promoting good mental well-being and intervening to tackle the consequences of poor mental health should therefore logically be a major priority for health policy makers across Europe. However both the development of national policies and the level of funding for mental health have been disappointing. Mental health promotion continues to be a low priority in most countries, instead the emphasis is placed on treating the clinical aspects of mental health problems with much less attention paid to the broader environmental and social consequences. The development of community care led systems of mental health care is patchy, and fundamental abuses of human rights continue to occur, most visibly but not exclusively, within institutions in central and eastern Europe. The concept of empowering service users to be involved in making informed decisions about which services best meet their needs is still not widely implemented.

New challenges to face include the consequences of rapid economic and societal change, which as observed in central and eastern Europe, have been accompanied by a decline in population mental health, with increasing rates of alcohol use disorders, violence and suicide. The mental health needs of those displaced through conflict, persecution or

economic migration represents another of the new challenges that must be faced. Dementia in older people will also become more common as the population across Europe continues to age.

Perhaps more than any other health issue therefore, mental health requires an effective co-ordinated multi-sector approach to both the development of policies and the delivery of services. Many effective preventative interventions as well as pharmaceutical and psycho-social treatments are now available, (as may be seen from the work of the Cochrane Collaboration and the WHO Health Evidence Network) but more needs to be done to ensure that evidence on what works, in what circumstances and at what cost still has an opportunity to be facilitated into the policy making process.

This section provides an overview of the current policy environment in which mental health is located, briefly describing the health and socioeconomic burden of mental health across the European Union, and draws on some limited information provided by the country experts as well as much data collected from other sources to provide an overview of some of the key areas that need to be considered in developing and implementing policy, providing examples of different approaches taken to meet some of these challenges.

Key points:

- One in four people experience a significant episode of mental illness during their lifetime
- Mental health is associated with social deprivation and social exclusion
- The economic costs of mental health problems are high, in the EU-15 alone it is estimated to be at least 3-4% of GNP; they are associated with direct health and social care costs, as well as criminal justice, and significant productivity loss
- Mental health policy efforts focus mainly on treatment and rehabilitation; much more is needed in prevention and mental health promotion
- Some countries have little political commitment to making improvements (as reflected in low levels of financing); the stigma of mental illness is an enormous barrier to action in some cultures
- In many EU countries there has been a shift out of institutions and towards community based care over the last thirty years
- The shift away from institutional care has been slower in the countries in central and eastern Europe
- Continuing challenges in mental health policy include: the need to destigmatize mental illness; empower service users, increase funding for mental health care and promotion, improving the evidence base for effective policy-making, and improving coordination of service providers within countries

5.1 What are the consequences of poor mental health?

Mental health problems affect all; one in four people experience a significant episode of mental illness during their lifetime. Data from the Global Burden of Disease Study indicate that four of the six leading causes of years lived with disability are due to mental health problems: depression, schizophrenia, bi-polar disorders and alcohol use disorders (World Health Organization 2004). Depressive disorders are most common, making up nearly one third of all mental health problems. According to this study only cardiovascular disease contributes more to the burden of illness in Europe.

Suicide is the one of the top ten leading causes of premature death in Europe, contributing an additional 2% to overall burden of illness (World Health Organization 2005). In itself it is not a mental disorder but may be a consequence of many mental health problems, as key risk factors include social isolation and a lack of self worth. The rate of suicide is much higher in men than in women and after traffic accidents it is the principle cause of mortality among 15–35 year old males in the region. Rates of suicide have however been falling for both men and women in most countries of the EU–15 (plus Norway) over the last twenty years, exceptions being Ireland, Luxembourg and Spain (Commission of the European Communities 2004). The same cannot be said of the new Member States. Lithuania is reported to have the highest annual male suicide rates in the world of 80.7 deaths per 100,000; indeed the highest rates in the EU for men are all new Member States include Latvia 48.4, Estonia 47.7, Hungary 45.5 and Slovenia 44.4. Among the EU–15 high rates can be found in Finland 32.3, Austria 30.5, Luxembourg 28.6 and France 26.1. The lowest rates are found in southern Europe; there are just over 5 male suicides per 100,000 in Greece and Malta, with 8.5 in Portugal. Cultural and religious factors may have some influence on lower reported rates of suicide in some countries. A similar country pattern can be found when looking at women with the highest rates are to be found in Lithuania 13.1, Hungary 12.2, Latvia 11.8, Slovenia 10.5 Finland 10.2, Luxembourg 10.2 and Estonia 9.8.

Although there have been many epidemiological studies on the prevalence of mental disorders across Europe there has been little work undertaken to synthesise such information at an EU level. Moreover there is little tradition, unlike the US, in most EU countries of national epidemiological studies. Nor is there any standardisation of approaches used in the conduct of such studies whether conducted at national or regional level across Europe. Such information is vital to the development of EU wide policy on the promotion of mental well-being and preventative strategies to reduce the level of mental health disorders.

One recent attempt to address this deficit was a systematic review of all available epidemiological studies on a variety of mental disorders, affecting individuals between 18–65, conducted at a community level across the EU–28, Norway, Iceland and Switzerland (Wittchen 2005). The review identified 24 country specific and 3 cross national studies; one striking finding being that no population based data at all were available from 12 countries (Cyprus, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal,

Slovakia, and Slovenia), representing 54.8 million inhabitants (17.5%) in the age range under study. The most commonly found specific 12 month diagnostic conditions found were major depression (range 3.1% – 10%, median 6.9%), specific phobias (range 0.8% – 11.1%, median 6.4%) and somatoform disorders (range 1.1% – 11%, median 6.3%). 6 studies looked at psychotic disorders reporting a 12 month prevalence ranging between 0.2 and 2.6% (median 0.8) while for 12 studies looking at alcohol abuse these figures ranged from 0.1% to 6.6% (median 2.4%). Using these data the study estimated that 82.7 million people (27% of population) across the EU, (including Iceland, Norway and Switzerland) are affected by a mental disorder during a 12 month period.

Mental health problems of course can have many more consequences across all domains of life. Individuals are more likely to have physical health problems, and family relationships can suffer. There is a strong relationship between poor mental health and social deprivation. Individuals who live in areas with a high rate of unemployment are at an increased risk of developing mental health problems, while the profound levels of stigma, ignorance and subsequent discrimination associated with mental health problems can limit education and employment opportunities, leading to a descent into poverty. There is also a greater risk of becoming homeless or of coming into contact with the criminal justice system. The long-term impacts on children of people with mental health problems can also be significant: they may suffer from neglect and their schooling may be disrupted, curtailing their long-term opportunities.

5.2 What are the economic costs?

The economic costs of mental health problems are high, very conservatively estimated across the EU-15 alone to be at least 3–4% of GNP (Gabriel and Liimatainen 2000). In fact, the majority of quantified costs occur *outside* the health sector. Productivity losses arise in a number of ways: short- and long-term absenteeism, reduced performance at the workplace (presenteeism), early retirement other work cutback, reduced opportunities for career development, days out-of-role and reduced lifetime productivity due to premature mortality.

Absenteeism and early retirement

Data collected by EC supported Mental Health Economics European Network (MHEEN) shows a trend of increasing absenteeism and early retirement due to mental illness (and particularly depression) across Europe for both men and women. Mental health problems are also beginning to overtake musculoskeletal problems as the leading cause of days of absence from work in a number of European countries (Wynne and MacAnaney 2004). Some countries have reported increases in both the number of days of absence and the number of cases reported due to mental health problems. In Sweden mental health problems account for approximately 27% of all cases of long-term sick leave (RFV 2003). In the Netherlands between 1970 and 2003, although the overall level of health in the working population did not change there was a steady increase in the risk of workers being registered as disabled because of a psychological disorder; by 2003 35% of those leaving

work became disabled because of these disorders (Statistics Netherlands 2004). In Austria, while total days of absenteeism for all causes decreased by 13% between 1993 and 2002, days of absenteeism due to mental health problems increased by 56% (Zechmeister 2004).

These findings are consistent with those reported elsewhere. Links between long-term absenteeism, disability status and the onset of work-related stress have also been reported by the European Working Conditions Observatory (Houtman 2004). They reported that in Germany the number of long-term sick due to mental health problems increased by 74% between 1995 and 2002, compared with just a 10% increase in sickness absence due to musculoskeletal or respiratory problems for example. In Spain the General Workers Union estimated that between 50% and 60% of sick leave and disability claims are due to stress at work.

Putting a value on productivity losses

There are a growing number of national cost estimates available, however as methods of calculation used vary markedly, making direct comparisons between countries remains difficult. The estimates below provide some indication of these costs, for instance official estimates of total health care costs alone of all mental and behavioural disorders in Germany in 2002 were estimated to be €22.44 billion; 62% incurred by women because of their higher susceptibility to depressive disorders. This included specific costs for depression of €4.025 billion, schizophrenia and associated disorders €2.756 billion, and neurotic disorders including stress €2.825 billion. The average cost per head of population was €270 in 2002.

Depression is associated with the highest level of economic cost, because it is a common disorder often impacting on people often in employment. One recent study from England estimated total costs of adult depression alone in 2002 to be €15.46 billion or €309.2 per head of population; treatment costs accounted for only €636 million, the vast majority of additional costs were due to lost employment because of absenteeism and premature mortality (Thomas and Morris 2003). 31.9 million lost working days in France in 2000 were attributed to depression (Bejean and Sultan-Taieb 2005).

Although a much smaller number of people have schizophrenia, costs remain substantial. The economic impact in several studies in the Netherlands and Belgium for instance has been estimated to be equivalent to around 2% of all health care costs, even without including lost productivity costs or other adverse economic consequences. Studies in Hungary and England both reported that health and social care costs account for around one third of all costs with the other two thirds due to lost employment. (Knapp et al. 2004)

Many costs and consequences arising from poor mental health are however less well reported. The costs of *reduced performance* at work by people with untreated mental health problems, may be five times as great as those for absenteeism, but only limited research has examined this issue. (Kessler and Frank 1997) There are also long term fiscal impacts, as mental health problems are a leading cause of early retirement or receipt of a disability pension.

Other costs

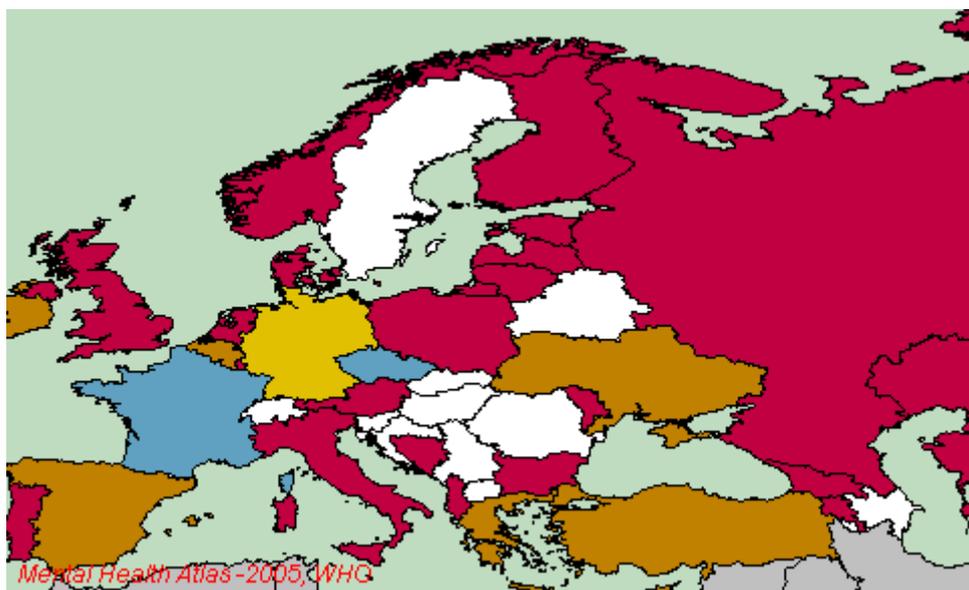
In addition to the more easily quantified lost productivity costs there can be other significant costs. Substantial costs for family carers may be overlooked, for schizophrenia alone families may provide between 6 and 9 hours per day of support, while for dementia and related disorders the contributions of caregivers can make up more than 70% of total costs with carers often providing 24 hour a day support.

There can be economic impacts over very long time periods, especially for childhood mental health problems. One study found that children with a diagnosis of 'conduct problems' at age 10 were likely to incur an additional €29 000 in costs between the ages of 10 and 27 years, while children with a diagnosis of 'conduct disorder' (more severe than conduct problems) incurred over €109 000 in additional costs (Scott et al. 2001). For both the conduct problem and conduct disorder groups, the largest proportion of additional costs were for criminal justice services, followed by extra educational provision, foster and residential care and state benefits; health care costs were much smaller.

5.3 The policy response across Europe

Having a national policy on mental health is essential to raising awareness and securing resources for services, as well as co-ordinate actions across many different sectors. Developing and strengthening policy for mental health across Europe remains a key concern, although all EEA countries now have a mental health policy in place either at the national or regional level. The most recent of these was approved in Romania in April 2005. This headline figure is somewhat deceptive. Some mental health policies are rather dated and require significant reform. Figure 5.1 using data from the WHO 2005 Atlas on Mental Health (World Health Organization 2005) provides information on the initial year of formulation of current mental health policy. Although the data in the Atlas should be treated with extreme caution it serves to illustrate the variation in the development of mental health policy with documentation in France and the Czech republic (shaded in light blue) dating back to the 1960s.

Figure 5.1 Year of formulation of current national mental health policy in Europe



Source: WHO Mental Health Atlas 2005.

It is clear from an examination of national mental health policy documents that the focus of much national mental health policy across Europe remains the treatment, care and to some extent the rehabilitation of people with mental health problems. Far less attention has traditionally been paid to the promotion of good mental health and well-being, with more (albeit still limited) focus placed on preventative measures. Notable exceptions to this include policy approaches in both England and Scotland. (*See section on mental health promotion*)

Remarkably given the significance of suicide to premature mortality in Europe there are few national strategies for suicide prevention, although suicide may sometimes be one of the issues to be addressed within national public health programmes (Beautrais 2005). Suicide prevention strategies may be targeted at the general population, at high-risk groups or at vulnerable individuals within these high risk groups. Specific suicide prevention strategies at the national level can be found in England, Finland, France, Ireland, Norway, Scotland, and Slovenia. Plans for a national prevention programme in Sweden have recently been announced. (AFP 2005) A Northern Ireland plan is also expected to emerge following consultation this autumn the door also remains open to the possibility of an all-Ireland approach (Woodward 2005). The situation is less clear for countries with devolved responsibility for health – suicide plans are in place in Belgium but do not appear to be in place in most of the southern European countries including Spain and Italy.

Some have set ambitious targets for the reduction of suicide, for instance the Scottish national strategy '*Choose Life*' sets out to reduce suicides by 20% over a ten year period to 2013. Few though have been subject to rigorous evaluation including analysis of cost effectiveness, although it should be noted that the Scottish strategy has set up a process of

ongoing evaluation as a part of its programme which is looking not only at effectiveness but also at economic impact.

5.4 Legislation and the development of mental health policy

Legislation is a vital component in implementing mental health policy and addressing service reform issues, setting the framework for the assessment and provision of mental health services, and their integration with general health and community services. It can also be used to encourage the development of new approaches to involving users, for instance promoting the use of consumer directed payments where feasible, empowering individuals to purchase appropriate services of their own choice. Legislation can also move beyond health and social care, and protect against discrimination and encourage implementation of mental health promoting interventions in other sectors. Encouragingly most countries in Europe have modernised their mental health laws in the last twenty years, although again there are outliers. The most recent mental health related legislation in the Czech republic was passed prior to 1971 while in Bulgaria laws are more than 25 years old (World Health Organization 2005).

There is a continuing need to take action to address human rights violations, stigma, discrimination and the consequent social exclusion that set mental health apart from most other health concerns. Such violations have been reported all across Europe, but are most visible in parts of central and Eastern Europe in the psychiatric institutions and social care homes (internats) that remain the mainstay of mental health systems. Once in an internat individuals rarely return to the community. There have also been well documented accounts by human rights group and the Council of Europe of individuals being kept in 'caged beds' or being subjected to electro convulsive therapy without anaesthesia or muscle relaxants in contravention to international guidelines.

Legislative instruments clearly have a crucial role (Parker 2005). There are already human rights instruments from the UN, the Council of Europe, and the EU intended to protect people with mental health problems, the principles of which ideally need to underpin the development of national legislation. Such legislation, however, can only be effective if monitored, with adequate sanctions to effect change. Legislation can ensure that compulsory treatment or detention is seen as a last resort, and can build in a safeguard of access to an independent periodic reviews for all people admitted or treated involuntarily.

5.5 Funding mental health across Europe

Let us now turn to the issue of funding for mental health. Although prevalence rates for the majority of psychiatric disorders vary very little across Europe, different health systems identify different levels of need for mental health services, devote different levels of funding and choose different ways to deliver them. These variations in need, funding and response arise for many reasons, including differences in demography, socioeconomic structure, political structure, societal context, culture, and priorities. What is undoubtedly

clear however is that in many countries in Europe mental health care is grossly under-funded. Despite the high prevalence, substantial contribution to the global burden of disability, strong association between deprivation and mental illness, and the growing body of cost-effectiveness evidence, the proportion of total health system expenditure devoted to mental health care is often very small. There are still countries with a low political commitment to making improvements; the stigma of mental illness is an enormous barrier to action in some cultures.

The 2001 WHO Atlas on Mental Health was the first attempt to systematically collect information on expenditure on mental health across Europe, indeed across the world. Combining data from the Atlas¹³, with more recent work undertaken by the Mental Health Economics European Network (MHEEN), data on mental health expenditure in 28 countries are now available (McDaid et al. 2004). Only four countries in Europe as a whole report spending more than 10% of their health budget on mental health, with the lowest reported levels of under 2% in some of the newly independent states of the former Soviet Union. Expenditure on mental health within the health care budget is at its highest levels in the UK and Luxembourg with spending in excess of 13%. The proportion of the health budget spent on mental health in the EU (where known) appears to be lowest in Portugal and some autonomous communities in Spain, at around 5%.

This lack of funding is both inefficient, because of the substantial benefits that interventions would bring, and inequitable given the high contribution to overall burden, and disproportionate impact on the poor. It can also hamper the ongoing reform of mental health systems across Europe, as these often require the injection of *additional* resources. Systems that have been starved of funding and skilled human resources for decades will be in no shape to support major changes to the delivery setting, organisation or processing of care (Knapp et al. Forthcoming).

Despite the variation in the level of funding across Europe there is little difference in the way in which mental health is financed compared with general health system funding (Knapp, Novick et al. 2003; McDaid, Knapp et al. 2004). Nearly all countries rely largely on some form of income or sales-related taxation and/or social insurance and broadly speaking access to services is universal. However for some in central and eastern Europe in particular, the transition to social health insurance systems has not always been effective, increasing still further the significant proportion of health expenditure incurred through out-of-pocket payments and private insurance. The limited evidence available suggests that private expenditure on mental health is limited, due in part to the association of mental health problems with poverty, so that many individuals have to rely on state-funded services where these are available. Turkey appears to be a slightly different to the other countries analysed; in the Turkish health care system it is possible that individuals not

¹³ Although there is a 2005 edition of the ATLAS – data on funding for mental health in Europe has not changed from the previous edition in 2001, suggesting that these figures have not been updated

covered by one of the government or private insurance schemes will have to pay out of pocket for all services.

Voluntary (non compulsory for-profit or not-for-profit) insurance schemes provide minimal coverage for mental health in the European Economic Area. One reason for this is the chronic nature and high cost of mental health treatments and interventions. Where these treatments are covered premiums are likely to be higher. Evidence from the US, where the private health insurance market is most well developed, illustrates the difficulty that mental health has in achieving parity with physical health, leading to unequal access to insurance coverage for mental health treatment.

There are some exceptions. In the UK while the number of individuals purchasing private insurance remains very small, a recent market report suggests that mental health is the fastest growing independent private health care insurance sector. As more mental health services are provided by the independent healthcare sector as the NHS increasingly outsources acute psychiatric care, opportunities to also provide this service through private insurance also increase. Independent psychiatric hospital revenues grew strongly in 2001 to £336 million, up 17% on the previous year (Laing and Buisson 2003). Across Europe it is also the case that some specialist services such as psychological therapy and treatment for addictions or eating disorders may also be provided on a private basis.

The importance of voluntary (private) insurance is also growing in many parts of central and eastern Europe, (Dixon et al. Forthcoming) and a future challenge will be to ensure that where countries shift towards more reliance on private insurance, rather than social insurance or tax, mental health disorders are fully covered in the same way as other conditions. At present premiums are usually risk-rated based, on an assessment of individual risk rather than being community-rated as with social health insurance. One consequence is to impose the greatest financial burden on people with mental health disorders or with a family history of mental health disorders (where this information is used to calculate premiums).

5.6 Out-of-pocket payments and utilisation of mental health services

The MHEEN study reported that eight of the 17 countries levied some out of pocket charges for specialist mental health services within their publicly funded health systems. For instance in Ireland while the bottom third of the population are exempt from charges, the remainder of the population will pay a variable fee for primary care consultations and indeed pay a hotel charge towards the costs of inpatient stays. Access to mental health services under private health insurance is limited so there may also be out of pocket payments for behavioural and occupational therapy (O'Shea and NiLeime 2004). In Iceland individuals must make a co-payment for most services, although there are reductions for those who are registered as having a disability, (Tomasson K 2004) while in Belgium there are fixed fees for specialist mental health services, but these are reimbursable under the social health insurance scheme (Dierckx H 2004). Economic transition and mental health

system reform in countries such as Poland have also led to the introduction of out of pocket payments for psychiatric services both for the individuals concerned and their families (Zaluska et al. 2005).

In addition to such specific charges individuals will also be subject to any standard out of pocket payments that may apply for hospital stays and pharmaceutical expenditure. Such out of pocket payments continue to make a significant contribution to overall health expenditure in a number of EU countries e.g. in Portugal where approximately one third of costs are incurred out of pocket. Given the strong correlation between mental health problems, unemployment and deprivation, user charges for mental health services can be highly inequitable: those needing services will often be the least able to pay. This could compound the documented low utilisation of services associated with mental health problems. Even without financial barriers to access, between two-thirds and four-fifths of individuals with mental health problems with capacity to benefit do not come into contact with formal services (Zuvekas 1999; Bijl et al. 2003; World Mental Health Survey Consortium 2004). One factor for this low rate of course is the stigma associated with poor mental health. The often poor rate of diagnosis of mental health problems in primary care is not likely to be improved if those with mental health problems are discouraged from coming into contact with primary care services by user charges. Moreover people with mental health problems have poorer physical health than the general population, so again inappropriate use of user charges could adversely impact upon them. Out of pocket payments are of course not restricted to the health sector, indeed their importance can grow in other sectors such as social care where entitlement to services may be subject to very different rules. *(See section on entitlement and access to services outside the healthcare system below)*

5.7 Allocating resources to mental health

Even when the level of funding collected either through taxation or insurance for mental health is commensurate with the level of need and the availability of effective interventions there could still be a need for action. The allocation of services and payments for them may not be appropriate. Understanding how these resources are allocated can help provide information as to whether the distribution of funds to mental health and other sectors of the health system is firstly undertaken on the same basis, and secondly whether this takes into account any planning or assessment of population needs. These issues may be of particular concern given the high degree of decentralisation in many countries, which can lead to wide variations in funding for and availability of services within countries.

The MHEEN group recently looked at resource allocation methods for mental health funding in 17 western European countries (McDaid et al. 2004). With few exceptions, where local budgets are provided, these were determined on the basis of historical precedent or political judgement rather than on the basis of an objective measure of population health needs. The methods used are unlikely to target resources to areas where they have the greatest chance of being effective and may also allow inequities to persist, for instance if

resources continue to be concentrated in major cities, neglecting rural areas within a country.

Methods of resource allocation can be even more complex in countries dominated by social health insurance systems. Some funding, e.g. for public health and health promotion services, will be provided through taxation, but the majority of funding may be in the form of direct reimbursements from sickness funds to service providers for the provision of services. The MHEEN group reported an increasing use of DRG (Diagnosis Related Group) tariffs to reimburse service providers for mental health-related services in both social insurance and tax dominated countries. The use of such DRGs in some countries has led to under-funding for mental health, as reimbursement rates have not always fully taken into account all of the costs associated with chronic mental health problems. In central and eastern Europe the allocation of funds is still often dependent on historical precedent; this can have particular implications for the mix of mental health services if such an allocation procedure continues to ensure that the majority of available funds are earmarked for long stay institutions.

Attitudes can also remain a powerful barrier to the allocation of resources to mental health. One recent population survey in Germany, reported that the public were far less willing to safeguard spending on mental health compared with other health conditions (Matschinger and Angemeyer 2004). 10% and 7% of respondents placed schizophrenia and depression within their top three disease areas where budgets would be protected compared with 89% prioritising cancer, 51% HIV/AIDS and 49% cardiovascular disease. This low priority was attributed in part to ignorance that conditions could be treated, a belief that they were self-inflicted, and an underestimation of individual susceptibility to mental illness. The public may also have prioritised immediate life threatening conditions over other health concerns.

5.8 Entitlement and access to services outside the health care system

What makes mental health almost unique compared to many other health system issues, is the heavy reliance on services that are both funded and delivered outside the health sector. As community care services have developed in Europe over the last half century, there has also been a gradual shift of many services from the health to the social care sector, potentially having significant implications both for entitlement and access to services. In contrast to the universality and solidarity found in health care systems, access to services within social care systems may be restricted, usually subject to means testing or assessment of disability, and perhaps requiring significant co-payments.

Access to supported housing (a key component of any attempt to provide more community orientated care) and long-term care services in high-income countries in Europe may be subject to assessment of financial means, so that before an individual qualifies for assistance their ability to pay (or in some cases the ability of family members to pay as well) must be first assessed. They may be expected to contribute most of their own

income, as well as run down any capital, savings and other assets before – as a last resort – they becoming eligible for public assistance. Within the EU-15 only Sweden currently appears to fund all social care services 100% through taxation subject to assessment of need and regardless of patient income. Out of pocket payments outside the health care sector can thus be substantial, for instance in Austria where social health insurance excludes most mental health disorders on the grounds that they are chronic rather than curative, one third of social care expenditure for mental health is realised through private out-of-pocket payments by individuals (Zechmeister et al. 2002).

Similarly in Germany only medical aspects of psychosocial care are covered under health insurance. Long-term care needs for the chronically mentally ill are classed as social rehabilitation or social reintegration and are the responsibility instead of social welfare. Social welfare is tax financed and subject to means testing. Patients and their families therefore contribute to the costs of much social care costs (WHO 2001). In the Netherlands under the Exceptional Medical Expenses Act, after one year patients were required to make a contribution to inpatient care, psychotherapy and sheltered accommodation. In 2003 individuals in long stay facilities could incur charges of up to €1600 per month, while outpatient psychotherapy involved a co-payment of around €10 per session (Evers 2004).

Employment services play a vital role in helping to reintegrate individuals into the community. The issue here is different, there are unlikely to be any charges to the individual for using these services, but equally there have been few incentives for employers to take on people with mental health problems, rather than those with physical disabilities. This is part again an issue related to stigma in the workplace by both employers and their workforce, but is also a consequence of a lack of appropriate training for employment centre staff, who may not be aware of the employment needs or capabilities of people living with a mental health problem. (See also section on workplace mental health promotion)

5.9 Resources and service mix across Europe

Given the different service contexts, and different arrangements in provision and financing, it is obvious that countries will exhibit marked differences in their resource bases. Differences will also arise because of the different national commitments of funding to mental health that have been shown here, and the trend above towards placing services outside the health care sector where entitlements are more restricted in a number of countries. At least as important, however, will be different policy intentions and practice possibilities. Italy famously passed legislation to close the psychiatric hospitals, and the Italian health system today relies much less than, say, Germany's on in-patient care. Similarly, the Netherlands and Finland have invested heavily in psychiatric social work whereas Denmark has given proportionately much greater emphasis to clinical psychology. The family is probably a more important provider in Mediterranean societies than in Northern Europe. This is perhaps most acute in Turkey where there are no statutory

community care support services, with most individuals with mental health problems being cared for by family members.

Although there has been some convergence in practice guidelines, patterns of medication use will reflect licensing and reimbursement arrangements as well as local cultures of prescribing, professional training and conservatism, marketing and research. This can be illustrated by one recent six country survey reported that France had a threefold greater rate of psychotropic utilisation than that found in the country with the lowest utilisation rate, the Netherlands (Alonso et al. 2004). This is unsurprising given the recognition by the French authorities of their high consumption of pharmaceuticals generally compared to most other EU countries (Haut Conseil pour l'Avenir de l'Assurance maladie 2004).

Any description of the resource base across countries is therefore likely to show considerable variation, but a relatively low level of provision in one domain is not necessarily a cause for castigation since it may be compensated for by relatively higher provision of other kinds, or explained by local cultural considerations or democratically generated priorities.

Mental health personnel

There are few statistical collections that allow inter-country comparisons, and those that exist are beset with problems stemming from differences from one country to another in the definition of mental health care, with until relatively recently few instruments available to allow meaningful comparison of the workforce across countries.

One of the first attempts to collect such information on a global basis was the 2005 edition of the WHO Atlas on Mental Health. Notwithstanding the major limitations in the data provided, the available statistics revealed clear differences along geographical lines, with northern European countries generally providing more mental health care than either eastern or southern European countries. Denmark, Finland, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Sweden and the UK, all estimate that they provide over 100 mental health personnel per 100,000 of the population. Within this group of countries, Finland and the Netherlands estimate a substantially greater provision of mental health care at 438 personnel and the Netherlands 316.7 personnel per 100,000 of population. Of the 51 countries in the European region, Bulgaria with 41.5 personnel per 100,000 is the median in terms of provision. These figures should be viewed with caution as in places there are substantial data missing: Belgium, France, Romania, and Slovenia are all unable to provide information on a number of dimensions.

The balance between institutional and community based care

The extent to which services can be shifted from institutions to the community and the shape that models of service provision take continues to be a key question for policy makers. A report prepared for the WHO Regional Office for Europe's Health Evidence Network concluded that there are no persuasive arguments or data to support a hospital-only approach, nor is there any scientific evidence that community services alone can

provide satisfactory comprehensive care. (Thornicroft and Tansella 2004) Instead it argued that a 'balanced care' approach is required where front line services are based in the community but hospitals and other institutions can play an important role in providing services. Where required hospital stays should be as brief as possible, with these services are provided in normal community settings rather than in remote isolated locations.

There are many potential elements to a balanced care approach, and not all are applicable or appropriate in each country. Each needs to be considered for its local relevance and will be dependent on the flexibility, coordination and ready availability of resources. Box 5.1 provides recommendations on service mix dependent on whether countries have a low, medium or high level of resources.

Box 5.1 Mental health service mix: policy considerations

Low-resource countries should focus on establishing and improving mental health services within primary care settings, using specialist services as a backup.

Medium-resource countries should also seek to provide five core service components: (i) outpatient clinics, (ii) community mental health care teams, (iii) acute inpatient care, (iv) long-term community-based residential care, and (v) work and occupational care.

In addition to such measures, *high-resource countries* should provide forms of more differentiated care such as specialised ambulatory clinics and community mental health care teams, assertive community treatment, and alternatives to acute inpatient care, long-term community residential care, and evidence-based vocational rehabilitation.

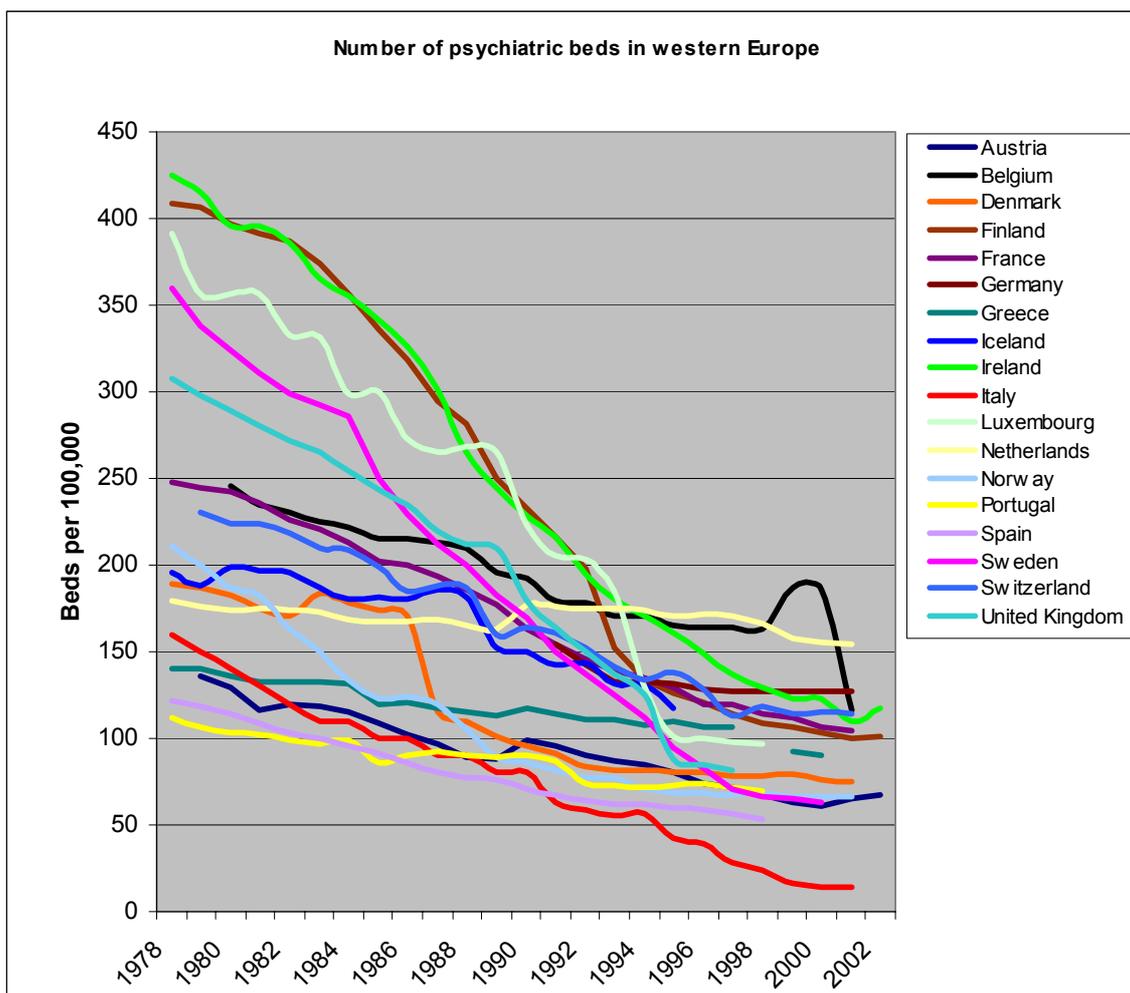
Source: (Thornicroft and Tansella 2004)

Certainly in many countries in the European Union there has been a steady shift in the balance between provision of services within institution base care and in the community over the last thirty years, helping to redress the imbalance between institutional and community based care (McDaid and Thornicroft 2005).

The twentieth century was characterised firstly by the rise and then gradual reduction in the use of asylums as the mainstay of service provision for people with mental health problems in many parts of Europe. As the failings of the asylum system became clearer, and attitudes towards the protection of human rights gained in importance in the 1950s there has been a gradual shift by health policy makers towards a policy of deinstitutionalisation, that is a reduction in the use of secluded, long stay psychiatric hospitals. The costs of maintaining these expensive institutions and the availability of new medications undoubtedly also have had some influence on this process. Over the last 30 years in western Europe in particular individuals have been transferred to other settings such as general hospitals, various forms of community based supported living establishments or back to their family homes.

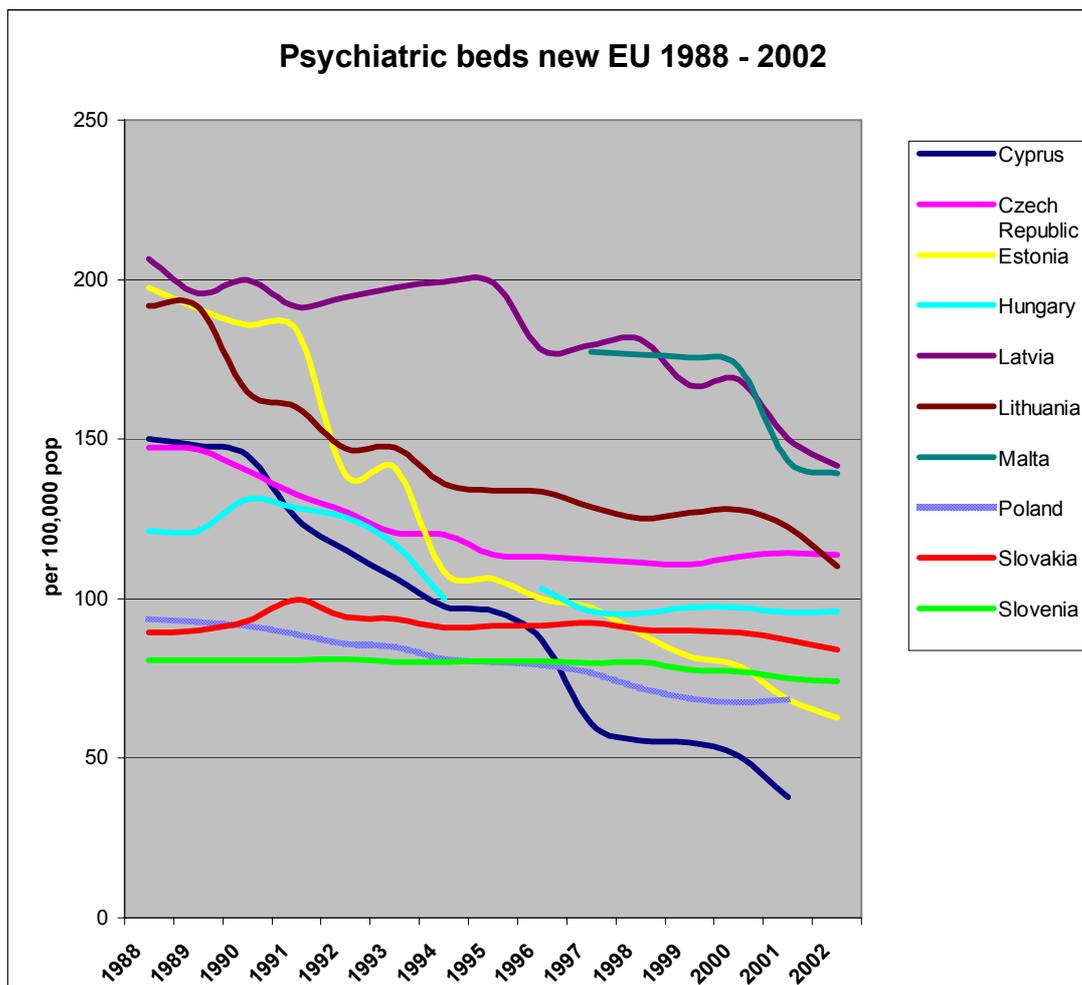
Figure 5.2 illustrates trends in western Europe from 1978 (when Italy famously passed its law on deinstitutionalisation) until 2002; in all countries bed numbers have fallen sharply. The change in some countries has been marked than other. Ireland for instance had 73 beds per 10,000 population in 1961, by 2003 this had fallen to 10.3 per 10,000, similarly rates in Sweden fell from 48 to 6 per 10,000 by 2001 and in France from 21 to 12 per 10,000. (Daly et al. 2004; Walsh and Daly 2004) Many countries now provide around 10 psychiatric hospital beds per 10,000 people although at the extreme in Italy there are virtually no inpatient psychiatric hospital beds. For instance in 2001 in England the number of beds was 6.1 beds per 10,000 while in the Netherlands this was 13.5, Germany 12.8, Spain 4.3. (Priebe et al. 2005).

Figure 5.2 Trends in number of psychiatric beds in Western Europe 1978 - 2002



Source: WHO Health For All 2005

Figure 5.3 Trends in number of psychiatric beds in the new Member States 1988 - 2002



Source: WHO Health For All 2005

This shift away from institutional care has been slower in the countries in central and eastern Europe. Figure 5.3 illustrates that for the 10 new EU Member States there has been significant progress in terms of deinstitutionalisation over the last 15 years in Estonia, Lithuania and Cyprus in particular, but little change elsewhere. In the Czech republic there were 1,554 beds in psychiatric wards of general hospitals and 10,139 in 21 psychiatric hospitals in 2001; there had been little change numbers compared with 1996 although the process of deinstitutionalisation began in 1989. Romania has more than 17,000 psychiatric beds of which more than 12,000 are located in 36 psychiatric and five forensic hospitals. Another complication is that there is a long tradition of using long stay social care homes (*internats*) in many of these countries. These beds also need to be taken into consideration when considering what the balance is between institutional and community care in any one country. Perverse incentives in the financial systems in many of these countries link funding directly to bed occupancy, allowing no flexibility for local planners to develop community-based alternative services. For instance in Romania this means that beds are occupied for an average of 350 days of the year.

Clearly the reliance of mental health systems on old style institutional care has certainly been reduced in many countries, but caution must be exercised in interpreting this data. Obtaining accurate and comparable data on the actual number of psychiatric beds in psychiatric hospitals, general hospitals and other settings is difficult, and sometimes country estimates include beds that are not located in psychiatric hospitals.

There are specific contextual factors in all countries that must be taken in account – for instance in Belgium a ‘bed’ may in fact not actually be occupied, instead the funding allocated to a bed is used to fund community based services. In countries in central and eastern Europe, beds in long stay social care homes (internats), may not be included in these estimates. Deinstitutionalisation can also mean different things in different countries. In Germany for instance this has included the transfer of individuals from psychiatric hospitals to redundant tuberculosis rehabilitation hospitals in the Black Forest, while in Switzerland it has referred to a reduction in the number of beds in existing psychiatric hospitals, but with no intention at policy level of moving psychiatry into general hospitals. (Haug and Rossler 1999) Some have also argued that we are now moving into a new phase of reinstitutionalisation in some countries in Europe where individuals once in psychiatric hospitals are now in other institutions such as prisons, forensic units and supported housing. Priebe and colleagues compared changes in the number of such beds in six western European countries since 1990 (England, Germany, Italy, Netherlands, Spain and Sweden) observing that in two of the six countries, the Netherlands and Italy the increase in places in forensic units and supported housing more than outweighed the decrease in hospital beds. Moreover in all six countries the prison population had grown, with the highest rate of growth been seen in those countries with the smallest increase in forensic bed numbers (Spain and England) (Priebe et al. 2005).

Non-institutional services

Relying on statistics on in-patient psychiatric beds when describing cross-country variations is perhaps a limitation given the concerted move in many European countries to shift the locus of provision from in-patient to community-based care. However, it is far from straightforward to describe, record and map other (non-hospital) services across localities. The carefully developed European Service Mapping Schedule (ESMS) was designed to do just this, (Johnson et al. 2000) but even when this instrument is employed, interpretation of findings is difficult in what is an inherently (and increasingly) complex field.

The EPSILON multi-country study of people with schizophrenia demonstrated that service systems and availability varied greatly between study sites (Becker et al. 2002) using the ESMS, and that use of, for example, in-patient care is closely related to supply. The study reported that a higher proportion of in-patient care was used in the research site in Denmark, but that more beds are available for use. In contrast the research site in Spain had many fewer inpatient beds and the cost of inpatient care was therefore lower. Similarly the ERGOS multi country study of services used by people with schizophrenia using a different data collection approach also found distinct differences in patterns of treatments used in different centres, with for instance family therapy rarely used in French, Portuguese

or Dutch centres but frequently provided in the Italian and Spanish sites. Differences are found within as well as across countries and among sites with similar levels of resources. In this study home visits were commonly suggested in the Irish and Portuguese sites but there were differences in use across the French centres in the study. (Kovess et al. in press). Despite limitations there is a clear trend of a more methodological driven approach to the collection of comparative data. One area where urgent work might be undertaken is to use instruments such as the ESMS to map the situation in countries in central and Eastern Europe where little such work has been undertaken.

Geographical distribution of resources

What none of the data already presented describe is the distribution of services within a country: the urban/rural distribution. For example, Bulgaria's National Mental Health Programme, launched in 2001, states very clearly that a problem with its present mental health care system is a very uneven regional distribution of hospital beds. In Bulgaria, as in the UK for example, there are problems of inpatient psychiatric beds being used as a substitute for nursing home beds. This may be due to lack of nursing home resources, or poor care management of the individual patient.

As part of Bulgaria's mental health programme, there is to be a move so that 'psychiatric beds come closer to the patient's place of residence, each catchment area of 150,000 people will have inpatient, outpatient and rehabilitative services, and the average number of bed per catchment will be between 50 and 75. A reduction in hospital beds is to take place in parallel with the introduction of specific units, offering psychiatric rehabilitation in the community'. In Spain, there are enormous differences between the autonomous regions (Haro et al. 1998).

The need to consider patterns of resource provision within countries may thus be more important to the development of mental health policy across Europe than simple national comparisons. This can also help to identify appropriate differences in service mix between rural and urban localities. The ESMS has now been used to make such comparisons across multiple localities in different countries, including Spain, Italy and Germany. It is perhaps not insignificant that all three of these countries have heavily decentralised health systems. A recent comparison between 9 Italian and 4 Spanish sites of mental health service use geographically dispersed across the two countries reported that there was great variation in the use of beds – e.g. Turin having a utilisation rate of hospital beds 7.6 times higher than that found in rural Andalusia. Overall the use of community beds was much higher in Italy, –all sites had higher rates of utilisation than those in Spain. High variation was also found in use of a range of community services and compared with data from northern European cities reported in the previously mentioned EPSILON study rates of utilisation of both residential and community services are low. (Salvador-Carulla et al. 2005)

5.10 Interventions to promote positive mental well-being?

Positive mental health is “a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization 2001). The absence of mental well-being can have severe consequences; evidence from Finland over a 20 year period suggests that high levels of self reported unhappiness are associated with higher levels of suicide. (Koivumaa-Honkanen et al. 2003) The World Health Organization has published evidence that mental health promotion and mental disorder prevention can help in maintaining or improving health, have a positive impact on quality of life and be economically worthwhile (Herrmann et al. 2004; Hosman et al. 2004).

In practice however there have only been limited efforts thus far to introduce evidence based approaches to mental health promotion across Europe. (Jane-Llopis and Anderson 2005) One challenge is that in developing and implementing a strategy for public mental health promotion, actions should be taken across many different sectors. Effective actions can be taken across the life cycle, for instance through parent training programmes and interventions for the early identification of mental health problems in schools, flexible practices and access to counselling and support in the workplace, and bereavement counselling and social activities to reduce isolation and the risk of depression in older age. There is a need to work with a range of stakeholders including teachers, social workers, employers associations, trade unions and local community groups including faith based organisations.

One example of a multi sector approach to mental health promotion is the National Programme for Improving Mental Health and Well-Being in Scotland (See Box 5.2). There are also initiatives at the European level that recognise that different approaches to implementation of health promoting strategies may be required in different countries and contexts. The 28 country EC supported Implementing Mental Health Promotion Action network (www.imhpa.net), has developed a European Action Plan for Mental Health Promotion and Mental Disorder Prevention, a policy framework identifying high priority policy initiatives to improve mental health, based on their proven efficacy and practicality of implementation.

Box 5.2 The National Programme for Improving Mental Health and Well-Being in Scotland

The National Programme for Improving Mental Health and Well-Being in Scotland
<http://www.wellontheweb.net>

Key Aims 2003 – 2006:

- Raising awareness and promoting mental health and well-being
- Eliminating stigma and discrimination
- Preventing suicide
- Promoting and supporting recovery

The National Programme aims to work with and through others to achieve these key aims in the following priority areas:

- Improving infant mental health (the early years)
- Improving the mental health of children and young people
- Improving mental health and well-being in employment and working life
- Improving mental health and well-being in later life
- Improving community mental health and well-being
- Improving the ability of public services to act in support of the promotion of mental health and the prevention of mental illness

5.11 Promoting mental health in the workplace

While broad mental health promotion initiatives at a national level have been limited, there have been a number of significant developments at both national and pan-national level across Europe which have served to raise the profile of workplace mental health promotion (McDaid et al. 2005). Perhaps the most important of these, at least symbolically because it demonstrates political commitment to mental health, was the January 2005 Helsinki intergovernmental conference on mental health organised by the WHO Regional Office for Europe, European Commission, Council of Europe and Government of Finland. Workplace health promotion was one of many important issues discussed at the conference. The end result was a political commitment and action plan for mental health. The governments of all 52 European countries signed a declaration calling for action to “promote the mental wellbeing of the population as a whole by measures that aim to create awareness and positive change for individuals and families, communities and civil society, educational and working environments.....”(World Health Organization 2005).

A detailed action plan was also endorsed by ministers which called specifically for action to “create healthy workplaces by introducing measures such as exercise, changes to work patterns, sensible hours and healthy management styles” and also to “include mental health in programmes dealing with occupational health and safety.”(World Health Organization 2005) Welcome though these commitments are, the onus is on individual countries to implement these actions over the next five to ten years, according to their own

needs and resources. It will thus be some time before we can assess whether changes in national plans and strategies have the potential to be effective; one catalyst for change might be a report on progress towards achievement of the Helsinki declaration, but no firm plans for such an assessment are as yet in place.

The EU and its agencies are now playing an increasingly important role. Through Directorate General (DG) Employment and Social Affairs, the Commission asked the European Social Partners (European associations of trades unions and employers organisations) to formulate a plan to combat stress in the workplace. Subsequently in October 2004, the European social partners signed a framework agreement on work-related stress (Monks, Strube et al. 2004). The principle objective of the agreement was '*to increase awareness and understanding of employers, workers and their representatives of work-related stress, and draw their attention to signs that could indicate problems of work-related stress.*' The agreement provides a general framework for analysing and dealing with work-related stress. It points out that European directives covering occupational safety and health also cover work-related stress in so far as this is a threat to health and safety. Problems may be addressed through risk assessments, a stress policy or specific measures targeted at specific stress factors.

Much EU activity focuses on research and information exchange, with an intention of strengthening the evidence base both on the scope of the problem and potential solutions. Within DG Employment and Social Affairs the European Foundation for the Improvement of Living and Working Conditions conducts and commissions research on a range of social policy issues. One of these areas looks at maintaining wellbeing within the workplace, while another explores how to promote the social inclusion of people with disabilities (including mental health problems) within the workforce. Another agency, the European Agency for Safety and Health at Work also provides information on a range of occupational health and safety issues, including work-related stress.

Within DG Health and Consumer Protection, the Public Health Programme has funded a number of projects looking at mental health in the workplace. These have included support for the European Network for Workplace Health Promotion, a group linking occupational safety and health groups across the EU, and the work of the International Mental Health Promotion Action Group (IMPHA). One outcome of this EU work has been the production of a report by the German Federal Institute of Occupational Safety and Health looking at existing strategies to cope with anxiety, stress and depression in workplaces across the EU (Berkels et al 2004).

National actions for workplace health promotion

Of course, national governments across much of Europe may have been involved in a range of measures to improve occupational safety and health. What is most distinctive, however, is the extent to which they are involved in a process of welfare system reform intended to help facilitate and encourage those who have become unemployed return to work. In some countries this has involved reform of social welfare benefits so as to act as a further incentive to return to work (Teague 1999). The extent to which this is intended to impact

on those claiming disability benefits is less clear, although politically this is now an issue for concern in many European countries (Jarvisalo et al. 2005).

Some countries have launched or announced reform of disability benefit systems so as to target them more effectively at those who are least capable of work. For instance in England there are ongoing attempts to reform access to disability benefits and encourage individuals towards vocational rehabilitation, (Henderson et al. 2005) while in the Netherlands a target of a 75% reduction in those claiming long-term disability benefits has been set. While such reforms may act as an incentive for individuals to seek employment, changes to the social welfare system alone will be insufficient to promote long-term job retention. Welfare reform needs to be a part of a package of measures that may include enforcement of anti-discrimination legislation, participation in vocational rehabilitation courses, availability of support and adaptations in the workplace, flexible working arrangements, disability awareness training for the rest of the workforce and help with the costs of transportation (OECD 2003; Wynne and MacAnaney 2004).

5.12 Continuing challenges

Having looked briefly at the policy environment in which mental health is located, and reflecting on trends in services both to treat people with mental health problems and also to promote good mental health and wellbeing, it is clear that there are numerous challenges to overcome. Different contexts across Europe will require different approaches, but some are common to all and are set out briefly below.

Addressing stigma

Stigma distinguishes mental health disorders from many other conditions and ultimately leads to discrimination and social exclusion. Tackling the stigma, discrimination and social exclusion that pervades all aspects of mental health remains a key challenge. It is clear that in some parts of central and eastern Europe fundamental human rights abuses continue to be seen in the psychiatric institutions and social care homes that remain the mainstay of mental health systems. Abuse manifests itself in many ways; even where community based care dominates in western Europe individuals can be just as neglected and isolated within their communities as they were previously in institutions. The fear of stigmatisation also reduces the likelihood of individuals with mental health problems coming into contact with formal services. It also contributes to the low priority of mental health in policy making.

There are no easy or short term solutions, nor do we have good evidence on what works, but long term actions such as intervention in schools to raise awareness of mental health, and constructive engagement with the media, who have socially reinforced stigma and social exclusion by sensationalist and inaccurate portrayals of mental health appear to be merited, subject to careful ongoing evaluation.

Legislation here more than in any other area of health has a crucial role. Legislative instruments from the UN, the Council of Europe, the EU and others are intended to protect the human rights of people with mental health problems. They can only promote social inclusion however if effectively monitored with adequate sanctions where required to effect change. Where involuntary treatment may be required, the principle of using the least restrictive alternative should be applied, ensuring that individuals have the opportunity for independent review. Legislation also needs to move beyond health and social care, and protect against discrimination in other sectors.

Empowering service users

A continuing challenge is to improve access to information in order to help empower individuals to seek help. A lack of knowledge about conditions and treatment has been indicated as a key reason for under-utilisation of services (Sartorius 2002). Basic information could be provided on services available, and co-ordination improved between different service providers/funders. These approaches will be dependent on the level of resources available within countries. In high-income countries approaches that have been shown to be relatively effective include the use of assertive community treatment teams which among other things seek to contribute towards improving an individual's living conditions and work status (Thornicroft and Tansella 2004).

One recent major review of the links between social exclusion and mental health in England (Office of the Deputy Prime Minister 2004) found that in addition to widespread stigma and discrimination, health professionals also have a low expectation of what individuals with mental health problems can achieve, and that employment in particular is not seen as a key objective. It found that there was a lack of clear responsibility for promoting social and vocational outcomes, a lack of ongoing support to enable people to work and structural barriers to engagement in the community. The report called for more choice and empowerment of service users, help to retain jobs, return to employment and progress careers. The fundamental importance of family and social participation on health was stressed, and the need for a multi sector partnership between health, social care, employment and other community services recognised.

Helping individuals to obtain/maintain employment in the regular job market can help reduce the level of stigma and discrimination against mental illness among employers, although the vicious cycle needs first to be broken. Attention is beginning to focus now on the use of 'direct payments' where individuals are given cash to purchase services and support that they require, including help in vocational rehabilitation. The system has however only been introduced in a few countries including England, Scotland and the Netherlands for a few service users making it too early for formal evaluation.

People with mental health problems can also be empowered to have more control over their treatment. Atkinson and colleagues (Atkinson et al. 2004) found evidence that many service user organisations (as well as other stakeholders) in the UK support the use of 'advanced directives', where an individual when well specifies how they wish to be treated if they become unwell. Such advance directives were thought to be empowering and

potentially destigmatizing, although it was recognised that many problems need to be overcome in their implementation. Support for advance directives has also been reported among Dutch patient groups (Varekamp 2004). Another alternative to empower individuals to have more control over treatments are crisis cards which again state preferences in anticipation of a time when a person is too ill to express their views directly (Sutherby et al. 1999). While these issues have been considered only in high-income countries, in principle such approaches might be used in all settings with some local adaptation.

Appropriate level of funding for mental health

Stigma is and the lack of an effective service user movement are but two factors that may act as a barrier to an appropriate level of investment in mental health. Yet the case for investment in mental health is very strong. There now is substantial evidence that greater investment in many areas of mental health is not only justified on grounds of tackling the high degree of social exclusion and adverse health consequences, but also that it represents a more efficient use of health (and other sector) resources, allowing many individuals to maintain or regain their normal role, making an active contribution to society either through paid work or other activities. Despite this, levels of funding for mental health still appear to be low in many countries, reflecting the challenge of overcoming longstanding negative perceptions towards mental health.

While money is not everything, major reforms are likely to need protected funding. It is important that as the balance of services shift from institutions towards the community in some of the new EU member states that safeguards are put in place to ensure that funds are also fully transferred. Otherwise there is a temptation to use system reform as a vehicle for cost reduction, especially when the economic climate is tough. During such a transitional period funding will be required *both* for the new community services as well as for the institutions being phased out. One option may be to 'ring fence' funding for mental health, while other possible approaches (depending on local context) may include using resource allocation mechanisms that take account of mental health needs when distributing funding both geographically and across sectors in health (and other) systems.

Strengthening and making better use of the evidence base

Developing and strengthening policy for mental health across Europe remains another key concern, with a number of countries continuing to have dated policies and no action plans in place. A prerequisite to policy development should be to undertake a systematic appraisal of existing structures, funding mechanisms, entitlements and access to services. Such an analysis can also help to adjust resource allocation mechanisms to take account of mental health related factors.

It is clearly not enough to map out population needs, nor generate an evidence base on the effectiveness or cost effectiveness of different strategies or mix of services; a key challenge is to focus more effort on the way to get this information across to policy makers. Too often information is presented in an unsuitable dense and highly technical format, limiting its usefulness. More can be done to create effective channels of communication between

policy makers, researchers and other stakeholders, perhaps investing resources in training so called 'knowledge brokers': individuals with knowledge both of scientific methods and their interpretation, while also familiar and comfortable in the policy arena. This can also help identify gaps in knowledge of relevance to policy makers that are feasible for researchers to address.

International initiatives aimed at improving awareness of, and looking at the transferability of the results of interventions such as mental health promotion strategies, e.g. the work of IMPHA and cost-effectiveness studies through the WHO CHOICE (Choosing Interventions that are Cost Effective) programme and the MHEEN network in Europe can help build capacity and fill some of these gaps, and may strengthen the case further for investment in mental health.

Overcoming system fragmentation and barriers to co-ordination

Even if there is sufficient political commitment to investment in effective interventions to promote good mental well being and alleviate mental disorders, implementation remains problematic. Multiple costs, not just to different agencies within the public or private sector, but also to individual service users and their families, raise a number of challenges. In particular, unless the full cost implications of mental health problems, and of changes to mental health systems, are recognised, multiple costs raise the risk of the reform process being seriously under-funded. They also give rise to the potentially very constraining problem of *silo budgets*: resources held in one budget cannot be allocated to other uses, to the general detriment of the pursuit of effectiveness. There is also a risk that key opportunities to promote service user well-being will be missed, for example by denying individuals the opportunity to secure paid employment.

Some of these problems may be addressed through creation of joint budgets for mental health across sectors as seen in England, so that resource implications and benefits are shared by sectors, increasing flexibility to deliver services that best address need. The issue of resource inflexibility may also be addressed by a greater degree of partnership working with the not-for-profit NGO sector. NGOs may be commissioned to deliver services, and there is evidence, that they can respond more flexibly than the statutory sector to adapt to changing local circumstances.

It should be recognised though that in some countries, particularly in central and eastern Europe, key sectors that should be involved with mental health e.g. primary care and social work may be very underdeveloped, and have had little to do with the recognition and management of mental health problems. There may also be little experience, and indeed distrust of inter-sectoral working. Effective co-ordination between all agencies involved in both funding and delivering services is needed. One approach to improve co-ordination across sectors may be the use of a 'one stop shop' model where one agency is responsible for working with service users to help them to purchase services or gain access to entitlements not just in the health and social care sectors, but elsewhere e.g. providing help with housing and obtaining social security benefits.

Meeting the needs of the workforce

The needs of the mental health workforce should also not be overlooked when considering the balance of services. A well-trained workforce is a prerequisite for quality services. This should not be restricted to training in mental health related skills alone, there is also a need for training in organisational and managerial skills, which in particular are lacking in some countries, hampering reform and the co-ordination of multi agency, multi sector services. In former totalitarian countries governance structures may be poor and there may be little culture of using evidence to support the decision making process (Tomov et al. 2005). Administrators may be extremely reluctant to countenance change, they may also be worried about losing their status and authority if for instance institutions are shut down and replaced by community services. Employees in mental health systems will also be understandably concerned about their own job prospects as the balance in service provision changes.

Conclusion

Poor mental health is a major public health issue in Europe; it has many health and socioeconomic consequences for individuals and their families, as well as society generally. Certainly the last five years have seen a significant increase in the attention given to mental health in Europe, culminating in the intergovernmental conference and declaration on mental health in Helsinki in January 2005, under the auspices of the WHO, EU, Council of Europe and the Government of Finland. The Helsinki Declaration certainly is a welcome and positive development, setting out a whole range of actions that countries are committed to achieving. The challenge as ever is to turn such good intentions and fine words into actions and achievements.

References

- AFP (2005). Sweden sets out to tackle suicide. The Local: <http://www.thelocal.se/article.php?ID=1771&date=20050721>.
- Alonso, J., M. C. Angermeyer, et al. (2004). Psychotropic drug utilization in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatr Scand Suppl.* 55–64.
- Atkinson, J. M., M. C. Garner, et al. (2004). Models of advance directives in mental health care: stakeholder views. *Soc Psychiatry Psychiatr Epidemiol.* 39: 673–680.
- Beautrais, A. (2005). National strategies for the reduction and prevention of suicide. *Crisis.* 26: 1–3.
- Becker, T., S. Hulsmann, et al. (2002). Provision of services for people with schizophrenia in five European regions. *Soc Psychiatry Psychiatr Epidemiol.* 37: 465–474.
- Bejean, S. and H. Sultan-Taieb (2005). Modelling the economic burden of diseases imputable to stress at work. *Eur J Health Econ.* 50: 16–23.
- Berkels, H. and et al (2004). Mental health promotion and prevention strategies for coping with anxiety, depression and stress related disorders in Europe (2001–2003). Bremerhaven, Federal Institute for Occupational Safety and Health.
- Bijl, R. V., R. de Graaf, et al. (2003). The prevalence of treated and untreated mental disorders in five countries. *Health Aff (Millwood).* 22: 122–33.
- Commission of the European Communities (2004). The State of Mental Health in the European Union. Luxembourg, Commission of the European Communities: 86.
- Daly, A., D. Walsh, et al. (2004). Activities of Irish Psychiatric Services 2003. Dublin, Health Research Board.
- Dierckx H (2004). Financing Mental Health Systems – Belgium. Report prepared for the Mental Health Economics European Network.
- Dixon, A., D. McDaid, et al. (Forthcoming). Financing mental health services in low and middle income countries: equity and efficiency concerns. *Health Policy and Plan.*
- Evers S (2004). Financing Mental Health Systems – The Netherlands. Report prepared for the Mental Health Economics European Network.
- Gabriel, P. and M.–R. Liimatainen (2000). Mental health in the workplace. Geneva, International Labour Organisation.
- Haro, J. M., L. Salvador-Carulla, et al. (1998). Utilisation of mental health services and costs of patients with schizophrenia in three areas of Spain. *Br J Psychiatry.* 173: 334–40.
- Haug, H.–J. and W. Rossler (1999). Deinstitutionalisation of psychiatric patients in central Europe. *Eur Arch Psychiatry Clin Neurosci.* 249: 115–122.
- Haut Conseil pour l'Avenir de l'Assurance maladie (2004). Rapport du Haut Conseil pour l'Avenir de l'Assurance maladie. Paris.
- Henderson, G., J. Henderson, et al. (2004). Actions against depression: improving mental health and well being by combating the adverse health, social and economic consequences of depression. Luxembourg, Commission of the European Communities, Health and Consumer Protection Directorate General.
- Henderson, M., N. Glozier, et al. (2005). Long term sickness absence. *BMJ.* 330: 802–803.

- Herrmann, H., S. Saxena, et al. (2004). Promoting mental health: concepts, emerging evidence, practice. Geneva, World Health Organization in collaboration the Victorian Health Promotion Foundation and the University of Melbourne.
- Hosman, C., E. Jane-Llopis, et al. (2004). Prevention of mental disorders: effective interventions and policy options. Geneva, World Health Organization in collaboration with the Prevention Research Centre of the Universities of Nijmegen and Maastricht: 68.
- Houtman, I. L. D. (2004). Work-related stress. Dublin, European Foundation for the Improvement of Living and Working Conditions: 33.
- Jane-Llopis, E. and P. Anderson (2005). Mental health promotion and mental disorder prevention. A policy for Europe. Nijmegen, Radboud University Nijmegen.
- Jarvisalo, J., B. Andersson, et al. (2005). Mental disorders as a major challenge in the prevention of work disability: experiences in Finland, Germany, the Netherlands and Sweden. Helsinki, The Social Insurance Institution, Finland.
- Johnson, S., R. Kuhlmann, et al. (2000). The European Service Mapping Schedule (ESMS): development of an instrument for the description and classification of mental health services. *Acta Psychiatr Scand. Suppl* 405: 14–23.
- Kessler, R. C. and R. G. Frank (1997). The impact of psychiatric disorders on work loss days. *Psychological Medicine*. 27: 861–873.
- Knapp, M., M. Funk, et al. (Forthcoming). Mental health in low- and middle-income countries: economic barriers to better practice and policy. *Health Policy and Plan*.
- Knapp, M., R. Mangalore, et al. (2004). The global costs of schizophrenia. *Schizophr Bull*. 2: 297–293.
- Knapp, M., D. Novick, et al. (2003). Financing health care in Europe: context for the Schizophrenia Outpatient Health Outcomes Study. *Acta Psychiatr Scand, Suppl*: 30–40.
- Koivumaa-Honkanen, H., R. Honkanen, et al. (2003). Self-reported happiness in life and suicide in ensuing 20 years. *Soc Psychiatry Psychiatr Epidemiol*. 38: 244–8.
- Kovess, V., M. Caldas de Almeida Jose, et al. (in press). Professional team's choices of intervention towards problems and needs of patients suffering from schizophrenia across six European countries. *Eur Psychiatry*.
- Laing W and Buisson (2003). *Thriving private hospital market*. London, Laing & Buisson.
- Matschinger, H. and M. Angemeyer (2004). The public's preference concerning the allocation of financial resources to health care: results from a representative population survey in Germany. *Eur Psychiatry*. 19: 478–482.
- McDaid, D., C. Curran, et al. (2005). Promoting mental well-being in the workplace: a European policy perspective. *Int Rev Psychiatry*. 17.
- McDaid, D., M. Knapp, et al. (2004). Financing arrangements for mental health in western Europe. Mental Health Economics European Network. Phase I final report to the European Commission. Luxembourg, European Commission.
- McDaid, D. and G. Thornicroft (2005). Balancing institutional and community based care. Copenhagen, European Observatory on Health Systems and Policies.
- Monks, J., J. Strube, et al. (2004). Framework agreement on work related stress. Brussels, European Social Partners.
- Office of the Deputy Prime Minister (2004). Mental health and social exclusion. Social Exclusion Unit report. London, Office of the Deputy Prime Minister.

- Organisation for Economic Co-operation and Development (2003). Transforming disability into ability: policies to promote work and income security for disabled people. Paris, OECD.
- O'Shea, E. and A. NiLeime (2004). Financing Mental Health Systems – Ireland. Report prepared for the Mental Health Economics European Network.
- Parker, C. (2005). Developing mental health policy: a human rights perspective. Mental health policy and practice across Europe. G. Thornicroft, McGraw-Hill.
- Priebe, S., A. Badesconyi, et al. (2005). Reinstitutionalisation in mental health care: comparison of data on service provision from six European countries. *BMJ*. 330: 123–126.
- RFV (2003). Långtidssjukskrivna – egenskaper vid 2003 års. [Characteristics of long-term hospital admissions in 2003], RFV-LS-undersökning.
- Salvador-Carulla, L., G. Tibaldi, et al. (2005). Patterns of mental health service utilisation in Italy and Spain. An investigation using the European Service Mapping Schedule. *Soc Psychiatry Psychiatr Epidemiol*. 40: 149–159.
- Sartorius, N. (2002). Iatrogenic stigma of mental illness. *BMJ*. 324: 1470–1471.
- Scott, S., M. Knapp, et al. (2001). Financial cost of social exclusion: follow up study of antisocial children into adulthood. *BMJ*. 323: 191.
- Statistics Netherlands (2004). Statistics Netherlands website.
- Sutherby, K., G. I. Szmukler, et al. (1999). A study of 'crisis cards' in a community psychiatric service. *Acta Psychiatr Scand*. 100: 56–61.
- Teague, P. (1999). Reshaping employment regimes in Europe: policy shifts alongside boundary change. *J Public Policy*. 19: 33–62.
- Thomas, C. and S. Morris (2003). Cost of depression among adults in England in 2000. *British Journal of Psychiatry*. 183: 514–519.
- Thornicroft, G. and M. Tansella (2004). Components of a modern mental health service: a pragmatic balance of community and hospital care. Overview of systematic evidence. *Br J Psychiatry*. 185: 283–290.
- Tomasson K (2004). Financing Mental Health Systems – Iceland. Report prepared for the Mental Health Economics European Network.
- Tomov, T., D. Puras, et al. (2005). Mental health policy in former Eastern bloc countries. Mental health policy and practice across Europe. G. Thornicroft, McGraw-Hill.
- Varekamp, I. (2004). Ulysses directives in the Netherlands: opinions of psychiatrists and clients. *Health Policy*. 70: 291–301.
- Walsh, D. and A. Daly (2004). Mental Illness in Ireland 1750 – 2002. Reflections on the rise and fall of institutional care. Dublin, Health Research Board.
- Wittchen, H.-U. (2005). Size and burden of mental disorders in Europe – a critical review and appraisal of 27 studies. *Eur Neuropsychopharmacol*. 15: 357–376.
- Woodward, S. (2005). Suicide prevention. Belfast, Department of Health, Social Services and Public Safety.
- World Health Organization (2001). The world health report 2001 – Mental Health: New Understanding, New Hope. Geneva, World Health Organization.
- World Health Organization (2004). Changing History. The World Health Report 2004. Geneva, World Health Organization.
- World Health Organization (2005). Atlas. Mental health resources around the world. Geneva, World Health Organisation.

- World Health Organization (2005). Mental Health Action Plan for Europe. Facing the Challenges, Building Solutions. Copenhagen, World Health Organization.
- World Health Organization (2005). Mental Health Declaration for Europe. Facing the Challenges, Building Solutions. Copenhagen, World Health Organization.
- World Health Organization (2005). Suicide prevention website. Geneva, World Health Organization. 2005.
- World Mental Health Survey Consortium (2004). Prevalence, severity and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *JAMA*. 291: 2581–2590.
- Wynne, R. and D. MacAnaney (2004). Employment and Disability: Back to Work Strategies. Dublin, European Foundation for Work and Living Conditions: 128.
- Zaluska, M., D. Suchecka, et al. (2005). Implementation of social services for the chronically mentally ill in a Polish health district: consequences for service use and costs. *J Ment Health Policy Econ*. 8: 37–44.
- Zechmeister, I. (2004). Financing Mental Health Systems – Austria. London, Mental Health Economics European Network.
- Zechmeister, I., A. Osterle, et al. (2002). Incentives in financing mental health care in Austria. *J Ment Health Policy Econ*. 5: 121–129.
- Zuvekas S H (1999). Health insurance, health reform and outpatient mental health treatment. Who benefits? *Inquiry*. 36: 127–146.

6. NATIONAL PUBLIC HEALTH POLICIES IN THE EU

Previous sections of this report have reviewed trends in health status and living conditions in Europe, and provided more detailed discussion of key issues relating to health and mental health. The aim of this section is to outline some of the policy developments in the EU and Candidate Countries, first describing the organization of public health within the countries, reviewing national policies and strategies, and the use of health targets and evaluations, with a focus on policies addressing health inequalities. Specifically, how are countries addressing the determinants of health and health inequalities?

Key points:

- Public health decision-making is usually led at the national level, with implementation taking place at regional and local level.
- Decisions and priorities are determined largely on the basis of population health status, epidemiological data, and burden of disease.
- Economic evaluation in public health is limited to identifying screening target groups (in the EU-15), and only in the UK and Netherlands are other public health interventions subject to cost-effectiveness analyses.
- National public health policies exist, or are under development, in most countries; in the new Member States and Candidate Countries they are largely modelled after WHO Health for All guidelines.
- Reducing inequalities in health is a goal of the national or regional (e.g. Spain) public health or broader health policy in most countries; however more explicitly in the EU-15 countries (particularly in England, the Netherlands and Sweden) than in the new Member States and Candidate Countries.
- Health targets are increasingly being used in public health policy-making; with some countries solely relying on broad aspirational targets (e.g. Cyprus, Czech Republic, Estonia, Greece, Slovakia), while others employ quantitative targets.
- Data collection and accuracy is limited in several countries, making monitoring targets and policies extremely difficult (e.g. in Hungary and Malta).
- The importance of an inter-sectoral approach to public health policy-making (especially in reducing health inequalities) is recognized by many, but not all, countries, particularly in the Netherlands, Sweden, France, Latvia and Hungary.

Public health is the responsibility of all levels of government: national, regional and local, and it involves multiple sectors, non-governmental organizations, and private enterprise.

The national level, most often the Ministry of Health, is generally involved in enacting legislation that affects public health, guiding and regulating the regional and local levels in their delivering of public health services, and monitoring population health. Supporting agencies serve largely similar functions, namely research, providing public health expertise, surveillance, and health promotion. In several countries, this national role is relatively minor compared to the responsibilities and autonomy of the regions. For instance, in Sweden, Finland, Denmark and the Netherlands, the county/municipal level has considerable autonomy in public health (e.g. in funding, setting priorities, and implementing activities), while the national level monitors implementation, coordinates national programmes and develops national public health strategies. See the tables in Section 7.6 and Section 7.7 for a description of the national and regional level authorities involved in public health functions, and their supporting agencies, in the EU and the three Candidate Countries.

Many, although not all, countries have seen a need to initiate national public health strategies, accompanied by goals to be achieved. The strategies differ, reflecting the national context and political choices, but they also have much in common, for example the widespread emphasis on tackling inequalities in health. The concept of health strategies has echoes at an international level. In the European Union, following the Maastricht Treaty in 1993, eight priority areas were identified for community action programmes based on the burden of the disease, its socioeconomic impact, the degree to which it is amenable to preventive action, and whether the programmes would be valuable and complementary to current practice in the member states (Merkel and Hubel 1999). These priority areas were identified as: health promotion, cancer, AIDS, drug dependence, health monitoring, injuries, rare diseases and pollution-related diseases. In 2002, the EU established a new programme of community action in public health to be implemented in 2003¹⁴. This programme identifies the general objectives to improve information and knowledge for the development of public health, to enhance the capability of responding rapidly and in a coordinated fashion to threats to health and to promote health and prevent disease through addressing health determinants across all policies and activities.

None of the EU countries have systematic procedures for making decisions affecting public health, or setting priorities among different public health interventions. The methodology used for making decisions and setting priorities in public health typically relate to population health status, epidemiological data, burden of disease, and at times, scope for prevention. Also important in this process, however less documented, are political negotiations, pressure from interest groups, and informal processes. In addition, Sweden

¹⁴ Decision No 1786/2002/EC of the European Parliament and of the Council of 23 September 2002 adopting a programme of Community action in the field of public health (2003–2008)

bases decisions on an 'ethical framework' encompassing human dignity, need and solidarity (See Box 6.1; Calltorp 1999). Likewise, France highlights the importance of ensuring that decisions fit with societal values ¹⁵. The Netherlands and UK are increasingly utilising economic evaluation and evidence of interventions' effectiveness to guide decision making. In this way, they are progressing more rapidly towards creating an evidence based policy environment.

Box 6.1 The Swedish National Public Health Policy

In 2003, Sweden established for the first time a comprehensive national public health policy with the goal of creating the "societal conditions that ensure good health on equal terms for the entire population" (Östlin and Diderichsen 2001).

Three health issues were identified: increasing life expectancy, reversing the pattern of declining self-estimated good health among young people, and reducing the health gap between social strata.

The national policy highlighted eleven goals based on determinants of health:

- Participation and influence on society
- Economic and social security
- Secure and favourable conditions during childhood and adolescence
- Healthier working life
- Healthy and safe environments and products
- Health and medical care that more actively promotes good health
- Effective protection against communicable diseases
- Safe sexuality and good reproductive health
- Increased physical activity
- Good eating habits and safe food
- Reduced use of tobacco and alcohol, a society free from illicit drugs and doping, and a reduction in the harmful effects of excessive gambling.

An example of decentralized decision-making in public health can be seen in **Germany**.

The federal role in public health is minimal and there is no national public health policy. The Länder have almost complete autonomy, while adhering to the Basic Law that the structure of state government must "conform to the principles of republican, democratic, and social government based on the rule of law". The Länder are further subdivided into administrative regions that decentralize Land administration and are run by district presidents who are appointed by the Land minister president and report to the Land minister of the interior. The smallest administrative units are the municipalities which

¹⁵ Projet de loi de politique de santé publique:
http://www.santé.gouv.fr/htm/actu/santé_publicue/4santé_publicue.htm#7

constitute the district/region. It is the Länder-level that is most relevant to decision making in public health, with assistance from lower levels in implementation.

In **Belgium**, as in Germany, there is no single overarching health policy. Although there is some coordination at national level (e.g. the Federal Tobacco Plan; and National Plan for Dietary Habits), public health policies are devolved to the two Communities: Flemish and French., . The Flemish Community outlined five objectives in 1998 (and because they were not realised in 2002, were again taken up for the period 2002–2006 with the addition of a sixth objective):

- Number of deadly accidents (private and traffic accidents) must decrease with 20%;
- Number of smokers in Flanders, both women and men, and specifically the young people, must be decreased with 10%;
- Consumption of greasy food must be decreased in a significant way in favour of low-fat and high-fibre food;
- Prevention of infectious diseases must be improved in a significant way, particularly by further raising the degree of vaccination for disorders as polio, whooping cough, tetanus, diphtheria, measles, mumps and rubella.
- Increase efficiency in breast cancer screening: the share of the target group (women between 50 and 69 years old) in the total number of screenings must increase to 80% and the number of women from that specific target group that is reached must increase up to 75%;
- Number of deaths by suicide must be reduced by 8% by 2010.

In the French Community of Belgium, the latest 5-year programme (2004–2008) in public health identified the following priority action areas, (along with short- and medium-term targets):

- Prevention of addiction;
- Prevention of cancer;
- Prevention of infectious diseases;
- Prevention of traumas and promotion of security;
- Promotion of physical activity;
- Promotion of dental health;
- Promotion of cardiovascular health;
- Promotion of wellbeing and mental health;
- Promotion of children's health;
- Promotion of a clean environment.

The Ministry of Health and Social Affairs in **Spain** developed a strategy in 2003 "Strategy Health XXI" with 21 objectives, one of the objectives is to offer guidelines to the regions. The regions then translate these policies based on their local needs, and develop their own strategies. For example, the Canary Islands Health Plan 2004–2008 aims at 1) improving length and quality of life and reducing health inequalities by guaranteeing solidarity and equality in health resources distribution; and 2) improving health services efficiency.

Unlike other countries, in the **Czech Republic**, the national public health strategy, *Health 21 – A Long-Term Programme for Improving Health of the Population of the Czech Republic*, which was approved by government in October 2002, focussing largely on financing health care as opposed to public health. It is believed however that the recommended actions will not be easily achieved, and no funds were allocated to achieving them. Moreover, health improvement and inequality reduction are not identified by government as key issues on the health care agenda. While health care, more generally, is a priority of the new government from May 2005, the main areas of concern are, among other things, financing, and organization and legal status of hospitals. The main points of the new governments plan are:

- New laws on health providers, on health care, and on drugs will be prepared
- Preventive programmes will be supported.
- Health care paid from social insurance will not be restricted, and cost-sharing will not be increased
- Restructuring of services in the capital, Prague, and neighbouring regions.
- Mental health care will be improved by implementation of Helsinki Declaration 2002.

There is no national public health policy in **Estonia**, although several drafts have been prepared none have reached discussion/approval by government. Individual strategies exist, however, such as: National HIV/AIDS prevention programme (since 1992), National TB programme (since 1997), National drug-addiction programme, school health programme, and prevention programme for cardio-vascular diseases – all managed by the National Institute for Health Development. Also, a new Tobacco Law banning smoking in all public places including restaurants was passed in April 2005.

The first public health strategy in **Hungary** was in 1994 – Priorities of public health until the millennium – which defined five national goals to be achieved by 2000. However, due to lack of political and financial support, the programme was never launched. In 2001, a National Public Health Programme was developed by governmental decree, based on the previous (unimplemented) programme and in 2002 was modified and named: “Johan Bela National Programme of the Decade for Health”. The strategy has two aims: (1) protecting and improving health of the population throughout their lives and (2) reducing the prevalence of major illnesses, injuries and causes of death, and cutting down related suffering. Furthermore there were four specific goals:

- Creating a health-promoting social environment
- Programmes of healthy lifestyles to reduce risk factors
- Preventing avoidable mortality, morbidity and disability
- Developing the institutional system of health care and public health

The influence of WHO Health for All on public health policy-making is evidence in Latvia, Lithuania and Poland. In **Latvia**, the public health strategy was developed in 2001 on the basis of WHO European regional Health for All strategy and compatible with EU directives.

Its aim is to improve health by impacting social and economic problems, inequalities, poverty, and social exclusion – the most important determinants of ill health and contributors to social exclusion. A Public Health Action Programme 2004–2010, based on multi–sectoral cooperation involving 12 ministries and 60 different institutions, was developed alongside the strategy outlining timetables, financial resources and institutions responsible for implementing the various measures and reports are produced every five years on progress towards the goals. Likewise, **Lithuania** has adopted the European Health for All strategy and developed the Lithuanian Health Program 1997–2010. The goals are to:

- Reduce mortality and improve average life expectancy – by targeting the common causes of death
- Achieve equity in health and health care
- Improve quality of life.

Finally, in **Poland** the first national health strategy (in 1987) was based on Health for All – and subsequent policies (1990; 1995; and 2000) have been revisions of that policy.

6.1 Health inequalities

Health inequalities are increasingly recognised as an important public health issue throughout Europe. Reducing inequalities in health requires a multi–sectoral approach that addresses not only health and social care service provision and poverty alleviation, but also housing, environment, diets, smoking and alcohol consumption. The extent to which countries are embracing this inter–sectoral approach to policy–making is described in more detail below. Almost all EU Member States have identified the reduction of health inequalities as a goal of the public health or broader health policy; however in some countries this goal is outlined more explicitly than in others. Significant policy developments have been seen in England, the Netherlands and Sweden in reducing health inequalities, although to date there has been little evidence that they have been successful.

In contrast to the more central–led policies in England, the Netherlands has embarked on programme of local experiments with a strong emphasis on evaluation. However national implementation has been hindered due to a period of political instability between 2002–2003 (see Box 6.2 for a detailed description of the health inequalities strategy in the Netherlands).

According to a recent report funded by the UK Presidency reviewing national–level policies and strategies to reduce social inequalities in health, there is no EU Member State that is making a concerted effort to reduce the social gradient in health (Judge et al. 2005). Despite widespread attention paid to socioeconomic inequalities in health across countries, there remains considerable variation in the form and nature of the policy goals and targets. These differences can be attributed to: availability of data about the nature and extent of inequalities; differing levels of political will; state of economic development; and the role of

international agencies. The report goes on to categorise countries according to the scope of their national strategies to reduce health inequalities:

1. The UK and Ireland have well-developed and coordinated action plans
2. The Netherlands, Finland, Denmark, Hungary, Italy, Poland and Sweden incorporates health equity into broader public health policies
3. Belgium (Flanders) and France have developed a series of programmes to reduce health inequalities, but they are not necessarily part of a broader policy
4. Cyprus and Greece lack a distinctive focus on health inequalities, but have developed some programmes directed towards social determinants of health at national and local levels

The remaining countries have no explicit national health inequalities policy, but many acknowledge the problem, as reflected in various policy statements.

Since the mid-1980s, reducing inequalities has been a major policy objective in Sweden (Burström et al. 2002). The formation of the National Institute for Public Health in 1991 further strengthened the support for equality in health. More recently, Sweden has undergone structured policy developments in the area of health inequalities (Machenbach and Bakker 2003). To address the relationship between labour market and working conditions and health inequalities, Swedish labour market policies offer strong employment protection and actively promote participation in the labour market for people with chronic illness. These policies have been found to protect these vulnerable groups from labour-market exclusion. In addition, Sweden has made considerable progress in health impact assessments, specifically in assessing the effect on health inequalities of the European Community agricultural policy. Furthermore, general social policy measures are in place to improve the health and well-being of lone mothers, such as subsidized public childcare. The recent national public health programme has the goal of creating the “societal conditions that ensure good health on equal terms for the entire population”. This programme emphasizes social connections such as social capital, supportive social environment, and a secure bond between children and their parents. In addition, there are strong ethical undertones, such as a sense of solidarity. Although for many years Sweden has been pursuing equality-oriented health and social policies, there are nowadays some indications that inequalities are increasing. Therefore, continued efforts to research and develop wide-reaching policies are needed.

In England there has been considerable effort directed to researching and developing policies to reduce health inequalities – being some of the largest in Europe. Indeed some argue that the programme in the United Kingdom is one of the most coherent and ambitious to date (Couffinhal et al. 2005). In July 2003, a national health inequalities strategy was launched: *Tackling Health Inequalities: A Programme for Action*. This strategy aimed to review progress against the 2010 health inequalities Public Service Agreement (PSA) target from 2002 and 12 national headline indicators. The target was:

By 2010 to reduce inequalities in health outcomes whole by 10% as measured by infant mortality and life expectancy at birth.– both between routine and manual groups and the

population as a whole, and local authorities with the fifth of areas with lowest life expectancy at birth and the population as a whole.

The overall aim was to prevent health inequalities from worsening, given that the long-term trend showed that the gap in mortality between professional (social class I) and unskilled manual men (social class V) has increased by two and a half times since 1930–32. By 2004, there was no narrowing of health inequalities against the PSA target. On the contrary, there was a widening of inequalities in infant mortality and life expectancy (between 1997 and 2005), reflecting the long-term trend. However, on a more positive note, some progress has been made in reducing child poverty (the proportion of children in absolute poverty has been halved in five years) and improving housing (specifically, the proportion of households living in non-decent housing”). According to the most recent national public health policy in 2004 (Choosing Health), all government departments now systematically take into account the impacts of new policy proposals on health and health inequalities.

In **Cyprus**, two simultaneous policies to reduce health inequalities were developed in 2003: 1) the National Action Plan for Social Inclusion included among its targets the reduction of disparities; and 2) the Health Council identified the need to increase health services in rural areas and implementing preventive programmes in community and schools in an attempt to reduce inequalities.

Greece passed a legislation in June 2005 regarding the organization and operation of public health services, with emphasis placed on reducing socioeconomic inequalities.

One of the difficulties encountered in developing and monitoring a strategy to reduce inequalities is limited data on inequalities, as seen in Italy. In the Czech Republic, on inequalities in health are not identified as a priority issue in health policy, and little data are available. Similarly in Malta, health inequalities are not featured prominently on the political agenda, partly due to lack of epidemiological data and research in this area, and partly due to the misconception that by offering health service free at the point of use to poor members of society inequalities would stop being a problem. Although there is increasing evidence on the presence of health inequalities in Estonia, they have received little attention to date. Latvia and Lithuania address health inequalities explicitly in their public health policies. In addition, Latvia is beginning to develop the first national action plan on poverty and social exclusion for 2004–2006 (as in Malta). In Hungary there is some focus on regional inequalities in health – and current health policies are addressing this issue alongside data collection in order to continue to measure its progress.

While the primary focus of policies addressing inequalities in health is the socioeconomic dimension, some countries, like Hungary, also address ethnic differences (specifically, the Roma population).

Box 6.2 The Dutch Programme on Socioeconomic Inequalities in Health

Two comprehensive research programmes were commissioned to increase understanding of health inequalities. The first, from 1989–1993, generated considerable knowledge about the extent of inequalities in the Netherlands and their determinants. The causes of inequalities were revealed to be both structural, such as living and working conditions, and behavioural, such as smoking and exercise. A second programme was initiated in 1995 in order to generate more knowledge on the effectiveness of interventions and policies to reduce these inequalities. Some of the interventions that were evaluated were workplace interventions and school-based programmes to promote healthy behaviour in young people, e.g. preventing children from starting to smoke.

The Strategy

The Dutch Programme on Socioeconomic Inequalities in Health, established in 2001, has four policy strategies:

To reduce inequalities in education and income

To reduce the negative effects of health problems on socioeconomic position

To reduce the negative effects of socioeconomic position on health (for example, reduce the prevalence of smoking in the lower classes)

To improve access and effectiveness of healthcare for low socioeconomic groups.

In addition to these four general strategies, there are eleven quantitative targets

Targets relating to socioeconomic disadvantage

Percentage of children from lower social class families who enter secondary education to be increased from 12% in 1989 to $\geq 25\%$ by 2020.

Income inequalities in the Netherlands to be maintained at the level of 1996 (Gini coefficient = 0.24).

Percentage of households with an income below 105% of the “social minimum” to be reduced from 10.6% in 1998 to $\leq 8\%$ by 2020.

Targets to reduce effects of health on socioeconomic disadvantage

Disability benefit for total work incapacity due to occupational health problems to be maintained at the level in 2000.

Targets related to factors mediating the effect of socioeconomic disadvantage on health

Difference in smoking between those with lower and those with higher education to be halved, by decreasing the percentage of smokers among those with only primary school education, from over 38% in 1998 to $\leq 32\%$ by 2020.

Difference in physical inactivity between those with lower and those with higher education to be halved, by decreasing the percentage of the physically inactive among those with only primary school education, from over 57% in 1994 to $\leq 49\%$ by 2020.

Difference in obesity between those with lower and those with higher education to be halved, by decreasing the percentage of obese persons among those with only primary school education, from over 15% in 1998 to $\leq 9\%$ 2020.

Difference between lower and higher education groups in percentage of those engaged in heavy physical labour to be halved, by decreasing the proportion of people with complaints resulting from physical labour among those with primary school education only, from 53% in 1999 to $\leq 43\%$ by 2020.

Difference in control in the workplace between those with lower and those with higher education to be halved, by increasing the percentage of persons who controlled the execution of their work among those with only primary school education from 58% in 1999 to $\geq 68\%$ by 2020.

Targets related to accessibility and quality of healthcare services

Differences in use of health services between lower and higher education groups to be maintained at the level in 1998.

6.2 Health targets

Health targets were officially and internationally promoted by the WHO Health For All programme launched in 1980. For the European countries, this programme led to the formation of 38 targets that were endorsed in 1984. These targets focussed on reducing health inequalities, reducing mortality and morbidity from certain disease groups, improving health of specific groups, and targeting health determinants. Furthermore, each country was expected to elaborate these targets in its own way and monitor progress in these areas. Data from all countries were organized by the Health for All database. In 1998, revisions were made to the original targets, and 21 Targets for the 21st Century—a public health guide to the Health for All policy for the European Region was established.

While the WHO Health for All targets had a significant influence on health *policy* developments in the European region (for instance as seen in Latvia, Lithuania and Poland), no European country has formally incorporated the targets into its health policy. Thus, they remained political constructs that ultimately had no force and weren't translated or operationalized into national strategies. The use of health targets in public health policy is important in several countries, however, they are largely qualitative and used as sources for inspiration rather than technical tools.

When comparing health targets in different countries, in addition to variations in focus, there are also differences in the motivation behind setting targets (Van Hertem and Gunning-Schepers 2003). Three general goals of health targets have been noted: to launch the debate on the development of health policy strategies within a country or region; to contribute to reorienting health care, for instance by increasing funding for prevention; and to contribute to the improvement of population health while challenging health care structures and processes. These variations create difficulties in evaluating the success of health targets, and there is a growing need to develop reliable evaluation systems to be used within a country, and in international comparison (Wismar 2001).

The issues of health reporting and target-setting were addressed in Germany at an international conference in 2001 (Robert Koch Institut 2001). While the German Ministry of Health has political responsibility for federal health reporting, organizational responsibility lies with the Robert Koch Institute, operating closely with the Federal Statistics Office (Ziese 2001). A catalogue of criteria is used to identify priority areas for forthcoming health reports. These criteria include prevalence of diseases/health problems, distribution of specific risks, individual importance (e.g. risk potential, case fatality, social and financial consequences), group-specific importance (e.g. age- or sex- differences, social gradients, regions), social importance, international importance, legal and political framework, and population-based dynamics (e.g. incidence and prevalence changes). Improvements have been made in facilitating close cooperation between the health reporting systems at the federal and Länder levels, by increasing comparability of data sets for example. This progress in health reporting in Germany has been an important first step in defining and evaluating national health targets. Significant advances in developing health targets have been made in one of Germany's Länder, North Rhine Westphalia (See Box 6.3).

Significant efforts to develop specific health targets are seen in Finland and Denmark, such as reducing smoking by a certain percentage; however, little is known about the methods used to set these targets, or if they will be effective in achieving the public health goals. The use of specific, measurable targets is also seen in the Netherlands' inequalities reduction strategy (see Box 6.2). While the recent Public Health Act in France makes use of targets, the large quantity of targets selected (100) may limit the degree to which they can be effectively monitored.

Box 6.3 Health targets in North Rhine Westphalia

North Rhine–Westphalia (NRW) is one of the Länder in Germany with the most developed system of health reporting, which increases the capability to define, and the accuracy of, outcome–oriented targets (Weihrauch 2002).

NRW is, to date, the only Länder in Germany to have set health targets, and the first German state to be involved in a comprehensive, systematic, and rational process of health targeting. In 1995, ten major health targets were outlined for NRW related to reducing CVD, controlling cancer, identifying settings for health promotion, tackling tobacco, alcohol and drugs, environmental health, improving primary and hospital care, community services for people with special needs, and improving health information support.

These targets were largely based on the 38 WHO Health Targets, and then revised to fit the epidemiological and social structures of North Rhine–Westphalia. They are related to three levels of action: orientation towards disease patterns; health care; and methods and instruments. More specifically, the targets were selected and weighted according to the following criteria:

- The current incidence of diseases
- Life–years lost, risk involved, and mental suffering from the perspectives of those affected and the community
- Medical prevention
- Addressing social determinants of health
- Rate of uptake of existing prevention options
- Amenability to treatment in medical–scientific terms
- Rate of uptake of existing treatment options
- Direct and indirect costs of disease
- Costs of disease prevention and of attaining the health target
- Reliability of the prioritisation as health target.

The health target setting experience of NRW is widely believed to have led to health gain in addition to an improvement of the functioning of the health system.

All health targets are broad and inspirational in Cyprus, Czech Republic, Greece, and Slovakia. Targets have been used in Hungary although they were widely criticised from health experts because of the limited (and very recent) health monitoring system in the country. Similarly quantitative health targets are also seen in Malta – although they are criticised because of lack of monitoring. Thirteen general targets were developed for the Latvian Public Health Strategy as outlined in Box 7.4. Lithuania also has developed very

similar targets, such as reducing health inequalities by 25%, and also some different ones, for example, to reduce alcohol consumption by 25% by 2010.

Overall, targets are used to guide policy-making in a general and aspirational manner, and focus on disease areas or lifestyle changes, however, more information is needed to determine how targets should be set in order to better achieve the public health goals.

The majority of countries in the EU do not incorporate health targets into their policies to reduce health inequalities. For instance, in Denmark, France, Hungary, Italy, Poland, Slovak Republic and Sweden, health equity is expressed as a broad policy goal, without being accompanied with specific targets. On the other hand, some countries have embraced target-setting in their efforts to reduce health inequalities. The Czech Republic, Latvia and Lithuania, as with their more general health policies, follow WHO Regional Office for Europe recommendations including their use of targets. Also, the Netherlands and Finland have few general targets relating to inequalities in health; in the Netherlands there is also much attention at the local level. Finally, in the UK and Ireland there is a wide range of targets set to direct policy and monitor progress in reducing inequalities.

While most countries are not incorporating targets into national policies to reduce health inequalities, some have developed targets on a regional basis. For example in the Basque region of Spain specific targets have been set up. Regional targets are also seen in Italy.

Box 6.4 Health targets for the Latvian Public Health Policy (to achieve by 2010)

Target 1. Life expectancy at birth should approach to 95% of the averages of the European Union Member States

Target 2. Equity and Solidarity in Health. By 2010 the gaps among health indices between socioeconomic groups should be reduced by at least at quarter by substantially improving the level of health of disadvantaged groups.

- Inequalities in health between socioeconomic groups should be reduced by 25%

Target 3. A healthy start in life. By 2010 health of newborn babies, infants and pre-school children should be significantly improved.

- Infant mortality rate should be reduced to below 10 per thousand births.
- Mortality and disability from external causes should be reduced by at least 25%.

Target 4. Health of School Children and Teenagers. By 2010 all schoolchildren and teenagers should be significantly healthier and better able to fulfil personal and social responsibilities to health and well-being.

- Mortality and disability from external causes in youths should be reduced by at least 25%.

Target 5. Health in adulthood, healthy and active ageing. By 2010 chances of surviving to old age and keeping life quality should be increased and people over 65 years of age should have the opportunity to enjoy their full health potential and contribute to social life.

Target 6. Improving mental health. By 2010 people's mental health should be improved and good mental health care services should be available and accessible by all people.

- Suicide rates should be reduced by at least 25%

Target 7. Reducing communicable diseases. By 2010 the control of communicable diseases should be at least as good as the European Union average.

Target 8. Reducing non-communicable diseases. By 2010 morbidity, disability and premature mortality due to major non-communicable diseases should be reduced to the lowest achievable levels.

Target 9. A healthy and safe environment. By 2010 the environment should become safer, so the population shouldn't be under exposure of contaminants and health risk factors hazardous to health.

Target 10. Reducing health disorders from violence and accidents. By 2010 there should be a significant and sustainable decrease in injuries, disability and death arising from violence and accidents.

Target 11. Healthier living. By 2010, people should have adopted healthier patterns of living..

Target 12. Reducing harm from alcohol, drugs, psychoactive substances and tobacco.

Target 13. Settings for health promotion. By 2010, the people should have greater opportunities to live in healthy physical and social environment at home, school, work and in the local community.

6.3 Inter-sectoral policy-making

The inter-sectoral nature of public health makes it necessary to develop linkages with actors from many sectors. Several of the policies described below provide examples of such linkages, whether at national level, among ministries, or at local level, as in community development projects in the Netherlands that bring together local government, health care providers, and universities. For all these reasons, several countries are seeking ways of co-ordinating the extensive activity that is taking place.

For example in Sweden, the 2003 public health policy makes explicit links between the policy goals and the determinants of health (as seen in Box 7.1); it recognizes that public health should combine health and medical care policy with general social policy on both national and local level. Therefore, there are authorities that were given the added responsibility of integrating aspects of public health into their mandate. For instance, the National Road Administration, responsible for most transport policy, is also responsible for the impact transport has on health and traffic safety. Also, the National Agency for Education is responsible for education policy and in particular how schools influence the health of the students. Therefore, the 11 domains of the public health policy inevitably involves a large number of authorities across several sectors.

In Hungary, the recent National Public Health Programme recognizes the importance of inter-sectoral collaboration for improving health. It states “the impact of political decisions and of socioeconomic changes on the state of people’s health must be monitored on an ongoing basis, with a particular focus on the differing and unequal health status of different population groups”. Examples of inter-sectoral collaboration are seen between the Ministry of Health and the Ministry of the Environment in the framework of the National

Environmental Health Action Programme; and between the Ministry of Health and Ministry of Education in order to develop health promotion programmes.

Latvia's public health policy has an inter-sectoral coordination commission aimed at: public health risk factors, environmental protection, food safety, animal health, consumer protection, free movement of health practitioners, health and safety at work, pharmaceuticals, social security systems, research and information technology.

Little or no policy attention has been paid to multi-sectoral public health strategies in Cyprus, Czech Republic (with exception of the Council of the Government for Anti-Drug Policy and the Council for Health and Environment), Spain and Italy.

In France, one of the objectives of the Public Health Act of August 2004 was to favour multi-sectoral policies. National plans, which are announced in the Public Health Act for the 2004–2008 period, really emphasize this point. For instance, the National Environment and Health Plan for 2004–2008 (announced in June 2004) involves the MoH, the Ministry of Ecology and durable development, the Labor Ministry, and the Research Ministry. The 'Health at Workplace' Plan 2005–2009, announced in February 2005, involves the Labour Ministry, in cooperation with The High Council on occupational risks prevention and the Ministries in charge of ecology, agriculture and transports.

Inequalities in health should be a cross-governmental issue. Indeed, many governments do recognise the need for multi-sectoral policy-making in this area. In some countries, e.g. Estonia, Italy, the Netherlands and Slovak Republic, there is general commitment to health equity across government, yet no formal coordination mechanism. In other countries, there is some degree of coordinated action although it is not formalised, for example in Hungary (Inter-ministerial committee for the Roma), Spain (in its social inclusion plan), Germany, Denmark and Poland. Advanced, formal coordination is seen in Ireland, Sweden and the UK (Judge et al. 2005). It is vital that countries move towards this model of policy-making if improvements in health inequalities are to be realised.

Monitoring and (economic) evaluation in public health

The extent of monitoring and evaluation of public health policies appears to be quite limited in the EU. This is the perhaps one of the weakest areas of public health, requiring the most attention and investment. However, it is unclear whether or not this limitation reflects a lack of political will. Many countries have only recently introduced programs, and, therefore, it might be too early to judge whether adequate evaluation will take place. Some programmes that are currently in place in several countries have been evaluated and proven effective but others are not. There are potentially great benefits from international cooperation to develop such an evidence base, incorporating economic evaluation where appropriate. All countries recognize that one of the major challenges facing public health is to develop a more systematic methodology of setting priorities and making decisions among different interventions. However this widespread recognition has not materialised

into concrete actions. It is clear that there is a need for a much broader evidence base for policy-making in public health.

There is no reported use of evidence-based public health policy making in Cyprus or Czech Republic. However, in Estonia in 2005 the University of Tartu and WHO introduced Estonian disease and risk burden study, which also includes cost-effectiveness analysis of alcohol and tobacco policy interventions at population level based on WHO CHOICE model. In the future there is plan to make the cost-effectiveness analysis for HIV and AIDS interventions. Also, in Malta, economic perspectives are increasingly being taken in public health policy-making, however most evidence is sought from other countries and then adapted to the epidemiological situation in Malta – more training and expertise is needed before economic evaluation is more widely used.

In most countries, economic evaluation is generally ignored in the process of decision-making in public health. One exception is for national screening campaigns (in some EU-15 countries, e.g. France, England); cost-effectiveness evaluation is generally used to define strategies, in particular in determining ages of targeted populations.

In strategies to reduce health inequalities, there is also little evidence that countries are using systematic and comprehensive evaluations of programmes or policies.

6.4 National public health strategies in Bulgaria, Romania and Turkey

All three candidate countries have national public health strategies that broadly aim to improve population health. And in the process of harmonization with European Union standards there has been some improvement in acknowledging some of the shortcomings of public health policy and identifying priority areas.

There is little explicitly mentioned in the area of health inequalities, despite this being a significant issues in these three countries (see Box 6.5). In addition, there is little evidence-based policy making, rather policies are based on (often unreliable) population health data, typically: demographic trends, burden of diseases, socioeconomic and environmental determinants of health. Finally, in the three Candidate Countries there is very little multi-sectoral policy making, with the exception of the National Anti-Poverty and Social Inclusion Plan in Romania, which addresses housing, crime, corruption, employment, and health and social care.

In **Bulgaria**, In April 2001, the Council of Ministers adopted a national health strategy, “Better Health for a Better Future in Bulgaria”, developed by the Ministry of Health with the support of WHO and the World Bank. The strategy’s fundamental aim is to guarantee the protection of health and social welfare of the population. It analyses the health status of the Bulgarian population as well as the health system and formulates strategic long-run aims and objectives.

The 2004 Bulgarian Health Act outlines the national strategy's goals and recommendations based on the following six principles:

1. Equity of health care access and utilisation;¹⁶
2. Access to high quality health care (with special emphasis on children, pregnant women and women who had given birth within the last year);
3. Health promotion and integrated disease prevention;
4. Reduction of health risks associated with adverse working and living environmental factors;
5. Special health care for children, pregnant women, women who had given birth within the last year, and people with physical and physical disorders;
6. State participation in the financing of health protection and prevention activities.

In addition, there are 22 specific health programmes. The strategic areas these programmes encompass are the following:

- Diseases of particular social importance (tuberculosis, mental health, oncology, cardiovascular diseases, renal diseases) – 8 programmes
- Tobacco, drug addiction, alcoholism, HIV and sexually transmitted diseases – 4 programmes
- Congenital diseases – 1 programme
- Parasitic Infectious diseases – 1 programme
- Antibiotic policy – 1 programme
- Food and nutrition – 1 programme
- Environment and health – 1 programme
- Hospital hygiene – 1 programme
- Medical standards – 1 programme

In **Romania** in 2004 the Ministry of Health adopted a national public health strategy developed under a World Bank project with the following objectives:

- Stop the negative trends and to create conditions for improving population health status
- Adopt the European Union's principles and policies in regards with public health
- Continue the health system reform process in order to improve its performance, as an essential premise for health status improvement

¹⁶ The National Health Strategy points out that access to health care in small towns and villages, with predominantly elderly population, is quite difficult. There are important regional disparities in the distribution of health equipment (regardless of the fact that ¾ of all health equipment is more than 20years old). Lastly, inequity arises also by the informal payments for health care (A survey conducted in 1998 reveals that 51% of the interviewed have paid for free of charge health and dental services in public health care establishments.)

More specific objectives are to:

1. Reduce the burden of non-communicable diseases
2. Increase system capacity to control communicable disease
3. Improve population mental health
4. Ensure an adequate level of health status and quality of life of the entire population of Romania
5. Improve control of the risk factors such as environment and lifestyle as well as early detection of diseases (screening)
6. Improve health system management

The Romanian government (as of December 2004) identified three priority areas in health:

1. Equal access to basic, effective medical care
2. Increase quality of life by improving the quality and the security of medical act
3. Approach the health and demographic indicators of other developed countries, at the same time decreasing the health risks and diseases specific to lower income countries

And in **Turkey** in 2003 the government introduced a health reform proposal entitled “The Health Transformation Programme”. Its implementation has so far not been complete. The main objectives of this programme were “to organize, to provide financing and to deliver health services in an effective, productive and equal way”. Equity was defined as “the achievement of access of all citizens in Turkey to health services and their contribution to the finance of the services on the extent of their financial power. The scope of equity includes decreasing the gaps concerning access to health services, and health indicators among different social groups, between rural and urban areas, and between east and west.” (Health 2003) ¹⁷ The principal components of the programme are as follows:

- Restructuring the Ministry of Health as the planner and coordinator of health policy; enhancing its core functions of setting priorities, managing public health processes, and ensuring quality
- Establishing a General Health Insurance scheme with the aim of providing everyone with access to health care
- Establishing the “family physician” scheme – aimed not only to improve the inequality that was mentioned but as well to increase the overall efficiency of the system
- Separating service provision from financing
- Granting financial and administrative autonomy to hospitals
- Providing improved training for health personnel

¹⁷ Ministry of Health (2003), *Transformation in Health*,
http://www.saglik.gov.tr/extras/dokuman/donusum_eng_2.zip.

- Establishing a School of Public Health and a National Quality and Accreditation Agency for Health Services. The School of Public Health would be responsible for the training of health professionals in the use of up-to-date techniques in the field of public health and in the implementation of a multidisciplinary approach.
- Improving health information systems

Since the Law on Socialization of Health Care Delivery was passed in Turkey in 1961, an ongoing component of health policy making is the preparation of five-year development plans. The main target areas regarding public health issues set out in the 8th five-year development plan, prepared for the 1999–2004 period, are as follows:

- fighting infectious diseases and enhancing the immunization system;
- improving reproductive health;
- care on nutrition;
- enhancing school health services;
- fighting chronic disease such as cardiovascular disease, lung cancer, diabetes, and dental health problems;
- improving mental health;
- rehabilitation of the disabled and elderly;
- improving health education and promoting a healthier lifestyle (fight against drugs, alcohol, smoking; promoting sport activities);
- improving environmental health;
- improving occupational health.

Furthermore, also in the context of Turkey's EU accession bid and the harmonization process with EU norms, some additional public health-related priorities have been set out by the government (Adaman 2003):

- to make preventive health services more effective
- to integrate the family physician model into the delivery structure of primary health services

to entrust the Ankara-based Refik Saydam Public Health Centre with the task of serving as a national reference institution for the purpose of providing laboratory and control services for vaccination, medicine, food and the environment.

Box 6.5 Insufficient policies to reduce health inequalities in the three Candidate Countries

In all three Candidate Countries tackling inequalities in health is not an explicit goal of the national health policy. However, in **Bulgaria** inequalities in health is incorporated into the overall plan for health care reform. For instance, the main priorities related to health promotion and prevention in the national health strategy addresses reducing the risk factors affecting the health of disadvantaged groups of the population. The Ministry of Health does *not* address basic socioeconomic issues such as the impact of unemployment and poverty/low incomes on health. However, the Directorate for Health Prophylactics and State Sanitary Control (Ministry of Health) as well as the Hygiene and Epidemiology Inspectorates have developed programmes to reduce tobacco consumption, alcohol and drug misuse, HIV and sexually transmitted diseases and improving diet.

Also, in the recent **Romanian** government's governance paper health inequalities are identified as a key area of concern, but specific objectives or programmes have not been developed. In **Turkey**, although social justice and equity are among the catchphrases of almost all policy documents related to health issues, serious policies toward improving living conditions and alleviating poverty are missing.

Health targets

On the whole health targets are being increasingly used in the three Candidate Countries as a policy-making tool; however, they remain largely aspirational and when measurable, they are rarely achieved. In Bulgaria the targets appear somewhat more operational (see Box 7.6).

For instance in **Romania**, general targets have been set over the years relating to the improvement of health status of the population. "White papers" from 1994 and 1997 aimed specifically to address health system reforms, better use of resources and resource generation as means of achieving the aspirational target regarding the improvement of population health. Quantitative targets were introduced more and more to the national health programs after the new law on public health was introduced in 1999. The national public health strategy sets specific targets to be achieved within the forthcoming years (e.g. 15% reduction in tuberculosis incidence by 2010; a reduction in maternal mortality to 10/10000 live births by 2015).

In Turkey goals and priority areas set in the health-care policy documents are primarily based on health targets (both quantitative and aspirational) such as reducing the infant mortality rate, reducing the measles cases and deaths by fifty percent within 5 years, achieving universal standards in health-care, and targeting full health coverage. However, significant inconsistencies and inaccuracies in the statistical data render almost impossible to make comparisons—either between different periods or with other countries—and therefore reliable evaluations.

Box 6.6 Using health targets in Bulgaria

Health targets in Bulgaria are broad and general. However each of the specific programmes developed during the period 2001–2004 defines an additional set of targets that include both general (for the scope of the programme) and specific (some of them measurable) goals.

- National Programme for Prevention, Early Diagnosis and Treatment of Tuberculosis (2000–2003) – aspirational goals related to TB control, prophylaxis, diagnosis and treatment
- National Tuberculosis Control Programme (2004–2006) – adds some specific (quantitative) goals to the general ones (e.g. to reach 60% of the case should be bacteriological proven, and more than 80% of the cases should be successfully treated)
- National Tobacco Control Programme (2002–2005) – sets up general and specific goals (e.g. guarantee access to information related to tobacco consumption; create a negative perception to smoking in the population; reduce smoking by 15% among the population; reduce smoking among children by 20%)
- National Programme for Suicide Prevention (2002) – aims to maintain at the current level the suicide attempt rates and to reduce the death rates from suicide by 10–15% (which was 17.0 per 100 000 in 2000).

It is too early to say to what extent these targets are expected to be, or have been, achieved.

6.5 Employment and health policies

Governments and private enterprises (mainly in the EU-15) are becoming increasingly aware of the potential to improve productivity with a mentally and physically healthy workforce. With stress and mental illness as some of the most significant causes of absence from work (sick days), and reduced productivity (“presenteeism” – present but not working productively), employers are beginning to recognise the need to prevent stress and mental illness and promote good health.

For example, in **Austria** one of the priority areas of the Fund for a Healthy Austria for the years 2003–2005 is mental and emotional health. Health promotion initiatives in this priority area focus on helping people develop problem-solving skills and coping strategies for stressful situations (including work).

In Denmark, the National Centre for Health Promotion in Workplaces, directed by the City of Copenhagen and county council of Synderjylland, aims to increase awareness and building competence in the area of health promotion in workplaces. One of their initiatives is: “Healthy employees in healthy organization” – which aims to disseminate knowledge on how organizations can incorporate health promotion (including stress reduction) into their mandates. The Centre provides information on the causes of stress and mechanisms for stress prevention amongst employees. They inform employers about:

- signs and symptoms of stress,
- benefits achieved through stress reduction, e.g. fewer accidents, reduced absence, and increased productivity.

Although many countries have not yet developed specific programmes addressing healthy workplaces, stress reduction and work-life balance, other programmes such as finding ways to improve the employment opportunities are available for individuals with mental health problems, including back-to-work programmes.

In **Germany**, occupational health promotional interventions were initiated by social health insurance funds. Within the last fifteen years, a new type of worksite health promotion has been developed in Germany. “Health circles” led by professional moderators guide workplace interventions to reduce stress, increase transparency, improve communication and enhance mutual support. In 2001, two large German organizations, the Hans Böckler Foundation and the Bertelsmann Foundation decided to tackle this problem by establishing an ‘Expert Commission on Worksite Health Policy’. The commission recommends that employers and trade unionists jointly define ‘work and health’ as one of their central topics for action; that they join forces in raising awareness of this issue by introducing common data banks, offering professional qualifications and both technical and organizational help geared to the special needs of firms of differing sizes.

In **Spain**, although there is to date no programme related to stress reduction or addressing the work-life balance, the Ministry of Labour and Social Affairs produced a document entitled “Rehabilitation and social integration of individuals with several mental disorders” which outlines the necessity of treating severe mental health disorders through a community-based, integrated, continuous model. Among the main areas of action include integration into the labour market, psychosocial rehabilitation, and adequate housing policy.

In **Portugal** there have been very few interventions addressing mental health problems in the workplace, although there have been some campaigns to increase awareness of depression and stress in the general population – although these are far from being nation-wide (Oliveira 2003). Workplace health programmes typically have addressed hygiene and safety. In 1991, health and safety requirements on workplaces were identified by law together with the shift of more responsibility on employers for prevention, health promotion and vigilance in the workplace, but no reference to improving mental illness was

made. However, the extent to which this law was implemented varied across companies and the country (Graça 2000). The Institute for Safety, Hygiene and Health in the Working Place (established in 2004) is the main organization responsible for promoting health in the workplace, but to date their work has largely neglected mental health issues, focussing instead on the certification of companies that comply with standards in safety, hygiene and health conditions. They deal with executing and evaluating the policies within the scope of the National System of Prevention of Professional Risks.

In **Greece**, services termed “Psychosocial Programmes” are aimed towards mental health promotion and social and vocational enhancement of people with mental health problems. These programmes seek to empower the affected individuals and develop their professional skills, thus contributing to both their occupational rehabilitation and financial independence (Kontaksakis 2002). Some examples of specific skill-enhancement programmes provided by the Vocational Training Workshops include manual and agricultural training, athletic activities, and art. These initiatives are still in an embryonic stage due to lack of financial and technical support.

A similar programme can be seen in **Cyprus**. The Unit for Employment Relations provides support for people with mental health problems through various educational, advisory, rehabilitation, and other programmes aimed towards the goal of finding employment.

Sweden has a unique initiative of employers’ networks (“Arbetsgivarringar”), set by the National Board of Health and Welfare in 1992, whose primary objectives are: 1) supporting employees who are returning to the workplace after a period of illness or unemployment, and 2) illness prevention (Arbetslivsinstitutet 2004). There are now about 50 such networks across Sweden representing a range of public and private organizations. The most important task of the network programme is to achieve a better match between individual capabilities and job demands. Some networks offer seminars, courses and training programmes to improve competencies among employees. They collaborate with local occupational health services and local social insurance office.

There are several initiatives in **Malta** addressing mental health and employment. At national level the National Commission for Mental Health runs a mental health awareness campaign. The Occupational Health and Safety Authority (OHSA) was established in 2001 by the Occupational Health and Safety Act. The OHSA is responsible for ensuring that the physical, psychological and social well being of all workers in all workplaces is promoted and safeguarded. However it is the duty of the employer to ensure the health and safety at all times for all employees. Thus employers are required to take measures related to avoidance of risks, identification of hazards, risk evaluation, control and reduction within the overall context of a general prevention policy.

Moreover, within the public sector, an innovative rehabilitation scheme is organized in Mount Carmel Hospital (Malta) for people with mental health problems to have temporary employment in conjunction with skill development and therapy. There has also been considerable progress in addressing mental health and employment at the NGO level (see Box 6.8).

Box 6.7 Programmes in Malta supporting employment for people with mental illness

In Malta, the Richmond Foundation, an NGO, runs a Staff and Organizational Support Programme that aims to prevent mental illness as well as support organizations in providing a working environment that promotes mental health. More specifically, this programme aims to:

- Identify signs of sources of stress with the organisation,
- Provide training and promote best practices to prevent stress throughout the organisation and in the individual employees
- Maximise employee well-being
- Minimise employee incidence of mental health difficulties
- Provide constancy to help employers and employees work together to resolve potentially detrimental situations
- Provide counselling and support services to employees to enable them resolve problems and maintain their functioning at work to maximise their productivity and minimise unnecessary burnout and staff turnover.

Supported Employment Programme

The Supported Employment Programme, a project between Richmond Foundation and the Employment and Training Corporation, provides personalised training services to persons with mental health difficulties, with to the objective of helping them secure and sustain employment in the open market. It is made up of four levels: transition training, job exposure, job placement, and follow-up support services. Job seekers attend various sessions of group training before they start on the job training, depending on their needs. Group training includes sessions in: social skills, health and safety, anger management, sex education, presentation and grooming, job-hunting, work ethics; problem management, and stress management. This programme also helps to bring awareness about mental health issues and advocates for healthy working styles.

NGOs also play an important role in mental health promotion **Romania** and **Slovakia** although there has been no focus on the workplace to date. The Romanian League for Mental Health is an association of mental health professionals and NGOs dealing with mental health that actively promotes activities to influence the national mental health policy and raise awareness of mental health. There is an NGO in Slovakia called the League for Mental Health which runs regular public awareness campaigns about mental health risk factors in an attempt to destigmatize mental illness.

There are no programmes in **Turkey** on mental health promotion and mental illness prevention in the workplace. Although some large-scale corporations provide such services for their employees, particularly addressing stress reduction, the range of services provided are very limited. It is likely that this limitation is strongly related to the lack of a national mental health policy and related community care programmes in Turkey.

6.6 Screening for diseases in Europe

An area where there has been considerable development of national public health policies in the EU in screening. The concept of screening in health care – that is, actively seeking to identify a disease or pre-disease condition in individuals who are presumed and presume themselves to be healthy – is one that grew rapidly during the twentieth century and is now widely accepted in our society. Used wisely, it can be a powerful tool in the prevention of disease. But it is essential to observe the long-established principles and criteria and resist the introduction of screening practices that do not meet these requirements.

It is important also to distinguish between *population screening* (where people thought to be at risk are invited for screening, as in the national programmes for cancer of the breast and cervix) and *opportunistic screening for prevention* or *case-finding* (where individuals have sought medical advice for a specific symptom or complaint and opportunity is taken to suggest various other tests, such as the measurement of blood pressure or cholesterol, appropriate to their age and sex).

The basic criteria to be fulfilled before screening for any condition is introduced have been stated clearly over many years. They are fundamental to the integrity of the screening process, and are summarised in Table 6.1.

Table 6.1 Summary of criteria for screening

Category	Criteria
Condition	The condition sought should be an important health problem whose natural history, including development from latent to declared disease is adequately understood. The condition should have a recognisable latent or early symptomatic stage.
Diagnosis	There should be a suitable diagnostic test that is available, safe and acceptable to the population concerned. There should be an agreed policy, based on respectable test findings and national standards, as to whom to regard as patients, and the whole process should be a continuing one
Treatment	There should be an accepted and established treatment or intervention for individuals identified, as having the disease or pre-disease condition and facilities for treatment should be available.
Cost	The cost of case-finding (including diagnosis and treatment) should be economically balanced in relation to possible expenditure on medical care as a whole.

Evaluation must also be an integral part of any screening procedure. In 1971, Cochrane and Holland suggested seven criteria for evaluation and these remain as valid today as they were then (Table 6.2).

The benefits and disadvantages of screening have been fully described over the years. The benefits are straightforward. Early and accurate diagnosis and intervention will lead to an improved prognosis in some patients. At this stage treatment require may be less radical. Scarce health services resources will be saved by treating diseases before they progress and those with true negative test results can be reassured.

Table 6.2 Summary of criteria for evaluation of screening

Factor	Criteria
Simplicity	The test should be simple to perform, easy to interpret, and, where possible, capable of use by paramedical and other personnel.
Acceptability	Since participation in screening is voluntary, the test must be acceptable to those undergoing it.
Accuracy	The test must give a true measurement of the condition or symptom under investigation.
Cost	The expense of the test must be considered in relation to the benefits of early detection of the disease.
Repeatability	The test should give consistent results in repeated trials.
Sensitivity	The test should be capable of giving a positive finding when the individual being screened has the condition being sought
Specificity	The test should be capable of giving a negative finding when the individual being screened does not have the condition being sought.

The disadvantages are more complicated. There will be longer periods of morbidity for patients whose prognosis is unchanged and there may be overtreatment of non-serious conditions or abnormalities identified. There are also resource costs in finding more illness both in terms of the tests themselves, the personnel costs and the subsequent management of whatever is found. There is the unpalatable certainty that some individuals with false-negative results will be given unfounded reassurance and that some with false-positive results will experience at the very least unnecessary anxiety and at the worst inappropriate treatment. Finally there is the possibility, however remote, of hazard from the screening test itself.

Key points:

- Antenatal screening programmes for Down's syndrome and spina bifida are performed in a few countries, being mainly optional. They are often only recommended only to women at high risk.
- Neonatal screening for phenylketonuria is systematically recommended in all EU-15 countries but Finland (where it is done only if both parents are from western Europe, not European).
- Breast cancer screening and cervical cancer screening programmes are recommended in some European countries.
- HIV screening is more common among the new Member States and the three Candidate Countries and it covers only specific vulnerable groups such as pregnant women and blood donors
- TB screening is performed in a few European countries, especially Central and eastern European countries such as Hungary, Romania and Turkey.
- Not all the countries follow basic criteria for screening. A population register to allow recall and follow up of patients is often missing. Moreover, a single national body for reviewing tests and practice is present only in a few countries.

Europe provides a variety of different approaches to health service provision and financing, including screening. National screening programmes in 28 European countries¹⁸ on:

- antenatal screening for Down's syndrome and spina bifida
- neonatal screening: phenylketonuria (PKU)
- breast cancer
- cervical cancer
- colon-rectal cancer

will be briefly described. HIV screening is performed in several European countries in particular among the new Member States and the three Candidate Countries. Best practice in TB screening will also be reported.

Few countries have a single national body to review screening practice and policy, and population registers for recall and follow-up of patients are also comparatively rare. Screening tends to be targeted at individuals rather than populations and not all countries adhere to the criteria summarised in Table 6.1. In many countries health service provision is devolved to local or regional government and screening practice in different areas can vary widely as a result.

¹⁸ Information is based on country-experts reports.

Antenatal screening: Down's syndrome and Spina bifida

In the **UK**, there currently seems to be agreement that antenatal screening for anaemia, bacteriuria, rhesus incompatibility, structural anomalies, such as spina bifida and cardiac abnormalities, Down's syndrome, Hepatitis B, HIV, rubella immunity and syphilis should be offered to all women attending clinics in the United Kingdom. Serological screening early in pregnancy together with an ultrasound scan between 18 and 20 weeks would seem to be the method of choice in most of these conditions with subsequent diagnostic testing as appropriate. It cannot be stressed too often that such screening should only be offered where adequate counselling and follow-up services are available.

From September 2004, pregnant women in **Denmark** have had the option of undergoing an examination to indicate risk of Down's syndrome and to have a test for spina bifida.

In **Finland**, participation in the screening of Down's syndrome and spina bifida are voluntary. Almost all municipalities offer ultrasonic scanning for pregnancy in weeks 13–14 and 16–19. Amniocentesis and serum screening is provided for women between 35 and 40 years of age (the age limit depends on the municipality – for example, in Helsinki the age limit is 40 years).

Down's syndrome is systematically screened for in prenatal examinations in **France**. A blood test is offered to every pregnant woman. Amniocentesis is systematically offered to women considered to be at risk: mothers aged 38 years or over, abnormal blood test results, defects detected in previous pregnancies, chromosomal anomalies in parents. Spina bifida is detected by ultrasound in the 17th week of pregnancy.

In **Greece**, pregnant women aged 35 years and over are offered amniocentesis.

In Italy, guidelines are very vague but a test for Down's syndrome is recommended to all women at risk and for those aged over 35 years. The take-up of antenatal screening varies across regions.

Tests for Down's syndrome and spina bifida (triple-tests) are recommended for all **Dutch** women aged over 35 years at three months of pregnancy.

In **Spain**, antenatal screening is performed either in primary care or in hospital. The guidelines for monitoring a normal pregnancy include: triple screening for Down's syndrome and spina bifida, virus serology for hepatitis B, Rh incompatibility, virus serology for rubella, and serology for *Toxoplasma gondi*. Amniocentesis is highly recommended for women over the age of 35 years.

All pregnant women are offered one ultrasound scan in the second trimester (gestational week 15–20) in Sweden and 97% of women comply. Women aged 35 years or older are given more detailed information by a physician and are offered amniocentesis routinely.

A selective national antenatal screening programme is in place in **Bulgaria**. Amniocentesis is offered free of charge to all pregnant women over 35 years of age, to women who already have a child suffering any congenital malformation, and to those referred by a genealogist.

Testing for spina bifida and Down's syndrome is part of basic screening during the prenatal period in the **Czech Republic** and **Estonia**. Genetic testing is part of routine prenatal care for pregnant women over 37 years of age and where indicated among younger pregnant women. Two ultrasounds are also part of the routine management of all pregnancies.

In **Hungary**, ultrasound examination for Down's syndrome is carried out in week 12 of pregnancy.

Tests for Down's syndrome are provided for pregnant women considered at high risk (in weeks 11 and 17 of pregnancy) in **Latvia**. High risk groups include women over 35 years of age; father over 45 years of age; one or both parents previously affected by radiation; an acute viral infection during the first trimester of pregnancy.

In **Lithuania**, screening for Down's syndrome is performed only in those considered at risk or if specifically requested. All pregnant women aged 35 and over, those who have previously had babies with congenital abnormalities, and those who request it are sent to the Human Genetics Centre for a triple-test which is performed during weeks 14–15 of pregnancy. Routine ultrasound examination is performed during weeks 18–20 and 30–32 of pregnancy.

Neonatal screening: phenylketonuria

The UK Newborn Screening Programme Centre recommends routine bloodspot screening for phenylketonuria, congenital hypothyroidism (and galactosaemia in Scotland) and cystic fibrosis with screening for thalassaemia and sickle cell disease currently being introduced for all newborn babies. The UK Newborn Screening Programme Centre was established in 2002 with a remit to monitor and improve the quality of newborn bloodspot screening procedures and their outcomes for parents and their babies.

Neonatal examination is routine for newborns in France. This includes blood testing for phenylketonuria, congenital hypothyroidism (CH), adrenal hyperplasia, haemoglobinopathies / sickle cell anaemia, and cystic fibrosis (CF).

Screening for phenylketonuria is recommended in all EU-15 countries except Finland where screening of the native Finnish population is not considered necessary. Screening is done, however, if both parents are of Western European, American, or Jewish, Kurdish or Yugoslavian origin. In the new Member States and the three Candidate Countries, screening for phenylketonuria is recommended in Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia and Slovenia.

Breast cancer

Breast cancer is now the largest cause of death in women aged under 65 years and kills around 15 000 women a year in the **UK**. The current position is that women aged between 50 and 70 years on population registers are invited for screening by mammography every three years through the National Breast Cancer Screening Programme. Women over the age of 70 can be screened on request.

Based on the directives developed by Europe Against Cancer, the Belgian Communities and the Federal Government signed, in October 2000, a protocol to organise and finance a national campaign of breast cancer screening for women between 50 and 69 years old. The responsibility for the coordination of the campaign rests with 11 recognised screening centres. There are five centres in Wallonia (one per province), five in Flanders (in the four Flemish universities and in Bruges) and one in Brussels. The screening centres are responsible for making information available to the target group, sending out the invitations, re-testing where necessary, recording of data and reporting to the referring doctor. In Flanders the campaign started on 15 June 2001 and in Wallonia and Brussels a year later.

Screening programmes for breast cancer are established in two of the 14 **Danish** county councils (Funen and H:S) for women aged 50–69 years. These two screening programmes cover 20% of the target Danish population.

In **Finland**, under the terms of the Public Health Act, women between the ages of 50 and 59 years are invited every two years for breast screening.

In **France**, screening for breast cancer, previously limited to some départements (32 at the end of 2002), has been extended since January 2004. Every woman between 50 and 74 years (except for those in Guyana) is invited for a free breast screening every two years. A strategic objective of the Public Health Act (August, 2004) is to 'reduce the percentage of late-stage breast cancer detected in women, notably by increasing screening coverage rate up to 80% in women aged between 50 and 74 years.' This Act called for specific programmes to target isolated, disabled or deprived women who might be reluctant to participate. This has been partly achieved by the production of videos or tapes for people suffering from visual or hearing deficiencies and the translation of brochures for immigrants. Several campaigns at national and local levels are going to be launched. Patients and women's associations are involved in this information effort.

Phase 1 of BreastCheck – **Ireland's** national breast screening programme – started in February 2000 and already offers screening in several areas, with coverage expected to be nationwide towards the end of 2007. Breast screening outside the BreastCheck programme is available to all women if they are referred by a GP.

In **Italy**, screening policies for breast cancer have been inserted in the basket of essential levels of care provided by the NHS. All National Health Plans have set targets for these

areas of prevention. However, registers are managed at regional level; and screening programmes are more widespread in Northern and Central Italy. There is usually a system for targeting and recalling patients, but target population varies according to regional health plans.

In the Netherlands, there is a national programme for breast cancer that is based on a defined population groups (women aged between 50 and 75 years). Their addresses are taken from the population registers of municipalities; and no co-payment is required (universal social health insurance scheme).

Since 1990 Breast Cancer Detection Programmes have been implemented in all Spanish Autonomous Communities. The programmes' target population varies across regions but in most it includes women aged 50–65 years.

Swedish National Guidelines from the National Board of Health and Welfare recommend mammography screening for early detection of breast cancer for age groups 40–74 years. Examination intervals are 18 months for women under 55 years, and 24 months for women over 55.

Among the new Member States, a pilot programme for breast cancer screening has started in Cyprus and covers women aged 50–69 years.

In Estonia, there is a screening programme for breast cancer, financed and administered by the Estonian Health Insurance Fund. The target population is women aged 45–59 years, and the screening interval is three years.

Mammography screening was introduced in 2002 in Hungary for women aged 45–65 years and screening is repeated bi-annually with a good participation rate.

Screening for cancer is included in the prophylactic programme for adults in Latvia and covered through the health care budget. For breast cancer, women aged 50 to 69 years are recommended to undergo one mammography every two years.

In Slovakia, breast cancer screening is provided by the state and paid for by health insurance companies. The target population is women aged 40–60 years and the method is periodical mammography.

Cervical cancer

In the UK, during the early 1960s, individual district health authorities began to introduce screening for cervical cancer using the Papanicolaou (Pap) smear test. In 1967 the NHS announced a national programme to screen all women over 35 at five-year intervals. The programme has, therefore, been running for almost 40 years. The programme was re-launched in 1998 and much attention has been paid since then to improving the system. Current policy in the United Kingdom is to offer screening to women aged 25 – 64 years in England and Wales and 21–60 years in Scotland at the following intervals:

- age 25: first screening invitation
- age 25–49: three yearly screening invitations
- age 50–64: five yearly screening invitations
- age + 65: only those not screened since age 50 or those with recent abnormal results invited

A screening program is present (only since recently) in all 14 Danish county councils. Women in the age group 23–59 are invited, except in one of the county councils, the county council of Copenhagen, where only women aged 25–45 are invited.

Screening for cervical cancer has recently been made available in all 14 Danish county councils. Women in the age group 23–59 years are invited to participate, except in Copenhagen, where coverage is limited to women aged 25–45 years.

A programme of cervical cancer screening has been running since 1994 in Belgium when the Flemish Government decided to reorient the organisation of secondary prevention of cervical cancer according to the European guidelines. The programme targets women aged between 25 and 64 years, who are invited for a Pap smear every three years. The programme is administered and evaluated by the Scientific Institute of Public Health in collaboration with the Communities. Despite the scientific support, no formal screening programme is organised in the French Community.

In Finland, the Public Health Act states that women aged 30–60 years old should be invited for screening for cervical cancer every five years.

In France, cervical cancer screening is offered to women aged 25–69 years every three years. A recent study estimated that 35% of women in the target age group have never or only rarely been screened. Targeted messages will be used to reach these women and coverage could be increased by the participation of GPs (96% of Pap tests are currently carried out by gynaecologists). The 48th objective of the Public Health Act of August 2004 is 'to continue the annual 2.5% decrease of cervical cancer incidence, notably by increasing screening coverage rate to 80% for women aged 25–69 and HPV test utilisation'.

National screening programmes for cervical cancer are available also in Germany (for the SHI insured) and the Netherlands. In Italy, screening programmes for cervical cancer are similar to those for breast cancer. Registers are managed at regional level and screening policies are more widespread in Northern and Central Italy.

In Ireland, Phase 1 of a National Cervical Screening Programme, which offers free cervical screening to women aged 25–60 years in the Mid-Western Health Board (MWHB) area has recently started.

In Spain, cervical cancer screening through cytology is offered to all women aged 35 years and over but there are regional differences. In Catalonia, for example, there is a personalised register of all target individuals (women aged 20–64 years). Cervical cancer

screening (Papanicolau technique) is recommended every three to five years. In the Balearic Islands, screening for cervical cancer prevention is opportunistic rather than population-based.

Organised cervical cancer screening has been implemented in Sweden since the mid-1960s. Guidelines for recommended screening are: every third year, for women aged 23–50 years and every fifth year for women aged 51–60.

A national strategy for prophylactic cancer screening (2001–2006) was approved in Bulgaria in 2000. Given the scarce resources available for this strategy, however, it only recommends preventive examinations for cervical cancer as part of regular gynaecological examinations.

In **Cyprus**, there is a national policy on screening for cervical cancer based on the population register and covering all women aged 25–65 years.

In **Hungary**, the gynaecological cervical screening programme was launched in 2004. It is based on Papanicolau cytological testing of all women aged 25–65 years every three years.

In **Latvia**, women aged 20 to 35 years are recommended to do an oncological test per year, and if there is no positive result, the test is repeated in 3 years. For women aged 35 to 70 years, the oncological test is done annually.

Since July 2004, the **Lithuania's** Cervical Cancer Prevention Program was financed from the Compulsory Health Insurance Fund. The program targets women's population aged 30–60 years and the screening for cervical cancer is performed once every three years.

In **Slovenia**, there is a national policy on screening for cervical cancer, that includes all women between the ages of 25 and 64 who are actively followed-up through a centrally-run surveillance system identifying the frequencies of cervical smears that have to be performed every three years (after the first two, taken in the span of 6 months have both proven negative).

Colon-rectal cancer

In the **UK**, the National Screening Committee began a pilot-screening programme in 2000 and the results indicated that early detection by screening could reduce mortality from the disease. A working group has been set up to plan the introduction of colorectal cancer screening and a planning group is currently identifying resources needed for a national programme. Option appraisal of different screening policies has been commissioned from Sheffield University.

A trial for colon-rectal cancer has started in two of the county councils in **Denmark**: people aged 50–74 are invited to participate.

A trial for colorectal cancer has started in two of the county councils in Denmark where men and women aged 50–74 years are invited to participate. A pilot project for colorectal

cancer screening for 60–69 year old men and women was introduced in 2004 in several Finnish municipalities.

Colorectal cancer screening is the 53rd objective of the 2004 Public Health Act and is currently the subject of trials in 22 **French** départements. People aged 50 to 74 years are invited for a fecal occult blood test (FOBT) every two years. If the result is positive, a colonoscopy is carried out. The programme will be assessed shortly to define the national strategy for 2007. Initial results showed an increasing rate of participation (up to 50% in some départements) because of active participation by GPs.

HIV screening

In the **UK**, HIV screening is offered to all women in the early stages of pregnancy with clear referral paths for positive cases and is compulsory for blood and organ donors.

Elsewhere in the EU, HIV screening tends to be targeted at vulnerable social groups. It is more common among the New Member States and Candidate Countries.

In the **Czech Republic**, for example, HIV screening is compulsory for donors of blood, organs or any biological material and for pregnant women. In Estonia, it is compulsory during pregnancy, when entering the military service and for prisoners. In Latvia, the target population includes pregnant women, individuals to be recruited for military service, those involved in the national armed forces and international peace maintenance, and prisoners. In Slovenia, HIV screening is performed on pregnant women, patients with a newly established diagnosis of syphilis and in all donors of blood or organs. In Turkey, it is compulsory for blood donors, registered sex workers (once every three months), illegal migrant sex workers, men recruited for military service, any patient undergoing a blood test at a public health unit, pregnant women, patients before undergoing surgery, and couples intending to marry.

HIV screening programmes are also offered to all pregnant women in **Finland** and **France** although it is not compulsory. Screening is compulsory, however, for donors of blood, organs, sperm or milk.

TB screening

Screening for tuberculosis (TB) is not at the moment recommended as a national programme in the United Kingdom although it was originally the earliest screening programme introduced with successful results.

It is performed in several European countries and particularly in the new Member states and Candidate Countries. In **Hungary**, for example, TB screening is based on a defined population register with a system for targeting and recalling individuals (aged 18 years and over, on an annual basis). In 2003, 134 fixed and 48 mobile pulmonary screening stations were operating, and 3 717 518 screening examinations were carried out (43% of the adult population was screened).

A massive TB screening programme is in place also in Romania. Thousands of people are screened by X-ray examination: soldiers, recruits, and teachers in schools (every year), children entering kindergarten and their parents, couples before marriage, prisoners. All individuals who work in the food industry or those who are handling food also require an annual X-ray examination.

There is a national policy for screening, monitoring and treating TB in **Turkey**. This is based on a defined population, which includes primary school children (between 7 and 11 years of age), registered sex workers (once a year), and men conducting their compulsory military service (20–41). TB screening is also a procedural requirement for all job applications associated with joining any of the existing insurance schemes.

Conclusions

On the basis of this brief account, screening programmes and practices do vary very widely across the countries of the European Union and will continue to do so for many years to come. This is inevitable given the differing structures and financing of health services and differing demographic features of the population. There are, however, key objectives to strive for. These include having one national body per country responsible for practice and policy, scrupulous adherence to the long established screening criteria, accurate population registers, greater uniformity of access across different areas of a given country and across different socioeconomic groups and sound research evidence on which to base practice.

The wide variation in practice in Europe illustrates the complexity of screening. Some lessons, however, stand out:

- The need for greater consideration to be paid to the effectiveness of screening
- More attention to be given to evaluating the processes of screening
- Above all, an imperative to involve participating individuals in decisions on screening and to give them clear and understandable information about what it involves

Arguably, the most significant development in the screening field in the UK in the last 15 years has been the establishment in 1996 of the National Screening Committee (NSC) and this could be used as a model for the organisation of screening in other countries. The NSC now has overall responsibility for screening policy and for identifying screening procedures that should be provided by the UK health service. It has accepted the long established criteria for the assessment of appropriate tests and has been effective in commissioning good quality research where required and in maintaining continuing surveillance and review of existing programmes.

Accurate population registers are essential to facilitate adequate call/recall systems – crucial for the effectiveness of any screening procedure. Screening must also adapt to the

particular needs of differing local populations and must be rigorous in checking on the quality of screening services and their evaluation, including medical audit. And there should be a coordinated and measured approach to screening with gradual roll-out of programmes to ensure effective implementation and to avoid overloading health services.

Although there is increasing concern with the strength of evidence before a particular screening test is introduced and more emphasis on possible adverse effects, the dilemma of whether a specific test should be provided, even if it has not met the criteria, has not been satisfactorily solved. This can be illustrated by the demand for PSA testing in the UK where the Prostate Cancer Risk Management Programme has been introduced in primary care to provide advice and testing for those who request it rather than provide a national screening programme for which there is currently insufficient evidence of benefit.

Screening today faces a number of challenges in the EU as elsewhere.

The first of these is the growth of private screening and full-body checks and the increased demand from the public in the mistaken hope that screening will ensure future good health. This trend is currently more apparent in the United States and the United Kingdom than in Europe as a whole but is likely to spread. A recent survey of screening in the consumer magazine *Which* asked two screening experts to provide a verdict on the information and tests provided by five private full-body screening services.¹³ They concluded that information provided about the likely benefits, harms and limitations of the tests was in most cases inadequate or even misleading and expressed major misgivings about the value of paying for full-body scans. It was of interest, however, that the two lay people interviewed for the survey were enthusiastic about screening, highlighting the gap between professional and public perceptions.

Screening provided by national health services may not be perfect but it has been introduced on the basis of sound scientific evidence, is subject to ongoing scrutiny and provides continuity of care and follow-up. This is not necessarily the case in the private sector.

Secondly, we must continue to work on the information provided about the various programmes and tests to make it understandable and honest and to train or re-train those providing it in how to communicate clearly and without bias. It is essential that those invited to participate in screening are enabled to make an informed choice, fully aware of all the implications. This will not be easy, particularly, for example, in long established programmes such as cervical cancer screening where it is still in some places perceived that women should agree to screening when invited.

It must also be acknowledged that some of the tests involved are extremely unpleasant. Faecal occult blood testing for colorectal cancer is relatively simple and non-invasive; colonoscopy, the next step after a positive result, most certainly is not.

Thirdly, there is still great variability in take-up of screening between different geographical areas and different socioeconomic groups. It is worrying that the more

affluent members of the population who are generally at lower risk are more likely to accept invitations for screening while those in the more deprived sectors at higher risk do not. Strategies for improving equity of access must be devised and implemented.

Finally, there is a major task to educate and inform the media and the public as to what screening can and cannot do. Screening is not and can never be a universal remedy but, used selectively and on the basis of sound research evidence, it can continue to be a good use of resources. Provided it remains open to constant review and critical evaluation and is capable of change in the light of new evidence, screening will remain a powerful tool in the fight against disease and its impact for the foreseeable future.

References

- Adaman, F. (2003). *Social Protection in the Candidate Countries: Turkey*. Berlin, GVG.
- Arbetslivsinstitutet (2004). *Employers' networks support return to work*. 2005.
- Burström, B., Diderichsen, F., Östlin, P., and Östergren, P. (2002). Sweden. In J. Mackenbach and M. Bakker (eds). *Reducing Inequalities in Health: a European perspective*. Routledge: London.
- Calltorp, J. (1999). Public health and priority setting in Sweden. In W. Holland and E. Mossialos (eds.) *Public Health Policies in the European Union*. Ashgate Publishing Ltd.: England.
- Chamberlain Jocelyn M. (1984). Which prescriptive screening programmes are worthwhile? *J Epidemiol Community Health*, 38:270–277.
- Cochrane AL, Holland WW. (1971). Validation of screening procedures. *Br Med Bull*, 27(1):3–8.
- Couffinhal, A., Dourgnon, P., Geoffard, P-Y., Grignon, M., Jusot, F., Lavis, J., Naudin, F., Polton, D. (2005). Policies for reducing inequalities in health, what role can the healthcare system play? A European perspective. Part II. Experience from Europe. *News bulletin in economy of health*, no. 93. Paris: IRDES.
- Graça, L. (2000). *Serviços de Saúde e Segurança no Trabalho em Portugal e na UE: Problemas e Perspectivas*. Lisboa, Escola Nacional de Saúde Pública, Universidade Nova de Lisboa.
- Hakama M. (1986). Screening for cancer. *Scand J Soc Med; Supplement*, 37:17–25.
- Health Departments of the United Kingdom (1998). *First Report of the UK National Screening Committee*, April.
- Health Departments of the United Kingdom (2000). *Second Report of the National Screening Committee*, October.
- Judge, K., Platt, S., Costongs, C., and Jurczak K. (2005). Health inequalities: a challenge for Europe. Report prepared for the UK Presidency of the EU.
- Kontaksakis, V. (2002). Vita. Medical Edition. G. N. Christodoulou, Tomaras, V.D, Oikonomou, M.P. Athens: 4–5.
- Machenbach, J.P., Bakker, M.J. (2003). Tackling socio-economic inequalities in health: analysis of European experiences. *Lancet*, 362: 1409–1414.
- McKeown T. (Ed) *Screening in Medical Care: Reviewing the Evidence*. Oxford: Oxford University Press for the Nuffield Provincial Hospitals Trust, 1968.
- Merkel, B., and Hubel, M. (1999). Public health policy in the European Community. In W. Holland and Mossialos, E. (Eds.) *Public Health Policies in the European Union*. Ashgate Publishing Ltd.: Aldershot.
- Ministry of Health (2003). *Transformation in Health*. Turkey, Ministry of Health.Oliveira, M. (2003). *Mental Health and Employment: Portugal*. Second report prepared for the European Mental Health Economics Network.
- Östlin, P., & Diderichsen, F. (2001). Equity-oriented national strategy for public health in Sweden. A case study. Policy Learning Curve Series Number 1. WHO: Europe. <http://www.who.dk/Document/E69911.pdf>
- Robert Koch Institut. (2001) *The German Health Reporting System and Current Approaches in Europe: A Comparative View on Differences, Parallels and Trends*. Proceedings of the International Conference: Berlin.

- Skrabanek P. (2004). *The Death of Humane Medicine*. London: Social Affairs Unit, 1994. Health Screening. *Which Magazine*, 12 August.
- Thorner RM, Remein QR (1961). *Principles and procedures in the evaluation of screening for disease*. PHS publication no 846. Public Health Monograph no 67. Washington: Public Health Service.
- US Commission on Chronic Illness (1957). Chronic illness in the US. Vol.I. *Prevention of Chronic Illness*. Cambridge, Mass: Harvard University Press.
- Weihrauch, B. (2002). North Rhine–Westphalia. In M. Marinker (Ed.) *Health targets in Europe: Polity, Progress and Promise*. BMJ Books: London.
- Wismar, M. (2001). Health targets from an international perspective. The German Health Reporting System and Current Approaches in Europe, Proceedings of the International Conference. Berlin: Robert Koch Institute.
- Wykes WN. (2004) Personal communication.
- Van Herten, L.M., and Gunning–Schepers, L.J. (2000). Targets as a tool in health policy Part 1: Lessons learned. *Health Policy*, 53: 1–11.
- Wilson JMG, Jungner G. (1968) *Principles and Practice of Screening for Disease*. Geneva: World Health Organisation.
- www.nsc.nhs.uk/
- Ziese, T. (2001). National Health Reporting in Germany. The German Health Reporting System and Current Approaches in Europe: A Comparative View on Differences, Parallels and Trends. Proceedings of the International Conference: Berlin.

6.7 Table: Organization of public health (EU-15)

	National level	Local level	Supporting agencies
AT	<p>The Federal Ministry for Health and Women (BMGF), The National Health Council, and the Fund for a Healthy Austria (FGÖ) are the three main agencies responsible for public health.</p> <p>In 2003 the responsibility for federal health care administration switched from the Federal Ministry for Social Security and Generations (BMSG) to the Federal Ministry for Health and Women (BMGF).</p>	<p>The provinces and districts and the social security institutions as self-administrated public corporations also hold important responsibilities</p>	<p>National Health Council – counselling and advisory body to the ministry</p>
BE	<p>For the Flemish Community the Health Care Administration of the Department of Welfare, Public Health and Culture of the Ministry of the Flemish Community is responsible for the development, implementation and evaluation of public health policies.</p> <p>For the French Community, public health policies are administered by the General Department of Health within the Ministry of Culture and Social Affairs.</p>	<p>The regional governments are supported in their health policy by the Scientific Institute for Public Health, which is a federal institution, providing the government with data related to population health.</p>	<p>Flemish: Preventive and Social Health Care Division within the Health Care Administration – health promotion and prevention. Child and Family The Centres for Student Accompaniment.</p> <p>French: Office for Childbirth and Infancy; Agency for the Prevention of AIDS.</p> <p>Federal Public Service Public Health, Food Chain Safety and Environment (formerly Ministry of Public Health and Environment) – elaborates statutory framework of health care institutions, regulates health care professions, and health aspects of the food and drug policy.</p>
FR	<p>According to Public Health Act of August 9 2004, the State is responsible for</p>	<p>A new regional institution was created to help develop regional health plans in line</p>	<p>The National Surveillance Agency is responsible for tracking and projecting</p>

	National level	Local level	Supporting agencies
	defining public health policies.	with national objectives.	disease. The National Institute for Health and Medical Research undertakes public health research. The High Committee of Public Health and National Institute for Prevention and Health Education contribute to defining goals policies.
DE	There is a small, but growing role of the Federal Ministry of Health, assisted by supporting agencies specialising in communicable disease, health education and environmental health	The federal states (Länder) are mainly responsible for public health services. Since 2000, social insurance funds cover some prevention services	Federal Institute for Pharmaceuticals and Medical Products. The Institute for Communicable and Non-communicable Diseases (the Robert Koch Institute). The Federal Centre for Health Education. The German Institute for Medical Documentation and Information · Advisory Council for Concerted Action in Health Care.
IT	3 Departments of the Ministry of Health – prevention and communication; quality; and innovation	Regional Health Agencies in 12 regions. Each Local Health authorities has a Department of Public Health – plans prevention services and access to primary care. Prevention policies are implemented at local regional level.	Health Governing Council and Institute – research and technical advice Institute for prevention and safety of working environment Agency for Regional Health Care Services – supports regional activities Experimental Zooprophylaxis Institutes National Centre for Disease Prevention and Control (since 2004) National Committee for Food Safety Italian Institute of Social Medicine

	National level	Local level	Supporting agencies
EL	<p>Ministry of Health and Social Solidarity – comprised of Health Administration; Public Health Administration (with 8 sub-departments); Welfare Administration; and Regional Support Administration and Technical Infrastructure.</p> <p>National Public Health Council – evaluates public health risks, develops national strategies.</p>	<p>District Public Health Council – coordinates public health activities in the district</p> <p>District Health and Welfare Administration – protects and promotes public health under direction of the Ministry of Health</p> <p>Local Self-Administration Organizations – Municipalities and Communities secure health dietary conditions, water supply, sewage, implement prevention programmes</p>	<p>National School of Public Health</p> <p>National Center for Health Research.</p> <p>National Research Foundation.</p> <p>National Center for Diabetes.</p> <p>National Center of Natural Sciences Democritos.</p> <p>National Organization for Medicines</p> <p>Hellenic Food Authority</p> <p>Thorasic Institute,</p> <p>Occupational Health and Safety</p> <p>Hellenic Pasteur Institute</p> <p>Child Health Institute</p> <p>Hellenic Center for Infectious Disease Control</p> <p>Organization Against Drugs</p> <p>General National Chemical Laboratory.</p> <p>Hellenic Atomic Energy Commission.</p>
PT	<p>Ministry of Health defines national policies.</p> <p>General Directorate of Health – within the Ministry of Health, defines public health related policies and strategic objectives</p> <p>National Health Institute – clinical and epidemiological research and surveillance, includes the National Observatory of Health</p>	<p>The Regional Centres of Public Health and Regional Health Authorities – plan, allocate funds, assess health care facilities’ performance.</p> <p>Public Health Units of the Local Health Systems and the Operational Units of Public Health of the Primary Care Centres (only beginning to be operational).</p>	<p>Institute for Quality in Health</p> <p>The Health Regulatory Agency (created in 2003) – to ensure equity in access to high quality health services</p>
ES	<p>Ministry of Health and Consumer Affairs – defines minimum standards and requirements for health care provision; ensures communication between national health authorities</p>	<p>Regional health authorities (Autonomous Communities) – almost fully responsible for public health.</p>	

	National level	Local level	Supporting agencies
	and autonomous communities, through the Interterritorial Council of the National Health System		
IE	<p>Department of Health and Children – responsible for health and personal social services</p> <p>Institute of Public Health – promotes co-operation in public health across all of the island of Ireland</p>	Regional health boards have public health departments with directors of public health and planning, responsible for local environment and disease control, health promotion, immunizations, and implementing national health strategies.	<p>Centre for Control of Infectious Diseases</p> <p>Irish Blood Transfusion Service</p> <p>National Breast Cancer Screening Board</p> <p>Health Research Board</p> <p>Health Information and Quality Authority</p>
NL	<p>Ministry of Health and Ministry of Interior and Kingdom Relations – public health policy-making, policy coordination, financing specific programmes</p>	Regional Public Health Institutes – general preventive programmes, health promotion, (including mental health), infectious disease control, public security and crisis management, health services for asylum seekers, other programmes for specific groups (e.g. HIV, prostitutes)	<p>National Institute for Public Health and the Environment – conducts research on public health and health care, collects health data</p> <p>National Institute for Health Promotion and Disease Prevention</p> <p>The College for Health Insurances – administrates/finances screening and vaccination programmes</p>
UK	Department of Health	<p>The nine government office regions each have a Regional Director of Public Health and staff including both medical and non-medical public health practitioners.</p> <p>28 Strategic Health Authorities each with a Director of Public Health</p> <p>Primary Care Trusts (about 300) – have local responsibility for health protection</p>	<p>Public Health Observatory – monitors health and disease trends, carries out and evaluates public health programmes</p> <p>Health Development Agency – works to improve health and reduce health inequalities, collects an evidence base</p> <p>Health Protection Agency – advises government on public health protection policies and programmes</p>
DK	Ministry of the Interior and Health – legislation, develops guidelines, surveillance and prevention, coordinates	<p>14 county councils – hospitals, public health insurance, prevention</p> <p>275 municipalities – home</p>	National Board of Health – consultation for Ministry, health surveillance, guides local authorities

	National level	Local level	Supporting agencies
	comprehensive programme on health promotion	nursing, child dentist services, prevention	The State Serum Institute – prevents and controls infectious disease, research National Food Agency The Patients’ Complaints Board Danish Council of Ethics Council on Health Promotion Policy Council on Smoking and Health
FI	Ministry of Social Affairs and Health – initiates legislation and monitors its implementation	Municipal health committees set priorities and provide public health services. health centres that provide curative, preventive and public health services at a primary level	The National Public Health Institute – surveillance and health promotion The Finnish Centre for Health Promotion strengthens cooperation between NGOs and other actors The Inter–sectoral National Public Health Committee evaluates programmes, informs target setting
SE	Ministry of Health and Social Services – regulates and sets policy frameworks and national policies National Board of Health and Welfare – central advisory and supervisory agency in health protection and health services; evaluates services	20 county councils and 1 local authority (each with a department of public health) provide health services, and seek to improve public health. 290 municipalities responsible for local implementation of public health policies.	The National Institute for Public Health – health promotion, disease prevention, and reducing inequalities Swedish Council of Technology Assessment in Health Care

6.8 Table: Organization of public health (new Member States and Candidate Countries)

	National level	Local level	Supporting agencies
CY	Council of Ministers – overall responsibility for the health system Specifically the Ministry of Health and Ministry of Labour and Social Insurance		
CZ	Ministry of Health – Deputy Minister of Health Department of Protection and Promotion of Public Health – lead by Chief Public Health Officer Council for Health and Environment – advises government		National Institute of Public Health – science and research, prepares legislation, epidemiological surveillance, health promotion
EE	Ministry of Social Affairs (MSA) – responsible for planning, regulation and finance public health activities Health Division, headed by Deputy Secretary for Health – has Health Care department and Public Health Department	Health Protection Inspectorate and its regional offices– monitoring, counselling and implementation of public health requirements (e.g. water control), registering incidence of infectious diseases	National Institute for Health Development – public health research, developing and implementing national public health programmes (e.g. HIV/AIDS prevention programme, prevention programme of cardio-vascular diseases)
HU	Department of Health Office of the Governmental Commissioner for Public Health (established in 2005) – emphasizes the multi-sectoral approach to public health	Health promotion units of the county institutes of NPHMOS health and social welfare units of local governments	National Public Health and Medical Officers’ Service (NPHMOS) National Institute for Health Promotion – operates as a national institute of the NPHMOS
LV	Ministry of Health – implements the Public Health Strategy	Municipalities – according to the Law “On Local Governments” they have to	Public Health Agency assists with hygienic and epidemiological safety policy,

	National level	Local level	Supporting agencies
	<p>The Department of Public Health – implementation of the provisions of legal acts in the health care sector.</p> <p>The Department of Pharmacy implements pharmaceutical policy</p>	<p>‘ensure access to health care’ by protecting against out-of-pocket payments for low-income persons providing reimbursement of health care expenses and cover transportation costs, and they ensure the maintenance of health care facilities</p>	<p>monitoring infectious and non-infectious diseases, monitoring implementation of the Public Health Strategy</p> <p>Health Statistics and Medical Technology Agency - assessment of health technologies, healthcare facilities, maintains health registries, collects and analyzes health statistics</p> <p>Health Promotion State Agency – health promotion programmes at central and regional level</p>
LT	<p>Ministry of Health (Department of Public Health) and State Public Health Service</p>	<p>At the regional level also under the State Public Health Service there are ten (according to country administrative division into 10 counties) Regional Public Health centers with their local branches (at local level).</p>	<p>State Public Health Service</p> <p>Has 8 national specialized public health centers: Lithuanian AIDS Center, State Mental Health Center, Lithuanian Health Information Center, Center for Communicable Diseases Prevention and Control, State Nutrition Center, National Centre for Health Promotion and Health Education, National Public Health Research Center, State Environmental Health Center.</p>
MT	<p>The Ministry of Health, the Elderly and Community Care is responsible for the financing and provision of health care for the whole population as well as for all matters pertaining to public health.</p> <p>Other ministries have responsibilities for some public health functions.</p>		<p>The Management and Personnel Office of the Prime Minister – health human resources</p> <p>The Council of Health, chaired by the Minister of Health – forum with multisectoral representation.</p> <p>The Food Safety Commission brings together all the key players from government organizations involved in ensuring food safety</p> <p>National Commission for Mental Health</p>

	National level	Local level	Supporting agencies
PL	<p>Ministry of Health – Design of public health policies, coordination of public health issues (inside are the Department of Public Health and Department of Health Policy)</p> <p>Ministry of Economy and Labour – Occupational health</p> <p>Ministry of Infrastructure – Safety of transport and communication</p> <p>Ministry of Social Policy – Health and social protection</p> <p>Governments Representative for Handicapped Persons – Activation and rehabilitation of disabled people</p>	<p>Voivodship (region) self-governing – design regional public health policies</p> <p>Regional Public Health Centres– implement National Health Strategy, monitor public health programmes</p> <p>County self-government – carry out public health programmes according to National Health Strategy and regional policy</p> <p>Territorial self-government – local programmes or networks (e.g.“Health cities” programme)</p>	<p>Central agencies, centers and research institutes – research, health education, health promotion, monitoring and screenings:</p> <p>National Institute of Hygiene (PZH)</p> <p>Institute of TB and Pulmonary Diseases</p> <p>Institute of Psychiatry and Neurology</p> <p>Institute of Mother and Child</p> <p>Institute of Occupational Medicine</p>
SK	<p>Ministry of Health SR, Public Health Authority of the SR and its</p>	<p>Network of 36 Regional Public Health Offices</p>	
SI	<p>The Ministry of Health has a directorate for public health responsible coordinating public health activities</p> <p>The Directorate prepares the general budgetary provisions for the institutions and programmes in the field of public health.</p>	<p>Regional Institutes of Public Health (RPHs) – coordinators of regionally applied programmes based on the national definitions</p>	<p>The National Institute of Public Health – national co-ordinating, supervisory, educational, research and representative role</p>
BG	<p>Ministry of Health – develops, implements national health policies and health programmes</p> <p>National Centre for Public Health – research centre, cooperates with WHO on research and training in mental health</p>	<p>28 Regional Health Centres – coordinates and implements national and regional health programmes, control and accredits health care facilities</p> <p>Regional Inspectorates of Public Health Protection and Control – health protection, and research</p> <p>Hygiene and Epidemiology Inspectorates –sanitary control</p>	<p>Higher Medical Council – set up by Ministry of Health, advises priorities of National Health Strategy</p> <p>Chief Sanitation Inspector (national level) – national health control, health promotion and communicable disease prevention</p> <p>National Centre for Radiobiology and Radiation Protection</p>

	National level	Local level	Supporting agencies
RO	Ministry of Health is the central authority in public health (under the directorate of public health) responsible for setting organization and functioning standards for public health institutions, developing and financing national public health programmes, data collection, empowering public health officials and drawing up reports on the population's health status	42 district public health directorates – develop and implementing public health programmes, monitor health status communicating to public and to local authorities on environmental health matters, sanitary inspection and preventive medicine	Institute of Public Health Bucharest has three main sections: Public Health and Management, Environmental Health and Occupational Health and two centres: National Centre for Control and Surveillance of Communicable Disease; and National Centre for Information, Education and Communication in Health National Institute for Research and Development in Health – research, technical assistance, continuing education and postgraduate training in health management, health policy, health promotion, health education
TR	Ministry of Health – public and preventive health General Directorate of Primary Health-Care Services under MoH is responsible for the planning and delivering of services with regard to infectious diseases, mother and child health, environmental health, food security and laboratories, and mental health.	Provincial Health Directorates provide public and preventive health-related services through health centres and health posts (mainly in rural areas), mother and child health and family planning centres, tuberculosis dispensaries, as well as public health laboratories (in some provinces). Municipalities – food safety and sanitary services at the local level.	General Directorate of Occupational Health and Security under the Ministry of Labour and Social Security Environmental health – Ministry of Environment and Forestry, the Ministry of Agriculture and Rural Affairs, the Ministry of Industry and Trade, the Ministry of Interior Affairs

7. TIME USE AND HEALTH IN THE EUROPEAN UNION

Lifestyles have changed in the last two decades which relates to the increasing severity of diseases of the ‘modern age’, notably obesity and mental health problems. Men and women are more likely to be both engaged in the labour market and household life. Cars are commonly used to cover even short distances. Patterns of physical activity vary between men and women and across age groups and countries. The number of people who walk or cycle to schools or offices has decreased dramatically. Eating behaviours have also changed: the time dedicated to lunch has decreased in many European countries and fast-food has become a preferred substitute of home-made, healthier food. Obesity is reaching an epidemic level in several European countries: the proportion of obese or overweight people, in particular among children, has increased markedly in recent years. The workplace is changing in response to the global marketplace, an ageing population, increased female participation in the labour market, and the perpetuation of an information economy. These changes are associated with increased demands on mental capacity with corresponding increases in related mental health problems, notably stress.

Time use surveys offer the possibility to unveil differences in the labour market, cultural and leisure activities, physical activity, and household tasks within and across countries. Time diaries record what people do during the day and collect information on time spent on different activities such as voluntary work, care, physical activity, and the division between gainful and domestic work. Therefore, they represent powerful tools to understand the relations between changes in daily activities and trends in health including fertility, levels of stress, and physical activity; however it is not a straightforward task to disentangle the complex association between time use and health.

Because of the limited information provided by traditional time use surveys on health and health-related activities, multiple sources were used in the preparation of this report:

- Eurobarometer surveys: Time use and Physical activity
- International Obesity Task Force and European Association for the Study of Obesity
- Health behaviour in school-aged children survey
- Survey of Health, Ageing and Retirement in Europe
- WHO Health for All
- Research papers

This section begins with a description of how Europeans spend their time, pointing out gender gaps in domestic, including care-related, activities. Second, it identifies cross-country and gender differences in the labour market. Reconciling work and family life is often challenging; variations in work-life balance across European countries and between men and women are analysed in the third section. Decisions concerning work-life balance affect the pattern of labour participation, fertility, family formation and quality of life. The

relationship between work and health, in particular stress, will receive detailed attention in the fourth section. A rising number of children and adults are overweight and obese which poses significant risk of many health conditions. Obese people are more likely to develop hypertension, cardiovascular and heart diseases than those non-obese. Therefore, the effect of family meals, physical activity and the new environment on obesity, in particular among children, is discussed in the last subsection, followed by some concluding remarks.

Key points:

- In Europe, men spend more time than women in gainful work, while women spend more time in domestic activities.
- 38% of Europeans declare to exercise or to play sport at least once at week. The most active countries are the Scandinavian ones, the less are Portugal, Italy, Hungary and Greece.
- Men and younger people tend to engage in physical activity more often and more intensively than women and older people.
- Average working hours vary widely across the EU. Part-time employment is an is more common in northern countries, whereas in southern countries it is quite rare and often is a decision driven by the labour market.
- Working conditions, childcare and social services help parents balance work and family life.
- Employment and stress are strongly correlated; the higher the number of working hours, the more likely it is that people report to be stressed.
- Work-related stress affects one-third of the workforce – contributing to health problems, absenteeism and lost productivity.
- High job demand and low control adversely affect health.
- Engagement in multiple activities (e.g. working life, family life, the neighbourhood) has beneficial health effects; but women and men react differently.
- The effect of multiple roles on well-being varies across socioeconomic groups; it is beneficial for privileged women classes, but causes more stress among women in low socioeconomic groups.
- The ageing population has created a ‘pivot generation’ of individuals with dual care responsibilities – for older parents and children/grandchildren.
- There is a striking gender gap in care provision: in most countries women provide more than 70% of care to children and older people.
- Young people (11, 13, and 15) undertake at least one hour of moderate physical activity for 3.86 days per week, on average. Among adults, men are more physically active than women, and the days spent doing physical activity tend to decline with age but in some countries more than in others.
- Physical activity improves health – it reduces the probability of cardiovascular diseases and diabetes, and is a protective factor for depression.
- There is a significant inverse relationship between physical activity and all-cause mortality for both men and women in particular among the older population.
- People who engage in physical activity have more energy and vitality.

- Obesity in adults and children has increased tremendously in recent years: the causes of obesity are mainly environmental – a more sedentary life comes with a higher risk of being overweight or obese.
- Family meals are a preventive factor against obesity, unhealthy eating behaviours, alcohol, and drug and tobacco abuse
- The large number of hours spent watching TV is associated with child and adult obesity.

7.1 Time use across European countries

The division of time between sleeping, eating, watching TV, domestic and leisure activities, and gainful work is largely similar across European countries although small variations are revealed for some activities (Eurostat 2003). Gender differences are seen in time use in most countries. On average, men spend more time watching TV and enjoy more free time than women in almost all countries. Large variations among men and women are observed in household and family activity and gainful work: women spend more time on household and family care activities than men; while men spend more hours in gainful work and study activities. The largest gaps between women and men in household activities are recorded in Hungary, Romania and Slovakia (more than 2 hours) and are lowest in the Nordic countries.

Gender differences among employed individuals differ from those seen in the whole population. Working women and men have less free time (28 minutes less for men and 25 for women). The largest difference in free time among the employed and the total population is observed in Finland, Estonia and Belgium. Norway and the Netherlands have the most free time both among the employed, and the total population. On the contrary, working women reduce only slightly the amount of time to dedicate to household and family care activity, the reduction in time is less than 15 minutes in the 9 out of 12 countries; France, Estonia and Hungary are the exceptions.

Within domestic activities, there is a well established gender division of roles (Keck 2004). Women do mainly housework and caring activities; while men do gardening, maintenance and repairing work. The most time consuming activity for women is food preparation, in particular in the new Member States; second is cleaning and upkeep.

Caring for children and older people

A considerable gender gap is evident in the provision of unpaid, informal care. A pan-European Quality of Life Survey launched in 2003 in the enlarged EU showed that on average, mothers spend twice as many hours caring daily for children than fathers (Saraceno and Olagnero 2004). When mothers are in paid work, the gender gap is reduced but remains. On average, working mothers devote 5.3 hours daily to childcare compared to

3.4 hours for fathers (Saraceno and Olagnero 2004). An estimate of the overall level of care provided by women and men for children, sick, older or disabled people in the EU-15 indicates that in most countries women provide more than 70% of care. In 1996, the share of women among the total number of carers was highest in Portugal (86.2%) and Greece (82.7%) and lowest in Finland (64.6%) and Denmark (59.4%) (Bettio and Plantenga 2004). Moreover, the burden of looking after children and old people is particularly heavy for working women in a couple with at least one child under six years old.

On average, the number of hours that women devote to child care is similar between the EU-15 and new Member States, although differences across countries are significant. Non-working mothers in Finland, Austria, Luxembourg, the UK and the Netherlands spend up to 12 hours per day on child care, while in Cyprus and Malta only 4 hours are dedicated to this activity. In all European countries, working mothers devote less time to child care than those not working; but differences across countries are again observed. Women in paid work in the UK and the Netherlands exhibit the largest number of daily caring hours (8 hours), and those in Turkey, Cyprus, Latvia, Malta and France the lowest (3 hours). Differences in the time dedicated to daily caring for children among working women might be related with variations in working conditions (part-time working), the availability of either other forms of family care (e.g. grandparents care in Southern countries) or external childcare (e.g. school hours are longer in Scandinavian countries and France).

Provision of childcare services is mainly public in the EU-15 (see Table 7.1). However, in the UK and Ireland childcare arrangements are mainly private. The proportion of children under the age of three benefiting from paid care (public or private) varies widely across the EU; the range is from 3% in Greece to 64% in Denmark. For children between three and the mandatory school age, the proportion rises to 46% in Greece and 91% in Denmark.

The data indicate that higher proportions of children in formal care arrangements, mainly public, are found in Nordic countries and lower proportions are consistently evident in southern European countries. In countries with high levels of public expenditure most spending is directed towards group-care in childcare centres and residential care including specialist services for disabled children (OECD 2001; Bettio and Plantenga 2004).

In Finland, France, Italy, Portugal and the UK, the impact of caring for children on parent carers was found to vary according to the family type they belong to. The SOCCARE project, undertaken from 2000 to 2003, showed common concerns across family type in each country. Lone-parent families face the challenge of juggling part-time work with care. In the case of parents with lower-paid jobs, atypical working hours complicate the balance of work and life. Dual-parent carers are constrained by time and the limited opening hours of formal childcare services. Parents in immigrant families are affected by labour discrimination and the absence of their original family network. For 'double front carer' families, concerns mostly relate to elder care with child-care creating a kind of burden alleviation. Parent carers expressed feelings of guilt when children spent long periods in external care but also feelings of debt towards family members providing an important level of care for their children (SOCCARE 2003).

Table 7.1 Proportion of young children in formal child-care arrangements in selected EU Member States

Country	Year	Aged < 3	Aged 3 to mandatory school age	Public or private provisioning
Austria	1998	4	68	Mainly public
Belgium	2000	30	97	Mainly public
Czech Republic	2000	1	85	n.a
Denmark	1998	64	91	Mainly public
Finland	1998	22	66	Mainly public
France	1998	29	99	Mainly public
Germany	2000	10	78	Mainly public
Greece	2000	3	46	n.a
Ireland	1998	38 (<5)	56	Mainly private
Italy	1998	6	95	Mixture of private and public
Netherlands	1998	6	98	Mixture of private and public
Portugal	1999	12	75	Mainly public
Slovak Republic	1999	46	90	n.a
Spain	2000	5	84	Mainly public
Sweden	1998	48	80	Mainly public
UK (England only)	2000	34	60	Mainly private

Source: OECD 2001; Bettio and Plantenga 2004.

Informal carers of disabled and older people are most likely to be middle-age women providing unpaid care for older parents and parents in law. Analysis of the British General Household Survey carried out in 2000 suggests that close to 12% of all adults provide care for an older person (Pickard 2004). In the UK, rapid turnover of carers leads to a substantial number of people taking on a heavy caring role at some point in their lives with estimates concluding that by age 75, over 75% of women and close to 50% of men will provide at least one spell of care of 20 hours (Hutton and Hirst 2001).

According to a recent Survey of Health, Ageing and Retirement in Europe including 11 European countries, individuals in their sixties are most likely to be active pivot family members. The 'pivot' generation represents individuals with dual care responsibilities for their older parents as well as their adult children and grandchildren. In part due to fertility and mortality characteristics of the specific birth cohorts within countries, individuals in Nordic countries (Denmark and Sweden) are more likely to be active pivot family members than in the other countries (Borsch-Supan et al. 2005)

7.2 Working time and family life and health in Europe

The employment rate is on average lower in the new Member States than in the EU-15. In 2002, 64% of the population aged 15-64 was working in the EU-15, compared to only 56% in the new Member States (Keck 2004). Moreover, in recent years, employment has fallen in some countries such as Poland, Romania, Estonia, Czech Republic, Slovakia and Lithuania.

In the EU-15, time spent in paid work averages 38 hours per week; and working hours are longer in the Southern countries (Greece, Portugal, Italy and Spain). Differences between men's and women's working hours are particularly large in some countries such as the Netherlands and UK. Large variations in the average working hours for women and men are also present between the EU-15, new Member States and Candidate Countries (OECD data). Indeed in the three Candidate Countries, 67% of men and 48% of women work more than 48 hours; in the new Member States, the proportion is respectively 42% and 25%. Moreover, part-time jobs are less common in these countries for both men and women. In the EU-15, 32% of women work less than 34 hours, while in the new Member States and the three Candidate Countries this proportion is 13% and 11%.

The decision to opt for part-time work is mainly driven by the desire to have more personal time and time to look after children or old people (European Foundation for the Improvement of Living and Working Conditions 2003); women are more likely than men to state the latter as the main reason. However, some part-time workers would have worked full-time if childcare was more extensive or working hours were shorter.

The perceived barriers to part-time employment are similar across countries. More than half of the employees said it would not be possible to perform their job part-time in almost all countries (European Foundation for the Improvement of Living and Working Conditions 2003). This percentage is particularly large in Greece (82%). A similar proportion of employees believe their employer would not allow them to work part-time (71% in Austria, 65% in Spain, 64% in Italy). A slightly lower number of full-time workers think this would damage their career. In the UK, Ireland, and Greece more than 60% of the employees said that employee rights are worse for part-time workers, while in Italy, the Netherlands and Austria, less than 30% considered this as a barrier. Financial constraints are mentioned particularly in the UK, France and Ireland.

The labour market is also affected by the recent increase in the prevalence of single-mother families in Europe. Currently there is considerable variation across countries in the extent to which single mothers participate in the labour market. For instance in the UK in the mid-1990s 27% of single mothers worked at least 10 hours per week, compared to 20% in the Netherlands, and as much as 72% in France and Austria (Gonzalez 2004). Characteristics that are associated with employment among single mothers include: older age, higher education level, and lower unemployment rates. Cross-country differences may be explained by childcare arrangements and socio-cultural factors.

Work-life balance

Balancing work and family life is often challenging in today's society; this balance influences the pattern of labour participation, fertility, family formation and quality of life. Equal opportunities for men and women in both working and family activities are essential to achieve an optimal work-life balance.

The percentage of employed individuals who report difficulties in reconciling work and family life several times a week is higher in the three Candidate Countries than the EU (Keck 2004). On average, 36% of employed persons declare to be too tired to do household jobs, 23% have difficulties in fulfilling family responsibilities and 8% have difficulty concentrating at work. In the new Member States, these proportions are lower but still larger than in the EU-15.

In comparing problems in reconciling household and family tasks because of workload, interestingly, difficulties in concentrating at work because of family responsibility are less common. The countries where this problem is more widespread are Turkey, Latvia and the UK.

Working men and women do not perceive difficulties in reconciling work and family life differently. Indeed, in the new Member States, men report more difficulties than women, although women spend more time in domestic and family activities than men and employment conditions vary significantly between the two sexes. This might reflect different perceptions of family responsibility between men and women (e.g. financial, amount of time, quality of time) and country-variations in the number of working hours and the extent of family responsibility.

Although the prevalence of women working full-time is lower than for men, women in full-time jobs report more difficulties than men in reconciling work and family life, especially when working very long hours (Keck 2004).

Employment and stress

It is very difficult to measure stress, and even more difficult to measure the links between work-related stress and health. While many countries routinely collect data on ill-health retirements, and work days lost due to sickness, these data are imprecise and may vary depending on the methods and definitions used by the organizations providing the data. Moreover the reasons for work days lost may not be accurately reported. It is essential that data sources are combined: administrative and self-reported, corporate and individual, national and international (Paoli 2003). Survey data provide an indication of the extent of the problem, and combined with data on work days lost and ill-health retirements, it appears that stress is a major problem among the European workforce; work-related stress is a current and future health and safety issue.

In the EU, work-related stress affects one-third of the workforce (Ivanov 2005). On average in the enlarged Europe, working persons are 15% more stressed than those out of work (Health and Health Care in an Enlarged Europe 2004). This effect is lower for the new Member States and the Candidate Countries than in the EU-15; in the former, stress is mainly caused by the economic insecurity. In all countries, life is considered most stressful when employment coincides with low income, whereas is least stressful when leisure is combined with high income.

As shown in Table 7.2, possible characteristics of a workplace that may cause stress, and potentially lead to other mental health problems include: job functions, job insecurity, perceived lack of support, level of empowerment in the decision-making process, bullying or harassment, job strain (i.e. workload and number of hours working), match between workers' skills and job requirements, poor working conditions (exposure to noise, heat, dangerous substances), work-life imbalance (including social and family roles) and an imbalance between reward and effort (Gabriel and Liimatainen 2000; Virtanen et al. 2002; Michie and Williams 2003; Godin and Kittel 2004; McDaid et al. 2005; See *Sections 4.5 and 5* for a discussion of the relationship between employment and stress).

In addition work hazards, both physical and psychosocial, may affect health directly through a physical mechanism, or indirectly, through a psychological, stress-mediated mechanism (European Agency for Safety and Health at Work 2000). Stress may even result from a hazardous physical work environment, such as noise, temperature and humidity.

Table 7.2 Workplace characteristics that cause stress

Category	Conditions causing stress
Organizational culture and function	Poor communication, low levels of support for problem-solving and personal development, lack of definition of organizational objectives
Role in the organization	Role ambiguity and role conflict, responsibility for people
Career development	Career stagnation and uncertainty, underpromotion or overpromotion, poor pay, job insecurity, low social value to work
Decision latitude/control	Low participation in decision making, lack of control over work
Interpersonal relationships at work	Social or physical isolation, poor relationships with supervisors, interpersonal conflict, lack of social support
Home-work interface	Conflicting demands of work and home, low support at home, dual career problems
	Content of work
Work environment and equipment	Problems regarding reliability, availability and suitability of equipment and facilities
Task design	Lack of variety or short work cycles, fragmented or meaningless work, underuse of skills, high uncertainty
Workload/workplace	Work overload or underload, lack of control over pacing, high levels of time pressure
Work schedule	Shift working, inflexible work schedules, unpredictable hours, long or unsocial hours

Source: European Agency for Safety and Health at Work 2000

Links between long-term absenteeism, disability status and the onset of work-related stress have been reported by the European Working Conditions Observatory (Houtman 2004). They reported that in Germany the number of long-term sick due to mental health problems increased by 74% between 1995 and 2002, compared with just a 10% increase in sickness absence due to musculoskeletal or respiratory problems for example. In Spain the General Workers Union estimated that between 50% and 60% of sick leave and disability claims are due to stress at work.

Likewise, in the UK it has been reported that about 40 million working days are lost each year due to stress-related disorders, out of a total of 200 million days lost through sickness absence (European Agency for Safety and Health at Work 2000).

The number of hours worked is linked to work-related stress. In the UK, 35% of working parents report to be stressed by work and the percentage rises to 45% among the ones who work more than 45 hours per week (Swan, 2005). Moreover, among working parents, work has negative effects in terms of irritability (48%, 54% if work > 45), sleeplessness (44%, 50% if work >45), headache (36%), lack of exercises (36%, 49% if work > 45), and exhaustion (35%).

Employment and health

Whether indirectly, through stress, or directly through other mechanisms, there is a growing body of literature identifying characteristics of work, such as working time, that impact health and disability. For instance, surveys show that employees report that their health suffers if they are forced to work longer hours. Also evidence suggests that job stress and lack of autonomy can lead to heart attack (Karasek 1990; Johnson 1998). In 2000 employees worked an average of 36 hours and 40 minutes per week; among only full time employees this number rises to 39 hours and 55 minutes. Average working hours are largely comparable across countries, however this masks the wide disparity within countries (i.e. in professional categories). For instance, manual workers have the longest hours, and managers also work more than the average. In addition, intensity of work varies across working conditions – characteristics such as working at high speed, tight deadlines, and not having enough time to complete a task are not distributed equally across professions. On average, however, there has been an increase in the intensity of work reported by employees between 1995 and 2000 (in the EU-15; European Foundation on the Improvement of Living and Working Conditions 2003).

Not only the number of hours worked but also the extent to which they are atypical (in particular at night, e.g. shift work) also impacts health. Individuals working atypical or irregular hours report greater ill health and fatigue (European Foundation on the Improvement of Living and Working Conditions 2003). The large majority of those working in such conditions in the EU-15 are middle-aged men in four job categories: service and sales workers, managers, technicians, and industrial workers. Stress is reported in an average of 28% of employees, which increases to 36% among those who work at least one night per month, 35% for those working shift-work, and 40% among those who work more than 10 hours one day per month.

Autonomy at work is considered an important determinant of quality of life in all EU Member States (European Foundation for the Improvement of Living and Working Conditions 2005b). On average, employees with lower level of control reported to be less satisfied with their life (Table 7.3).

Table 7.3. Life satisfaction and work autonomy

		Life satisfaction (%)			
Autonomy at work		Not at all satisfied	Not very satisfied	Fairly satisfied	Very satisfied
Satisfactory		2	12	61	25
Low		5	22	57	16
All respondents		3	13	61	23

Source: European Foundation for the improvement of Living and Working Conditions 2005b.

Evidence from the US indicates that job characteristics such as having a ‘stressful job’, lack of control, and environmentally hazardous conditions are associated with disability (i.e. reporting a disability, in terms of activity limitation after previously being in good health; Crimmins 2004). Among men aged 51–61, those who report lack of job control are 44% more likely to report disability after two years; those who report stress are 65% more likely. Among women the same age, those reporting lack of job control are 40% more likely to experience disability. However, once controlling for presence of other health problems, risky behaviours and socioeconomic status, job characteristics were only significantly associated with future disability among men.

Measuring the association between work and health is fraught with difficulties, as it is a challenge to disentangle the multiple influences and correlations among the variables: “The relationship between work and health is not one-to-one or immediate. One work characteristic often has several consequences. A worker’s state of health in turn influences how he or she carries out their work. Many mechanisms linking work and health are progressive or divergent in nature. Persons able to perform a regular job are a priori known to be in better health than the general population: this ‘healthy worker’ effect is all the more marked in cases of difficult working conditions” (European Foundation for the Improvement of Living and Working Conditions 2003).

Multiple roles and well-being

Female participation in the labour market has increased. The average female participation in OECD countries increased from 41% in 1960 to 48% in 1975 and then climbed to 64% by late 1990s. Although the division of labour is still strongly sex-segregated, work is becoming more equally divided among men and women. It is indeed a political goal of many European countries that men and women should equally share both the labour market activity and the unpaid work within the household. This raises questions about the consequences that female employment might have not only on work–life balance but also on women’s health.

Nowadays, society is encouraging men and women to engage in multiple roles, as variety is seen as beneficial to individuals. A large body of research has tried to identify whether it is healthier to be intensively involved in both family and working activities or it is beneficial to dedicate most of the time either to one or the other activity. Are multiple roles causing or preventing stress and mental illness?

According to the stress hypothesis, an additional role to the already multiple roles people have in today society causes higher stress. A common assumption is that high levels of demands in everyday life create stress in particular when combined with restricted control over life (Nordenmark 2004).

On the contrary, for the enhancement hypothesis, participation in working activity increases the amount of financial resources available and help coping with demand, improving overall health status (Klumb and Lampert 2004). For women, participation in the labour market increases economic resources and gives them more power within the household, improving their control over their own life. For men, on the other hand, stronger level of engagement in family life might strengthen the relationship between father and children which is associated with higher life satisfaction for both parties (Nordenmark 2004).

However, it is plausible that both effects influence the overall level of stress in a society: being engaged in multiple roles may be beneficial up to a point and then become a burden when the level of engagement is too high.

The association between high job demand and low control on health has been demonstrated by the results of the Whitehall II study (Kuper and Marmot 2003). In England, job control and demand are significantly associated with risk of coronary heart diseases (CHD). Men with lower decision latitude have significantly higher risk of having CHD but no effect was found for women. On the contrary, the association between job demand and CHD was stronger among women, although significant also among men; it increases when adjusted for the working grade (Kuper and Marmot 2003).

Klumb and Lambert (2004) reviewed the empirical literature on the impact of employment on women's¹⁹ health between the 1950 and the 2000. They selected 93 studies that investigate the impact of employment on psychological distress and in the majority (50 studies) employment has a beneficial effect on health; only 6 studies report an adverse effect. They calculated that employment decreases the risk of becoming depressed by 60%. The impact of employment on general physical mobility was analysed in 50 studies; in 38 the effect was positive and only in 3 was negative. The positive effect of employment was particularly relevant when mortality risk was investigated.

¹⁹ To be included in the review, the studies had to observe women aged between 16 and 68 years.

However, reverse causation might be possible. Women in better health and with a lower risk of mortality have a higher probability of being employed. The role of stress theory and enhancement theory has been investigated in the Swedish population by using longitudinal data²⁰. Men and women with multiple roles (employee, student, spouse, parent, close friend, and near neighbour) have better health (measured as insomnia, lingering illness, regular medication and an index of the three). The probability of reporting any health problems was 2 or 3 times higher for people with zero roles when compared with people with 5 roles in both sample periods: 1986–1989 and 1994–1997. In the periods 1986–1989 and 1994–1997, individuals who lost roles were more likely to have health problems than those who gained roles. As many as 40% of individuals who had lost 3 or 4 activities were regularly on medication for lingering illness, while among those who gained 3–4 roles, in the same time period, only 10% were on medication. A strong negative correlation was found between changes in roles and changes in number of reported health problems (Nordenmark 2004). Men and women might react differently to increasing demand from work and family life. Indeed, among the Swedish population, multiple demands cause an increase in the level of fatigue for both men and women but only women would like to reduce the number of hours work as a results as response to this higher fatigue (Nordenmark 2004).

Stress among women in dual earner couples and single-earner couple was not found to be different in Denmark and Germany (Hammersmith and Lee 2004; Bonke 2005). The number of working hours had no significant effect on the level of stress perceived among women in both countries. In Denmark, having school children significantly increased the level of stress among working women (it is almost significant when only one parent is working). Moreover, women that were more satisfied with their economic situation reported less stress (Bonke 2005).

Evidence from the US suggests that adults are feeling increasingly pressed for time. The most time pressure is felt by divorced women, working women, and women with small children (Worthman 2003). Furthermore, children in families with reported time demands (as measured by either the parent working two jobs, single parent, or 5 or more children in household) were at increased risk of psychiatric symptoms and acute stress (Worthman 2003).

Artazcoz et al. (2004) analyse the gender inequalities in job and family life among working men and women²¹ in Spain, where both the number of working women and the percentage of these working part-time are among the lowest in the EU, and family tasks are mainly a “women’s work”. The risk of being in poor health increases by 5.4 times among women and 2.4 times among men working more than 40 hours per week; and by 4.2 among women

²⁰ A random sample of Swedish men and women was analysed in two points in time: 1986–1989 and 1994–1997.

²¹ The analysis was restricted to women and men aged between 25 and 64 years. Survey carried out in 1999.

and 1.6 among men living in families with more than 3 members. For women, also the probability of medical visits increases when the number of working hours increases.

Roos et al. (2005) compare the health and employment status of women²² in Finland and Sweden. Women living in couples with children had the best health in both countries. In Finland, poor health is higher for women who are simultaneously single and unemployed; whereas in Sweden, all unemployed women tend to report worse health than the employed whatever their family conditions.

As noted above, differences across countries in women's employment conditions are markedly large; part-time work is a key element in understanding the combination of job and family life with health status. Moreover, multiple roles might affect differently the health status of people in various socioeconomic groups. For example, in Spain, although housewives with both low and high education levels reported worse health status than those employed, women with high education were, on average, in better health (Artazcoz et al. 2004). Moreover, family demands affected greatly less educated female workers, while it had no effect among privileged female workers. The combination of working and low education had a significant negative effect on the well-being of Spanish women. Indeed, children are a source of satisfaction, self-esteem and, therefore, may improve, instead of decrease, well-being for women with high education and sufficient resources to pay for help with domestic tasks and childcare.

7.3 Physical activity in the EU

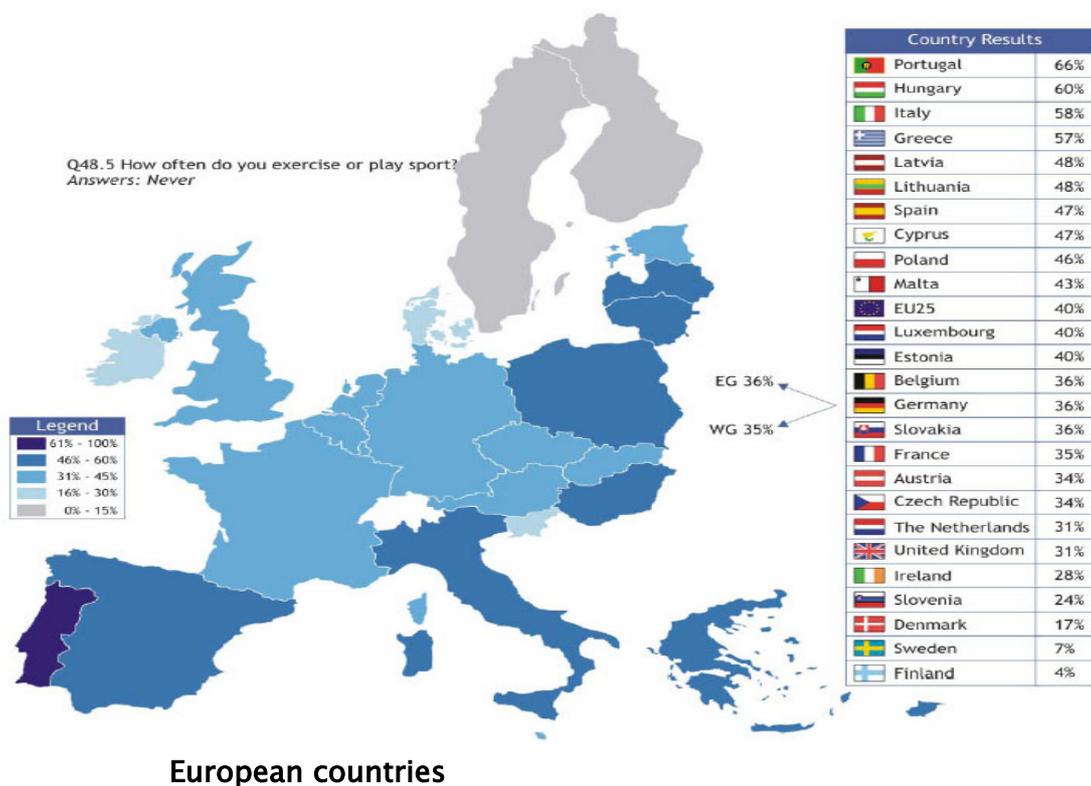
Levels of physical activity vary across the EU. On average, in 2004, 47% of citizens of 25 European countries reported exercising or participating in sport at least one or three times a month; 38% at least once a week. Across the EU, the prevalence of individuals who report no physical activity within a month period ranges from 4% in Finland to 66% in Portugal. Scandinavian countries are the most physically active in Europe: more than 90% of Finnish and Swedish citizens reported exercising at least once a month. High rates of physical activity are also found in Denmark, Slovenia and Ireland. On the contrary, Italians, Hungarians, Greeks and Portuguese lead a more sedentary lifestyle (Figure 7.1).

Men tend to exercise more often than women. Time spent exercising is inversely correlated with age: 60% of individuals aged 15–25 declared to do sport at least once a week, the proportion decreases to 41% among individuals aged 25–39, to 34% among those aged 40–54, and then to only 28% of individuals over 55 years old.

Physical activity may consist of planned and structural movements or competitive sports, but also routine activities such as household jobs, shopping and work. It is indeed possible to distinguish 4 kinds of physical activities: leisure-time, work, commuting and home.

²² The analysis was restricted to women aged between 25 and 49 years. Surveys carried out in 1994/1995.

Figure 7.1 Prevalence of individuals who do not exercise or play sport in 25



Source: European Commission Special Eurobarometer 2004.

In 2003, the percentages of responders who claimed to do some or a lot of physical activity at work in the 7 days before the interview were respectively 21.8% and 19.9% , while 52.1% and 15.7% stated that they got some or a lot of physical activity when moving from place to place. In the context of home, 24.6% of responders reported to do ‘a lot’ of activity and 49.5% ‘some’ activity. Finally, the proportions of individuals who stated to do a lot or some physical activity during the leisure time were 1.9% and 36.6%.

The relationship between age and type of physical activity is not univocal. For physical activity in the context of work, people aged 26–44 reported the highest physical activity, followed by people aged 15–25 and 45–64 (Table 7.4). In the context of transportation and leisure time, there is an inverse correlation between percentage of physical activity and age. On the contrary, physical activity in the home is more common among older people.

Differences between men and women are also found: men claimed to do more physical activity at work and in the leisure–time than women, while the contrary was recorded in the context of home activities. No variation between men and women was identified for physical activity due to movement from one place to another (European Commission 2004).

Physical activity is considered a means to improve ones health by 78% of Europeans. Among the other important benefits of sport the most cited are: development of physical performance (46%), relaxation (43%) and having fun (39%). Moreover, 80% of responders

believe that physical activity is essential to prevent obesity; particularly in Poland, Malta, Cyprus and Greece where this percentage reached 95% (European Commission 2004).

The main reason for absence of any sport activities is the lack of time for the majority of European citizens. For example, in Cyprus, Malta and Portugal more than 50% of individuals who never played sport state this decision is due to lack of time, but this percentage falls to 30% in Austria, Germany, the Netherlands and Estonia. Many citizens (among those who never did any sport) declared not to be interested in sport in Germany (33%), Italy (31%), Austria (30%) and Sweden (30%).

Table 7.4 Physical activity in the context of work, transportation, at home and for leisure-time in the last 7 days, EU-15

	15-25 years	26-44 years	45-64 years	+65 years
Work				
A lot	20.9	27.7	20.0	2.7
Some	23.8	28.3	23.3	5.9
Little or none	46.9	39.3	48.0	72.1
DK	8.3	4.7	8.7	19.8
Transport				
A lot	21.4	16.4	14.5	11.1
Some	53.2	51.8	53.6	49.5
Little or none	24.2	30.7	30.5	36.1
DK	1.2	1.1	1.4	3.3
Home				
A lot	15.5	27.7	27.9	24.0
Some	46.2	49.0	51.3	50.6
Little or none	36.5	22.2	20.6	24.0
DK	1.9	1.0	1.1	1.3
Leisure time				
A lot	31.0	14.5	11.2	6.1
Some	39.2	39.7	36.0	29.5
Little or none	28.7	43.7	50.0	60.1
DK	1.1	2.1	2.8	4.3

Source: European Commission, Special Eurobarometer 2003.

Children: physical activity and their media environment

Guidelines for young people recommend at least one hour of moderate physical activity per day and further specific activities that improve muscular strength, flexibility and bone health should be undertaken two or more days per week (Biddle et al. 1998; Pete et al. 1998).

The Health Behaviour in School-aged Children (HSBC) study measures the number of days in which young people (11, 13 and 15 years) are physically active for at least one hour. Physical activity in the 2000–2001 survey was defined as “any activity that increases your heart rate and makes you get out of breath some of the time. Physical activity can be done in sports, school activities, playing with friends, or walking to school.”

On average, young people undertake at least one hour of moderate physical activity for 3.86 days per week but large variations are found between boys and girls and across countries (Table 7.5). In all countries, boys are more physically active than girls. The most active countries are Ireland, Czech Republic and England, while the less active are France, Belgium (Flemish) and Portugal. Moreover, physical activity tends to decline with age but in some countries more than in others (WHO 2004a).

Table 7.5 Physical activity (PA) and sedentary behaviour during weekdays among young people, 2000–2001: European comparisons.

	Days PA >1 hour		TV >= 4 hours weekdays		Computer >= 3 hours weekdays	
	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)
Austria	4.50	3.87	16.8	13.2	17.07	7.27
Belgium (Flemish)	3.40	2.83	26.4	18.3	18.60	8.83
Belgium (French)			21.1	17.1	17.47	5.97
Czech Republic	4.57	4.00	29.3	22.9	23.40	5.20
Denmark	3.93	3.63	25.5	21.1	27.93	4.63
England	4.63	3.83	31.3	29.7		
Estonia	3.63	3.27	43.3	33.6	28.33	7.17
Finland	3.93	3.67	18.6	19.6	18.27	2.97
France	3.50	2.70	21.4	16.9	11.53	3.90
Germany	3.87	3.33	22.6	18.3	19.07	5.20
Greece	4.33	3.53	21.7	14.5	15.00	3.30
Hungary	4.03	3.37	22.0	18.8	18.63	5.73
Ireland	4.83	4.10	21.5	17.3		
Italy	3.70	3.20	21.1	24.4	11.03	4.53
Latvia	4.07	3.43	43.1	37.1	21.77	7.90
Lithuania	4.63	2.73	38.4	29.3	18.37	5.37
Malta	4.20	3.17	19.4	16.2	20.37	8.37
Netherlands	4.17	3.93	27.0	20.4	23.50	8.93
Poland	4.27	3.80	34.2	24.4	24.70	8.03
Portugal	3.80	3.00	31.5	33.9	23.20	6.57
Scotland	4.47	3.77	31.6	29.7	32.30	13.03
Slovenia	4.53	3.77	20.9	16.9	17.37	3.60
Spain	4.07	3.53	22.8	21.9	13.43	6.63
Sweden	4.03	3.80	18.7	17.0	27.17	7.87
Wales	4.37	3.70	31.1	32.3	22.70	9.97

Source: HSBC 2000–2001.

The new changing media environment presents both challenges and risks for children and young people. More than 25% of young people watch TV for more than four hours during weekdays (Table 8.5) and this percentage rises during the weekends (WHO 2004a). In almost all the countries boys spend more time watching TV than girls, but differences are observed across countries. The highest percentage of young people watching TV is in the Baltic countries, 40.1% in Latvia, 38.4% in Estonia and 33.9% in Lithuania; the smallest percentage is in Austria (15%), followed by Malta and Sweden (17%).

Variations in number of hours young people spend watching TV might be explained by differences in the variety and quality of programmes, the presence of cable TV and the size of the language community (WHO 2004a; Livingstone and Bovill 2001). Access to TV and a video recorder in the home is almost universal in Europe, but access to TV in the child's own bedroom varies widely across countries (Livingstone and Bovill 2001). The presence of a TV in children bedrooms is more common in Great Britain and Denmark and less common in France and the Netherlands (in a comparison of 12 European countries). Moreover, boys are more likely to have a TV set in their bedroom than girls and this tendency is more varied among children in low socioeconomic groups (Livingstone and Bovill 2001).

Access to personal computers varies widely across countries (Livingstone and Bovill 2001). In Belgium and the Netherlands, between 8 and 9 families out of 10 have a personal computer at home; while in Germany, Denmark, Spain, England and Italy, only half of the families have a personal computer at home. The probability of having a personal computer often increases with the age of the children; and families of higher socioeconomic status are more likely to have a personal computer at home.

Therefore, it is not surprising that the use of computer among young people varies across countries. On average, the percentage of young people who use computers for more than three hours during weekdays is 13% (Table 8.5) and it rises at weekends (WHO 2004a). The countries with the lowest number of young people who are high users of computers during weekdays are France, Greece and Italy; while Estonia and Scotland have the highest percentage of young children who use computers for more than three hours during weekdays. In all countries, the percentage of boys reporting high level of computer use is higher than that of girls, for example, in Denmark and Finland it is six times higher. Moreover, computer use tends to increase between age 11 and 15 for boys but for girls there is no clear pattern (WHO 2004a).

7.4 Physical activity and health in the EU

In 2001, noncommunicable diseases accounted for nearly 60% of death in developed countries and for 47% of the global burden of diseases (WHO World Health Report 2002). Among the most important risk factors of noncommunicable diseases are diets (inadequate intake of fruits and vegetables), obesity and physical inactivity. Although the effects of diet and physical activity on health are strongly correlated, physical activity can be beneficial also independently from nutrition and diets habits, being a fundamental means for improving physical and mental health of individuals (WHO 2004b).

Physical activity reduces the risk of cardiovascular diseases and diabetes and has beneficial effect on health. It reduces blood pressure and high concentration of cholesterol in the blood, and reduces the risk of colon cancer and breast cancer among women. Moreover, physical exercise reduces the risk of depression and improves psychological well-being.

Physical activity and health

Across European countries, after controlling for age, income, educational status and tobacco consumption, physical activity is positively correlated with self-assessed health (Abu-Omar et al. 2004b). Individuals who do regular physical activity are more likely to report good health than individuals who do not participate in any physical activity and the probability of being in good health further increases among individuals who are highly active (Table 8.6). Physical activity is particularly beneficial among the elderly population. Individuals over 55 years who engage in physical activity have 77% higher probability of being in good health than those who are non active. Differences across countries in the relationship between physical activity and health are quite large. Physical activity (regular and intensive) is a significant determinant of reported health in Austria, Great Britain, Ireland (only highly activity), Italy, Portugal and Sweden.

Physical activity and all-cause mortality

A significant inverse relationship between physical activity and all-cause mortality in both men and women in all ages has been identified by a literature review including 44 studies (Lee et al. 2001). The risk of all-cause mortality is reduced by 20–30% by engaging regularly in physical exercise (minimal adherence to physical guidelines, 1000 kcal, and further reduction in the mortality risk are observed for higher levels of exercise.

Although physical exercise is beneficial for both women and men, the magnitude of the benefit might vary because of differences in type, duration, and intensity of physical activities among the two genders. On average, more active women have a 34% lower risk of dying for any specific cause of mortality when compared to the least active women (review of 38 studies, Oguma et al. 2002). Activity among women was most beneficial in older ages (>65). Indeed, older active women had 42% lower risk of dying for all-cause mortality. Moreover, if only occupational or non-recreational physical activity are taken into consideration, the risk of dying for all-cause mortality among the more active women was again 46% lower than for those least active, for leisure-time activities and physical fitness it was respectively 46% and 45% lower (Oguma et al. 2002).

Moderate physical exercise and all-cause mortality seem to be particularly beneficial for women and elderly people, while the more vigorous and intense physical exercises are especially favourable for middle-aged men (Bucksch 2005). Danish men and women who engage in moderate leisure-time physical activity have 29% and 36% respectively lower risk of death than those who report low physical activity; and men who increased leisure-time physical activity from low to moderate or high were less likely to die in the periods 1976–1978 and 1981–1983 (Scnhor et al. 2003).

Table 7.6 Odds ratios for self-rated health as good or very good versus fair to bad by physical activity levels compared to insufficient activity (OR:1) by country

	Sufficiently active	Highly active
Austria	2.07	2.53
Belgium	1.43	1.91
Denmark	1.11	1.44
Finland	0.89	1.31
France	1.53	1.91
Germany (West)	1.21	1.74
Germany (East)	1.03	1.82
Great Britain	2.04	2.83
Greece	0.99	1.02
Ireland	1.31	5.50
Italy	2.21	1.95
Netherlands	1.31	1.55
Portugal	1.69	2.04
Spain	1.55	1.83
Sweden	1.73	2.09

Note: Odds ratios adjusted for age, income, education, smoking and nationality. Respondents who reported to be severely restricted in physical activity due to health problems in the past six months have been excluded.

Bold numbers: statistically significant with a 95% confidence interval.

Source: Abu-Omar et al. 2004b.

Physical activity and cardiovascular diseases

Physical activity is a primary risk factor for cardiovascular diseases (CVD); moderate or high levels of occupation physical activity (walking or cycling to and from work at least 15 minutes) reduce significantly the risk of CVD mortality especially among women (Barengo et al. 2004). Men and women who engage in at least one activity (commuting, leisure-time or occupational) have lower risk of CVD than people who report low levels of commuting, leisure-time and occupational physical activity (reference category). The joint association of the three physical activities determine a significant risk reduction in CVD among women but among men a significant reduction is found also for those who have moderate or high occupational physical activity.

Physical activity and stroke

Physical activity has a beneficial effect also on stroke risk (meta analysis, Lee et al. 2003). Cohort studies show a reduction of 25% in the risk of stroke incidence among the most active individuals when compared with the least active; in case control studies, the reduction in risk is 64%. By combining all studies, men and women highly active have 27% lower risk of stroke incidence or mortality than low active individuals. Moreover, similar results are found for people who engage only in moderate physical activity when compared with inactive individuals (Lee et al. 2003).

Physical activity and type 2 diabetes

Physical activity and sedentary behaviour such as being a high user of TV affect the likelihood of becoming obese and developing type 2 diabetes among women (Hu et al. 2003). The study shows that after adjusting for age, smoking, physical activity and diet, watching television and sitting at work are leading risk factor for both obesity and diabetes. Indeed, each two hours per day increments in television watching and sitting at work were associated with respectively 23% and 5% increase in obesity and 14% and 7% increase in risk of diabetes. On the contrary, standing or walking around at home for two hours per day and one hour of brisk walking were reducing the risk of obesity of respectively 9% and 24% and of diabetes of 12% and 34%.

Physical activity and mental health

The World Health Organization has estimated that by 2020 mental illness, in the form of depression and anxiety, will be the leading determinant of disability and a major cause of deaths. Several studies have shown that physical activity can improve psychological well-being and reduce the risk of depression. Physical activity has a beneficial effect on psychological well-being, such as mood, physical self-worth and self-esteem, among individuals who are not suffering from mental disorders (EUFIC 2003; Elley et al. 2003), in particular among the elderly population (Netz et al. 2005).

More active individuals have higher level of energy and vitality (as measured with EVI scale) across all age-groups and, especially, for men and women over 55 years old (Abu-Omar and Lehtinen 2004a). A dose response relationship between level of physical activity and the level of nervousness and depression (as measured with MHI-5 scale²³) was found in Finland, France, Germany, Ireland, Luxembourg, Spain and Sweden: the higher the level of physical activity, the lower the probability of suffering from mental disorders in these countries. However, this effect was not seen in Austria, Greece and Italy (Abu-Omar and Lehtinen 2004a).

²³ The MHI-5 gives a score from 0-100, low scores indicate a higher degree of mental disorders. A cut-off point of 52 or less was chosen to identify the occurrence of MHI-5 cases.

Moreover, physical exercise might be as beneficial as medications in the treatment of depression (Dunn 2001). Leisure-time physical activity might be more effective for improving mental health than physical activity in the context of work or for transportation.

Physical activity and health among children and young people

The literature on the benefits of physical activity among children is not as well documented as for adults. However, physical activity among young people seems to have positive effects on body weight, blood pressure, blood lipids, skeletal health and psychological well-being (WHO 2004a). Moreover, an active child is more likely to be an active adult (Malina 2001) with all the advantages that this carries with it. Too much exercise, however, can be damaging, as the probability of muscular injuries increases with the amount of physical activity children undertake (Williams et al. 1998).

7.5 Adult and child obesity in Europe

Obesity is an important cause of several chronic diseases such as type 2 diabetes, cardiovascular diseases and cancer. In Europe, 78 000 new cases of cancer each year are estimated to be caused by overweight (International Obesity Task Force 2002).

European adults' obesity rates range between 9.5 and 27% among men and reaches 38% among women (see *Section 2*). Italy has the lowest prevalence of obesity both among men and women. Moreover, among men, low rates of obesity can also be found in Latvia, Estonia, Austria and Sweden. Obesity is more common among women than men in the majority of countries. The country with the highest rates of obesity for both men and women is Greece, followed by Malta and Czech Republic.

Obesity rates have increased in all countries (International Obesity Task Force, 2005). In France, obesity rates rose from 8% to 11.3% among men and 8.4% to 11.4% among women from 1997 to 2002; in the Netherlands almost doubled among men from the late 1970s to the mid-1990s; and in the UK (between 1993 and 2003) increased from 13.2% to 22.2% among men and from 16.4% to 23% among women.

Central and eastern European countries have experienced a dramatic increase in obesity rates in the last decade. In Hungary the obesity rate has doubled since 1989. Also, four-fifths of Latvian women and Czech men have a body mass index above 25 (Spritzer 2004).

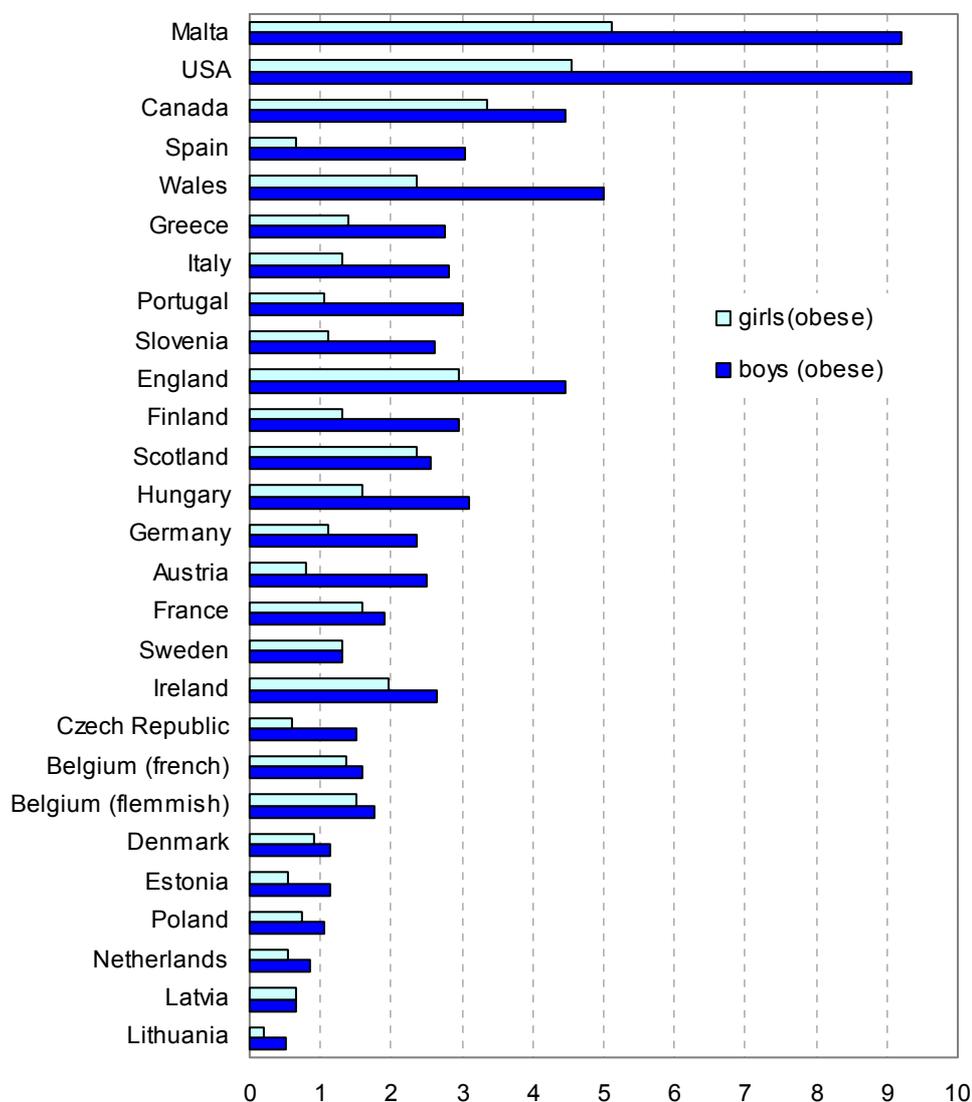
Moreover, obesity and its related conditions are unevenly distributed in society. People with lower income tend to consume more meat, fat and sugar; while people with the highest education level, consume more fruit and vegetables (WHO 2005).

Children obesity and its risk factors

Obesity among children is rapidly reaching an epidemic level in many European countries. Countries with the highest percentage of overweight boys and girls ($25 < \text{BMI} < 30$) are the United States, Malta, Canada, and Wales; while the lowest percentages are observed in Scandinavian countries and central European countries (WHO 2004a). Countries with high prevalence of overweight children tend also to have high rates of obesity ($\text{BMI} > 30$). Indeed, obesity rates are highest in Malta and the United States, followed by Canada, England and Wales (Figure 7.2). On the contrary, the lowest rates of obesity are observed in Lithuania, Latvia, the Netherlands, Estonia and Poland. Everywhere, the rate of obesity is larger among boys than among girls, but the difference between genders varies across countries.

The prevalence of childhood obesity and overweight is even larger among the younger population: children aged 7–11 years. It is, indeed, 30% in Malta, Sicily, Spain, Portugal and Italy; and is above 20% in England, Ireland and Cyprus (International Obesity Task Force 2005).

Figure 7.2 Percentage of school male and female children aged 13 and 15, obese (BMI > 30) in 2001–2002

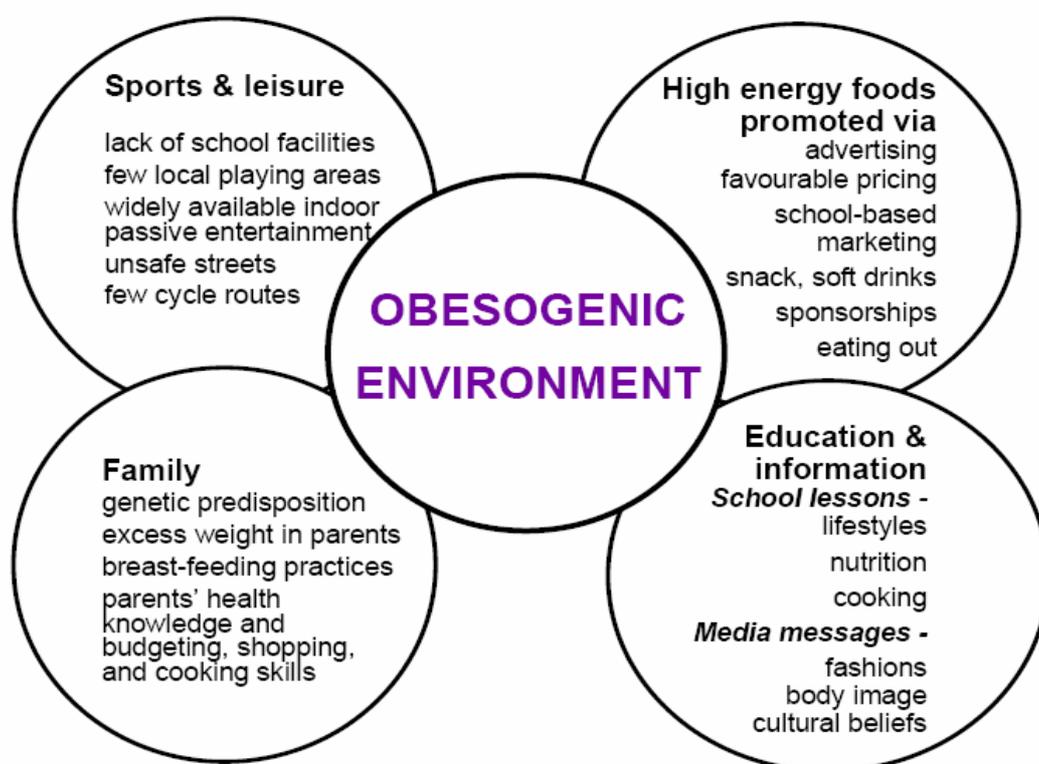


Source: HSBC, 2000–2001.

Overweight children have a great risk of becoming overweight adults (WHO 2004; Parsons et al. 1999) with a higher risk of CVD, diabetes, hypertension and cancer. Type 2 diabetes which until recently was considered a weight-related disease among adults, is now becoming a childhood disease in various European countries such as the UK, Portugal and Sweden (International Obesity Task Force 2002). Moreover, obese children are more likely to report complications such as adverse blood lipid profiles, sleep apnoea, orthopaedic problems, and psychological problems like eating disorders, poor social relations and educational disadvantages.

Although there are genetic predispositions, an estimated 99% of the factors behind the significant increase in obesity rates among adults and children are environmental (Figure 7.3). Children are more likely to become overweight if their parents are obese and if they grow up in low income households (International Obesity Task Force 2002). The principal causes of obesity are increased availability and consumption of fast food and decrease in physical activity. Between 1970 and 1997 the amount of automobile passenger km more than doubled (1500 to 3700 km) whereas other methods of transport have remained at low levels (WHO 2003). The number of people who either walk or cycle to schools or offices has dramatically decreased in the last decade. Computers and televisions have changed people lifestyles by encouraging more sedentary behaviours.

Figure 7.3 Factors contributing to obesogenic environment among children



Source: International Obesity Task Force, 2002.

Changes in daily behaviour such as the role of family meals, physical activity and time spent watching TV significantly influence health status (Neumark-Sztainer et al. 2004; Reilly et al. 2005; Mestdag and Vandeweyer 2005; Mestdag 2005).

A balanced diet and appropriate eating patterns reduce the risk of becoming obese. Children who skip breakfast are more likely to consume snacks during the day and tend to have a less nutritious diet (WHO 2004a). The consumption of snacks, low consumption of fruit and vegetables, and large intake of sweets and soft drinks are all leading risk factors of childhood and adolescent obesity. Children's diets are influenced by social factors such as the influence of the family versus peers, the desire to express their independency (often associated with an increase in the number of meals eaten outside the home or school) and the influence of marketing and advertising campaigns (WHO 2004a).

On average, 68% of boys and 59% of girls have breakfast every school day (Table 7.7). Great variation is observed across countries. In Portugal (81%) and the Netherlands (78%), almost all young people have breakfast; while in Slovenia (38%) and Greece (45.6%) it is less common to have breakfast before school. Although the percentage of girls who have breakfast every morning is lower than that of boys, they consume more fruit and vegetables than boys; 31.5% of girls eat vegetables and 36.5% eat fruit every day against respectively 25.8% and 30% of boys (Table 7.7). Large variations are again observed across countries. Eating vegetables among young people is more common in Belgium, France and the Netherlands; and less common in Spain, Hungary, Estonia and Malta. Countries with the highest proportion of young people eating fruit daily are Portugal, Malta and Poland; while eating fruit is less common among young people in the Northern countries. For the consumption of soft drinks and sweets, variations across countries are even larger. In Malta, Scotland and the Netherlands over 40% of young people drink soft drinks and eat sweets, while in Finland and Sweden the proportion is less than 15%.

Table 7.7 Eating habits and obesity, 200–2001: international comparisons

	Breakfast every school day		Vegetables every day		Fruit every day		Soft drinks every day		Sweets everyday	
	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)
Austria	61.8	52.9	15.3	17.0	31.9	42.9	24.4	17.2	20.17	22.47
Belgium (Flemish)	77.4	71.8	46.9	57.8	22.1	30.3	47.7	31.9	32.20	25.40
Belgium (French)	69.1	61.3	41.4	48.5	36.4	40.0	42.5	33.4	42.90	42.80
Canada	63.8	52.5	35.7	44.1	30.7	40.7	28.2	17.3	23.30	21.53
Czech Republic	58.4	45.1	23.7	31.6	35.6	48.8	31.0	26.4	25.63	24.83
Denmark	76.5	69.1	25.3	31.4	25.4	38.4	13.3	6.8	11.83	11.33
England	63.5	48.7	25.9	31.0	24.5	28.9	40.6	36.4	31.67	31.50
Estonia	76.1	71.3	14.3	16.5	17.3	22.9	12.6	6.9	26.43	29.97
Finland	72.6	62.4	16.4	27.3	16.4	26.6	10.1	6.1	9.27	8.63
France	76.7	66.0	40.9	45.9	34.0	34.4	32.4	25.6	30.20	26.73
Germany	70.3	63.7	26.2	34.5	37.9	46.9	34.9	25.3	26.63	28.30
Greece	51.5	39.6	19.5	23.4	35.0	41.2	23.1	13.7	15.53	15.43
Hungary	57.7	49.0	13.8	16.0	29.3	33.4	33.4	31.7	31.43	35.97
Ireland	77.6	66.1	36.3	42.2	28.9	36.2	40.3	34.3	48.07	49.40
Italy	67.4	57.3	17.7	25.8	38.4	38.5	28.5	20.6	37.93	38.50
Latvia	77.8	71.7	26.4	30.8	21.8	26.8	18.5	13.2	25.90	29.07
Lithuania	77.0	66.9	29.3	31.0	20.3	24.2	12.1	8.1	17.23	20.67
Malta	55.3	49.2	13.8	18.1	43.2	51.9	42.4	38.0	51.97	55.00
Netherlands	80.9	75.1	37.6	43.6	26.4	29.7	49.3	38.3	44.73	41.27
Poland	72.0	66.1	32.3	40.5	41.0	51.2	30.6	20.2	35.77	37.00
Portugal	84.5	77.1	22.6	29.5	43.5	52.1	36.9	29.6	24.00	21.33

Scotland	66.7	51.7	30.5	35.9	31.0	36.4	50.9	43.5	46.80	42.93
Slovenia	40.2	38.2	21.6	29.6	32.7	44.4	42.7	37.3	25.70	27.13
Spain	77.1	67.3	10.3	11.3	35.7	37.6	34.3	25.8	23.37	23.27
Sweden	77.3	69.5	27.7	32.1	25.5	27.9	17.3	8.6	14.93	12.20
USA	53.5	41.0	26.9	32.6	27.9	27.5	45.4	39.4	31.47	34.33
Wales	62.8	47.6	19.5	23.1	20.0	26.1	37.6	35.4	26.33	27.37

Source: HSBC 2000–2001.

The analysis of family meals is important for the direct and indirect role these have in preventing obesity, unhealthy eating behaviours, alcohol, drug or tobacco use. Neumark-Sztainer et al. (2004) suggest that in the USA family meals are powerful instruments in the fight against unhealthy eating behaviours: 18% of girls who reported only 1–2 family meals per week engaged in bad eating behaviours compared to 8.8% of girls who reported 3–4 meals per week. However, the role of family meals is losing importance in today's society (Mestdag and Vandeweyer 2005; Mestdag 2005): time spent eating has decreased in many countries. Family meals remain “a central ritual within family life” (Mestdag and Vandeweyer 2005) and still represent the most important activity done as a family, although large variations among households are present.

The large number of hours spent watching TV are also associated with child and adult obesity (Hancox et al. 2004; Marshall et al. 2004; Stettler et al. 2004). In the UK, the risk of obesity at age 7 is mainly associated with parental obesity, very early body mass index, more than 8 hours per week spent watching TV at age 3, weight gain in first year, catch up growth and short sleep duration at age 3 years.

In Germany, although childhood obesity is more common among foreign children, in particular from Turkey and southern countries, time spent watching TV was a main determinant of childhood obesity. Physical inactivity is a major risk factor for obesity in children. However, the factor that contributes the most to explain excess weight in Germany was mother's education (Kuepper-Nybelen et al. 2005). Low maternal education can be considered a proxy of the socioeconomic status and may be associated with inadequate knowledge of risk factors for obesity such as unhealthy diet with high consume of sweets, savoury snacks, and fast-food.

In Finland, time spent watching TV and using computer was significantly associated with adolescent obesity (14, 16 and 18 years old), in particular, among girls. Watching TV for more than four hours per day versus less than one hour, and using the computer for more than one hour versus less than one hour increased the risk of obesity about 50% (Kautiainen et al. 2005).

Among children (age 10–16), the relationship between prevalence of obesity and overweight and consumption of sweets, low engagement in physical activity and number of hours spent watching TV has been further investigated by Janssen et al. (2005) (Table 8.8). Children are less likely to become obese if they consume less sweets, engage in physical activity and spend fewer hours watching TV. However, large differences are evident among

European countries. Sweet intake is a significant predictor of overweight in all countries but Ireland and Malta. The contribution of sweet intake was particularly relevant in Germany, Hungary and Sweden. Physical activity is on average a protector factor against obesity, the only exceptions were Denmark, Germany and Latvia. The role of excessive TV watching as a cause of obesity was particularly significant in Austria, Finland, Germany and Belgium.

Policies and interventions

Obesity has reached epidemic levels. According to recent estimates, 400 million adults in Europe are overweight and 130 million are obese (WHO 2004c). If the prevalence of obesity continues to increase as fast as in the 1990s, by 2010 the number of obese people will rise to 150 million with an increase of four million people per year. The spread of this epidemic is even faster among children, according to the International Task Force, in the 1970s the annual increase in prevalence of obesity among children was 0.2%, in the 1980s was 0.6%, to increase to 0.8% in the 1990s, and reach in some cases 2% in the 2000s.

The costs of obesity have been estimated to be between 2 and 8% of overall health care budgets, and in eastern Europe the costs are up to 5% of total health care costs. The costs include both direct costs (medical and health care expenditures for nutritional-related diseases such as coronary heart disease, dental caries and cancer), indirect costs (lost of productivity) and intangible costs (underachievement in school and discrimination).

Actions are needed to fight and prevent obesity, in particular among the young population. Children are, indeed, targeted as potential consumers by sophisticated marketing advertising for high calorie energy-dense foods and drink which are among the contributing factors to the increase in obesity (International Obesity Task force and the European association for the Study of Obesity 2002).

Table 7.8 Odds ratios for overweight using predictions models with foods and physical activity variables

	Less sweets intake	Physical activity	TV viewing time
Austria	0.85	0.80	1.24
Belgium (Flemish)	0.87	0.82	1.15
Belgium (French)	0.85	NA	1.11
Czech Republic	0.81	0.88	1.09
Denmark	0.83	0.99	1.17
England	0.88	0.91	1.11
Estonia	0.80	0.90	1.10
Finland	0.88	0.91	1.17
France	0.90	0.89	1.12
Germany	0.78	0.99	1.17
Greece	0.92	0.95	1.12
Hungary	0.77	0.87	1.13
Ireland	0.98	0.82	1.02
Italy	0.86	0.89	1.09
Latvia	0.85	0.96	0.96
Lithuania	0.85	0.94	1.04
Malta	1.02	0.84	1.04
Netherlands	0.85	0.88	1.17
Poland	0.90	0.86	1.01
Portugal	0.87	0.93	1.03
Scotland	0.86	0.87	1.09
Slovenia	0.81	0.88	1.08
Spain	0.89	0.90	1.09
Sweden	0.72	0.86	1.02
Wales	0.83	0.88	1.04

Notes: Bolds numbers are statistically significant with a 95% confidence interval.

Source: Janssen et al. 2005.

Evidence of effectiveness of national strategies in reducing childhood obesity are lacking. Trials are often small in size and the majority have been conducted in the USA, with clear difficulties in translating the results to the European region (Wilson et al. 2005). However, there is some evidence that school based programmes and multifaceted interventions that promote healthy diet and physical activity targeting sedentary behaviours such as TV

viewing are effective in reducing obesity in school children, in particular among girls. The role of the family is also essential in combating obesity among the young population.

In Europe, the main areas of interventions for reducing and preventing obesity are (WHO 2005; and International Obesity Task Force 2002): improving diet, and increasing physical activity.

Key settings for the implementation of a global strategy against obesity are:

- The school (health education, school meals and leisure activity)
- The local environment (transport, housing, and outdoor recreation)
- The health and medical services for maternal and child care (maternal nutrition and breastfeeding)
- The workplace (promoting the use of public transport, leisure facilities).

In 2004, a Global Strategy on Diet, Physical Activity and Health was launched by the Fifty-seventh World Health Assembly, with four objectives:

1. decrease the burden of non-communicable diseases;
2. increase the overall awareness of the importance of a healthy diet and increased physical activity for combating obesity;
3. encourage the development of global and national initiatives; and
4. monitor scientific data on diet and physical activity.

Further areas of interest are food advertising and labelling policies; the role of health systems; fiscal and regulatory policies; surveillance, research and evaluation; consumer education and communication; school, transport and urban policies. Moreover, an Action Plan for Food and Nutrition Policy for the period 2000–2005 has been developed by the WHO regional Committee for Europe; and a Platform for Action on Diet, Physical Activity and health has been launched by the European Union. Actions have been taken also at the national level (e.g. France, the Netherlands, the UK, Spain, Slovakia, and Sweden).

7.6 Conclusions

This investigation of time use and health has highlighted some interesting findings. Men spend more time than women in gainful work, while women spend more time in domestic activities and provide the large majority of care to children and older people. However more women are working and the percentage of men who spend a time on households and childcare activities is increasing. The role played by part-time employment as well as the number of hours worked varies notably from country to country, but is more common in northern countries. Not only flexibility in the labour market but also the availability of childcare and social services helps working parents balancing work and family life.

Difficulties reconciling work and family responsibilities and changing work environments may be contributing to the increase in stress seen across the EU, contributing to physical and mental health problems, absenteeism and lost productivity.

In examining patterns of physical activity across Europe, it appears there is considerable variation across countries, despite an decline in overall activity in recent years. More active individuals are healthier, have more energy and vitality – physical activity reduces the probability of cardiovascular diseases and diabetes, and is a protective factor for depression.

Obesity is reaching an epidemic level; the number of people overweight or obese has increased tremendously in recent years, in particular among children. The causes of this increase in obesity are mainly environmental. Although it is difficult to establish a clear relationship between obesity and physical activity, a more sedentary life creates a higher risk of being overweight. The large number of hours spent watching TV, in front of computers and playing with video games are associated with child and adult obesity. Changes in eating behaviours have also significantly contributes to this phenomenon. It will be important for future research efforts to investigate the role of the food and leisure industry in contributing to the health problems by creating the incentives to lead a more sedentary and unhealthy life.

The degree to which countries protect their population against the emerging modern illnesses varies. The systems in place to help families cope with increasing challenges to work–life balance, work–place occupational health initiatives addressing the mental health problems related to the changing nature of work and the workforce, and overall economic stability and social security will indeed play an important role in dealing with threats to public health.

It is important to note that while surveys of time use are important in investigating the differences within and across countries in choices people make, more research is needed in identifying the links, and direction of a causal relationship, between time use and health. Also, it would be interesting for future research to incorporate questions about health seeking behaviours and risky behaviours in time use surveys.

The Health Behaviour in School-aged Children study is the main source of data for analysing trends in physical activity, sedentary behaviours, eating habits and obesity at the international level in young population. However, indicators of physical activity and obesity should be treated with caution because data collection methods may vary, thus making comparisons across countries and over time difficult.

Measuring physical activities among children is not straightforward and comparison across countries are complicated by the role that physical activity plays at school and the amount of free time during school day dedicated to non–organized activities. For example, in Denmark two hours per week is the minimum provision of physical education and some schools offer an extra hour of swimming per week. In Finland, children aged 7–15 must undertake two hours per week of physical education. In Greece, physical education is

compulsory but the amount of hours varies depending on the age, with a minimum of two hours per week. In Norway children must do sessions of 45 minutes each of physical education but the number of sessions (minimum two), as in Greece, varies with the age of the children. In Spain, from age 12, schools provide 50 minutes of physical activity twice per week. In Sweden, the legal minimum number of hours for physical education is one, but schools usually offer more (Logstrup 2001). Moreover, environmental characteristics such as patterns of travelling to schools, availability of leisure facilities and difference in climate might cause geographical variations (WHO 2004b).

Measure of weight and height are self-assessed in the Health Behaviour in School-aged Children Survey, and likely underestimate BMI because of subjective perception of overweight, dissatisfaction with the body size and feeling of insecurity. Moreover, a large proportion of BMI data is missing in particular in Belgium (French part), Lithuania, Ireland, England, Malta and Scotland (the last three countries are among the ones with the highest number of obese young people). From a comparison between children who report and do not report data on height and weight, it appears that the latter are less likely to come from high-socioeconomic groups, to be physically active, to consume fruit and vegetables; and are more likely to feel the need to lose weight (WHO 2004b).

Moreover, it is not an easy task to establish a clear relationship between time use and health. The Time use Eurobarometer survey is rather limited and narrow in its scope; it does not include health questions and covers only individuals over 15 years old, therefore missing a considerable amount of information on childhood. In addition to measurement issues, there are problems with comparability. Furthermore, investigations of the relationship between different aspects of time use and health at the macro level, through surveys, may miss the individual effects. This is especially important in identifying causal relationships across the life course. In addition to the descriptions on time use, we need to know more about incentives and the factors behind each individual behaviour.

At present, little can be done to answer these questions. A redesign of time use and health surveys to address the above limitations is necessary to fill these gaps.

Overall there is evidence to suggest that lifestyles have changed over the past few decades across Europe. These changes are associated with important health implications. Specifically, the ageing population and the increase in atypical households and the 'pivot generation', the mechanisation of the workplace with an increased reliance on mental, as opposed to manual labour, reduced physical activity and propagation of the information economy, has contributed to an increase in the prevalence of mental health problems and obesity to the extent that they are explaining an increasing share of the burden of disease in Europe.

References

- Abu Omar, K., Rutten, A., and Lehtinen, V. (2004a). Mental health and physical activity in the European Union. *Social and Preventive Medicine* 49: 301–309.
- Abu-Omar, K., Rutten, A., and Robine, J.M. (2004b). Self-rated health and physical activity in the European Union. *Social and Preventive Medicine* 49: 235–242.
- Adseara', A. (2003). Changing fertility rates in developing countries. The impact of labour market institutions. *J Pop Econ* 17: 17–43.
- Aliaga, C., and Winqvist, K. (2003). How women and men spend their time: Results from 13 European countries, Eurostat: Population and Social Conditions.
- Ariza, A., de la Rica, S., and Ugidos, A. (2005). The effect of flexibility in working hours on fertility: a comparative analysis of selected European countries. *Public Finance and Management* 5(1): 110–151.
- Arkerstedt, T., A. Knutsson, P. Westerholm, T. Theorell, L. Alfredsson, G. Kecklund (2004). "Mental fatigue, work and sleep. *J Psychosom Res* 57: 427–433.
- Artazcoz, L., Borrell, C., and Benach, J. (2001). Gender inequalities in health among workers: the relation with family demands. *J Epidemiol Community Health* 55: 639–647.
- Artazcoz, L., Borrell, C., Benach, J., Cortes, I., and Rohlfs, I. (2004). Women, family demands and health: the importance of employment and socio-economic position. *Soc Sci Med* 59: 263–274.
- Artazcoz, L., L. Artieda, C. Borrell, I. Cortes, J. Benach, and V. Garcia (2004). Combining job and family demands and being healthy: what are the differences between men and women? *Eur J Public Health* 14: 43–48.
- Barengo, N. L., Hu, G., Lakka, T.A., Pekkarinen, H., Nessinen, A., Tuomilehto, J. (2004). Low physical activity as a predictor for total and cardiovascular disease mortality in middle-aged men and women in Finland. *Eur Heart J* 25: 2204–2211.
- Bartley, M., Sacker, A., Firth, D., and Fitzpatrick, R. (1999). Social position, social roles and women's health in England: changing relationship 1984–1993. *Soc Sci Med* 48: 99–105.
- Bettio, F., and Plantenga, J. (2004). Comparing Care Regimes in Europe. *Fem Econ* 10(1): 85–113.
- Biddle, S., Sallis, J., and Cavill, N. (1998). Policy framework for young people and health-enhancing physical activity. In S. Biddle, J. Sallis, and N. Cavill, eds. *Young and active? Young people and health-enhancing physical activity – Evidence and Implications*. London, Health Education Authority.
- Bonke, J., and Gerstoft, F. (2005). Sress, Time use and gender. *The National Danish Institute of Social Research Working Paper*.
- Börsch-Supan, A., Brugiavini, A., Jürges, H., Mackenbach, J., Siegrist, J., Weber, G., (2005). *Health, Aging and Retirement in Europe – First Results from the Survey of Health, Aging and Retirement in Europe*. Mannheim: MEA, 2005.
- Breedveld, K. (2004). Time over the course life: Outcomes of the Eurobarometer 60.3 for the 15 EU-countries as per December 2003. Brussels, The Hague.
- Bucksch, J. (2005). Physical activity of moderate intensity in leisure time and risk of all cause mortality. *Br J Sports Med* 39: 632–638.
- Chandola, T., Martikainen, P., Bartley, M., Lahelma, E., Marmot, M., Michikazu, S., Nasermoaddeli, A., and Kagamimori, S. (2004). Does conflict between home and work

explain the effect of multiple roles on mental health? A comparative study of Finland, Japan, and the UK. *Int J Epidemiol* 33: 884–893.

- Crimmins, E. M., Hayward, M.D. (2004). Workplace characteristics and work disability onset for men and women. *Soz Praventivmed* 49(2): 122–31.
- Dunn, A. L., Trivedi, M.H., and O'Neil, H.A. (2001). Physical activity dose response effects on outcomes of depression and anxiety. *Med Sci Sport Exerc* 33 (Suppl): S587–S597.
- Elley, C. R., Kerse, N., Arroll, B., and Robinson, E. (2003). Effectiveness of counselling patients on physical activity in general practice: cluster randomised controlled trial. *BMJ* 326: 793–799.
- Engelhardt, H., Kogel, T., and Prskawetz, A. (2004). Fertility and women's employment reconsidered: a macro-level time-series analysis for developed countries, 1960–2000. *Popul Stud* 58(1): 109–120.
- EUFIC (2003). Physical activity and health: taking a closer look at the other side of energy balance.
- European Agency for Safety and Health at Work (2000). *Research on work-related stress*. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (2003). Physical activity, European Commission: Special Eurobarometer.
- European Commission (2004). *The citizens of the European Union and sport*, European Commission: Special Eurobarometer.
- European Foundation for the Improvement of Living and Working Conditions (2003). *Working-time preferences and work-life balance in the EU: some policy considerations for enhancing the quality of life*.
- European Foundation for the Improvement of Living and Working Conditions, (2005a). *Perception of living conditions in an enlarged Europe*.
- European Foundation for the improvement of Living and Working Conditions (2005b). *Working and living in an enlarged Europe*.
- Eurostat (2003). Time use at different stages of life: results from 13 European countries. European Commission Working paper and studies. Population and Social Conditions.
- Eurostat (2004). How Europeans Spend Their Time – Everyday Life of Women and Men, European Commission: http://epp.eurostat.cec.eu.int/cache/ITY_OFFPUB/KS-58-04-998/FR/KS-58-04-998-FR.PDF.
- Eurostat (2005). Comparable time use statistics: national tables for 10 European countries. European Commission Working paper and studies. Population and Social Conditions.
- Fahey, T., and Speder, Z. (2004). Fertility and family issues in an enlarged Europe. European Foundation for the Improvement of Living and Working Conditions.
- Fahey, T. (2004). Employment, education and skills. In *Quality of life in Europe*. European Foundation for the Improvement of Living and Working Conditions.
- Fisher, K. (2003). Use of time and quality of life. Quality of Life, Illustrative Report, European Foundation for the Improvement of Living and Working Conditions.
- Gabriel, P., Liimatainen, M-R. (2000). *Mental health in the workplace*. Geneva, International Labour Organization.

- Godin, I., Kittel, F. (2004). Differential economic stability and psychosocial stress at work: associations with psychosomatic complaints and absenteeism. *Soc Sci Med* 58(8): 1543–53.
- Gonzalez, L. (2004). *Single mothers and work*. Bonn, Germany, Institute for the Study of Labor.
- Hammersmith, D., and Lee, J. (2004). Stressed out on four Continents: Time crunch or Yuppie Kvetch? *NBER – Working Paper*, No. 10186.
- Hancoz, R. J., Milne, B.J., and Poulton, R. (2004). Association between child and adolescent television viewing and adult health: a longitudinal birth cohort study. *Lancet* 364: 257–262.
- Houtman, I. L. D. (2004). *Work-related stress*. Dublin, European Foundation for the Improvement of Living and Working Conditions: 33.
- Hu, F.B., Li, T.Y., Colditz, G.A., Willett, W.C., Manson, J.E. (2003). Television watching and other sedentary behaviours in relation to risk of obesity and type 2 diabetes mellitus in women. *JAMA* 289(14): 1785–1791.
- Hutton, S., and Hirst, M. (2001). Informal care over time. *Research works*.
- Ivanov, I. (2005). *Mental health and working life*. WHO Ministerial Conference on Mental Health Briefing Paper. Copenhagen, WHO Regional Office for Europe.
- International Obesity task force and the European association for the Study of Obesity (2002). Obesity in Europe: the case for action.
- International Obesity task force and the European association for the Study of Obesity (2005). EU Platform on diet, physical activity and health.
- Jansees, I., Katzmarzyk, P.T., Boyce, W.F., Vereecken, C., Mulvihill, C., Roberts, C., Currie, C., Pickett, W., and The Health Behaviour in School-Aged Children Obesity Working Groups (2005). Comparison of overweight and obesity prevalence in school-aged youth from 34 countries and their relationships with physical activity and dietary patterns. *Obesity Review* 6: 123–132.
- Johnson, N. E., Christenson, B.A. (1998). Socio-demographic correlates of multiple causes of death: real or artifactual? *Popul Res Policy Rev* 17: 261–74.
- Karasek, R. A. (1990). “Lower health risk with increased job control among white-collar workers.” *J Organizational Behav* 11: 171–85.
- Kautiainen, S., Koivusilta, L., Lintonen, T., Virtanen, S.M., Rimpela, A. (2005). Use of information and communication technology and prevalence of overweight and obesity among adolescent. *Int J Obes* 29(8): 925–933.
- Keck, W. (2004). Work life balance. In *Quality of life in Europe*. European Foundation for the Improvement of Living and Working Conditions.
- Klumb, P. L., and Lampert, T. (2004). Women, work, and well-being 1950–2000. *Soc Sci Med* 58: 1007–1024.
- Kuepper-Nybelen, J., Lamerz, A., Bruning, N., Hebebrand, J., Herpertz-Dahlmann, B., and Brenner, H. (2005). Major differences in prevalence of overweight according to nationality in preschool children living in Germany: determinants and public health implications. *Arch Dis Child*;90:359–363
- Kuper H, Marmot ,M. (2003) “Job strain, job demands, decision latitude, and risk of coronary heart disease within the Whitehall II study”. *J Epidemiol Community Health*, 57(2):147–53.

- Lee, C. D., Folsom, A.R., and Blair, S.N. (2003). Physical activity and stroke risk. *Stroke* 34: 2475–2482.
- Lee, I. M., and Skerreyy, P.J. (2001). Physical activity and all-cause mortality: what is the dose-response relation? *Med Sci Sport Exerc* 33(6 Supp): S459–S471.
- Livingstone, S., and Bovill, M. (2001). *Children and their changing Media Environment: A European Comparative Study*. London, Lawrence Erlbaum Associates, Publishers.
- Logstrup, S. (2001). *Children and young people –The importance of physical activity*. Brussels, European heart health Initiative.
- Malina, R. (2001). Tracking of physical activity across the lifespan. President’s Council on Physical Fitness and Sport. *Research Digest*, Series 3, No.14.
- Marshall, S. J., Biddle, S.J.H., Gorely, T., Cameron, N., and Murdey, I. (2004). Relationship between media use, body fitness and physical activity in children and youth: a meta analysis. *Int J Obes* 28(10): 1238–1246.
- McDaid, D., Curran, C., Knapp, M. (2005). Promoting mental well-being in the workplace: a European policy perspective. *Int Rev Psychiatry* 17(5): 1–9.
- Mestdag, I., and Vandeweyer, J. (2005). Where has Family Time Gone? In Search of Joint Family Activities and the Role of the Family Meal in 1966 and 1999. *J Fam Hist* 30: 304–232.
- Mestdag, I. (2005). Disappearance of the Traditional Meal: temporal, social and spatial deconstruction. *Appetite* 45(1): 62–74.
- Michie, S., Williams, S. (2003). Reducing work related psychological ill health and sickness absence: a systematic literature review. *Occup Environ Med* 60(1): 3–9.
- Netz, Y., Becker, B.J., and Wu, M.Y. (2005). Physical activity and psychological well-being in advanced age: a meta-analysis of international studies. *Psychol Aging* 20: 272–284.
- Neumark-Sztainer, D., Wall, M., Story, M., and Fulkerstone, J.A. (2004). Are family meal patterns associated with disordered eating behaviours among adolescents? *J Adolesc Health* 35: 350–359.
- Noor, N. M. (2004). Work-family conflict, work- and family- role silence, and women's well-being. *J Soc Psychol* 144(4): 389–405.
- Nordenmark, M. (2004). Multiple social roles and well-being. *Acta Sociol* 47(2): 115–126.
- Nordenmark, M. (2004). Balancing work and family demands. Do increasing demands increase strain? A longitudinal study. *Scand J Public Health* 36(6): 450–455.
- OECD (2001). Balancing work and family life: helping parents into paid employment. *OECD Employment Outlook*: 129–166.
- OECD. Presentation: www.oecd.org/dataoecd/53/52/31457987.pdf.
- Oguma Y., Paffenbarger, R.S., and Lee, I.M. (2002). Physical activity and all cause mortality in women: a review of the evidence. *Br J Sports Med* 36: 162–172.
- Paoli, P. (2003). Monitoring the changing organisation of work: a European perspective. *Soz Praventivmed* 48: 349–350.
- Parsons, T.J., Power C., Loran S., Summerbell C.D. (1999). Childhood predictors of adult obesity: a systematic review. *Int J Obes Relat Metab Disord*, 23 (S8): S1–S107.
- Pate, R., Trost S., Williams C. (1998). Critique of existing guidelines for physical activity in young people. In Biddle, S., J. Sallis, N. Cavill, eds. *Young and active? Young people*

and health-enhancing physical activity – Evidence and Implications. London, Health Education Authority.

- Pickard, L. (2004). *Caring for Older People and Employment*. London, Audit Commission.
- Reilly, J. J., Armstrong, J., Dorosty, A.R., Emmett, P.M., Nes, A., Rogers, I., Steer, C., Sheriff, A., for the Avon Longitudinal Study of Parents and Children Study Team (2005). Early life risk factors for obesity in childhood: cohort study. *BMJ*.
- Ross, E., Burstrom, B., Saastamoinen, P., and Lahelma, E. (2005). A comparative study of the patterning of women's health by family status and employment in Finland and Sweden. *Soc Sci Med* 60: 2443–2451.
- Rutten, A., Bel T., Kannas, L., von Lengerke, T., Luschen, G., Rodriguez, Diaz J.A., Vinck, J., van der Zee, J. (2001). Self reported physical activity, public health, and perceived environment: results from a comparative European study. *J Epidemiol Community Health* 55: 139–146.
- Rutten, A., Vuillemin, A., Ooijendijk, W.T.M., Schena, F., Sjostrom, M., Stahl, T., Vanden Auweele, Y., Welshman, J., and Ziemainz, H. (2002). Physical activity monitoring in Europe. The European Physical Activity Surveillance System (EUPASS) approach and indicator testing. *Public Health Nutr* 6(4): 377–384.
- Rutten, A., and Abu-Omar, K. (2004). Prevalence of physical activity in the European Union. *Social and Preventive Medicine* 49: 281–289.
- Rutten, A., and Abu-Omar, K. (2004). Perception of environmental opportunities for physical activity in the European Union. *Social and Preventive Medicine* (49): 310–317.
- Saraceno, C., and Olagnero, M. (2004). Household structure and family relations. In *Quality of life in Europe*. European Foundation for the Improvement of Living and Working Conditions.
- Schnohr, P., Scharling, H., and Jensen J.S. (2003). Changes in leisure-time physical activity and risk of death: an observational study of 7,000 men and women. *Am J Epidemiol* 158: 639–644.
- SOCCARE (2003). *Families, Work and Social Care in Europe: A qualitative study of care arrangements in Finland, France, Italy, Portugal and the UK*. SOCCARE Project Report 6. T. Kroger.
- Spritzer, D. A. (2004). Obesity epidemic migrates east. *CMAJ*, 171 (10).
- Stettler, N., Signer T.M., and Suter P.M. (2004). Electronic games and environmental factors associated with childhood obesity in Switzerland. *Obesity Research* 12(6): 896–903.
- Swan, J., and Cooper C.L. (2005). *Time, health and family: what working families want*. London: Working Families.
- Virtanen, P., Vahtera, J., Kivimaki, M., Pentti, J., Ferrie, J. (2002). Employment security and health. *J Epidemiol Community Health* 56(8): 569–74.
- Warren, T. (2004). Working part-time: achieving a successful "work-life" balance? *Br J Sociol* 55(1).
- Williams, J.M. (1999) Sports-related injuries among Scottish adolescents aged 11–15. *Br J Sports Med*, 32:291–296.
- Worthman, C. M., Mustillo, S., Costello, E.J. (2003). *Time demands and child mental health: the role of family characteristics and stressful life events*. Atlanta, The Emory Center for Myth and Ritual in American Life.

- WHO (2002). World Health Report 2002.
- WHO (2004a). *Young people's health in context*. Health Behaviour in School-aged Children (HSBC) study: international report from the 2001/2002 survey. Health Policy for Children and Adolescent, No,4.
- WHO (2004b). Global strategy on diet, physical activity and health. Fifty-seventh World health Assembly, A57/9.
- WHO (2004c). Food and health in Europe: a new basis for action. WHO Regional Publications, European Series, NO. 96.
- WHO (2005). The challenge of obesity in the WHO European region. Fact sheet EURO/13/05. Copenhagen, Bucharest, 12 September 2005.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

Cultural, political, economical, social, and health differences are evident among the EU Member States. Examinations of health trends indicate persistent differences in life expectancy, healthy life expectancy, DALY and causes of mortality especially among the EU-15 and the new Member States, and also within countries among social groups.

Life expectancy has steadily improved in all EU-15 Member States since 1970, but this improvement was not observed among the new Member States. The economic and political transition that has followed the fall of the Soviet Union was associated with an erosion of social norms, social cohesion and law and order; and it has caused a decline in the health status of the population (men especially) in particular in the countries of central and eastern Europe. In the 1990s, death rates among middle-aged men were about 2.5 times higher in CEE than in western Europe. Since the middle 1990s, health status has started improving again especially in Poland, the Czech Republic, Hungary and Slovakia; but the health gap between the east and the west is still persistent. The populations of the EU-15 spend, on average, 70 years in good health; 7 years more than in new Member States, and 11 years more than in Turkey.

The health divide existing between the EU-15 and countries in central and eastern Europe can be explained by disease patterns, their underlying biological risk factors such as smoking, alcohol consumption and obesity, and the roots of these risk factors. The main contributors to differences in health indicators between east and west Europe are injuries, mainly road traffic accidents, and vascular diseases for people below age 60. Mortality rates for diseases of the circulatory system are over twice as high in the new Member States than in the EU-15, and more than three times higher in Estonia, Hungary and Latvia.

Equal access to timely and effective health care interventions significantly reduces mortality and contributes to a reduction in health inequalities. Since 1970, about 25% of the difference in mortality rates between east and west Europe has been attributed to inadequacies in medical care; the decline in avoidable mortality has been slower in the east than the west of Europe. Improvements in treatable mortality were made in many countries, especially in the Czech Republic, Hungary and Slovenia, in large part because of a decline in cerebrovascular disease through improved control of hypertension. However, other countries have shown little (Latvia, Lithuania, and Bulgaria) or no improvements (especially Romania among men).

Although all the health indicators show a large gap between the EU-15 and the new Member States, the magnitude of the gap and the relative position of each country varies

with the index used. Indices such as life expectancy at birth, health life expectancy, disability adjusted life expectancy (DALY), and avoidable mortality paint a different picture. For example, when comparing the DALY with avoidable mortality, France's ranking moves from the 3rd (DALY) to the 5th (amenable mortality); for Greece to the 7th to the 12th; for the UK from the 10th to the 18th.

Large variations in health status and mortality rates for different causes are observed not only across countries but also within countries. Income inequality is associated with lower life expectancy and higher mortality both in the west and the east, but evidence suggests that in the last 20–30 years inequalities in health across socioeconomic groups and regions have widened more sharply in eastern than in western Europe. A social gradient favouring the better-off is seen for all causes of mortality and especially for cardiovascular mortality, stroke mortality and among men for respiratory diseases. Some of these inequalities in health can be explained by the inequitable distribution of risk factors such as smoking and obesity in the society. Unhealthy housing and unemployment also contribute to differences in life expectancy and health status, in general, among socioeconomic groups.

Socioeconomic factors such as income and education influence also impact access to health care even among countries that have removed financial barriers. The most significant inequalities are seen in specialist care, such that poorer members of society may not be receiving the health care they need. Moreover, in many CEE countries, barriers to accessing health care are more serious because of resource shortages and quality concerns forcing patients to pay significant, often informal, charges.

The burden of mental health problems in Europe is significant, and growing, with economic costs estimated at 3–4% of GNP. About 25% people experience an episode of mental illness during their lifetime and often mental health is associated with social deprivation and social exclusion. Yet, little has been done to tackle this problem. Only recently, various countries of the EU have started designing mental health policies but the focus is mainly on rehabilitation and treatment instead of prevention and mental health promotion. Deinstitutionalisation has occurred over the last 30 years, therefore many countries are witnessing increasing proportion of community-based care for people with mental health problems, although less so in CEE countries. The stigma of mental illness is an enormous barrier to action in many countries. There is, therefore, a need to destigmatize mental illness, empower service users, increase funding for mental health care and promotion, and coordinate efforts within countries and at the EU level.

National, regional or broader public health policies are the fundamental instrument governments have to improve health status, to tackle socioeconomic inequalities in health between and within countries and to guarantee equal access to health care to all citizens. National public health policies exist, or are under development, in most countries; and in new Member States and Candidate Countries, national policies have been influenced by the WHO Health for All guidelines. Reducing inequalities in health is a goal of the national or regional public health or broader health policy in most countries; however there are differences in the extent these policies are formally defined and developed, and both

monitoring and evaluation is often limited. The most comprehensive strategies addressing inequalities reduction can be seen in the United Kingdom, Ireland, Sweden, and in Netherlands. The development of effective strategies are often jeopardized by the limited availability of data on health and health inequalities, the lack of political will, and the presence of fiscal pressures limiting the resources available for implementing strategies.

To effectively reduce health inequalities a multi-sectoral approach is needed. However, few countries have developed formal mechanisms for different sectors to collaborate in their policy efforts. Target-setting as a policy-making tool also varies across the EU, with some countries, namely the United Kingdom, Ireland, the Netherlands and Finland, making much more use of quantitative, measurable health targets than others, that simply rely on the general expressions of policy goals. Overall, more needs to be done across the EU in developing coherent and effective strategies to reduce health inequalities. There is a need to greatly increase the evidence base of what policies are achieving a reduction in inequalities, as pioneered in the Netherlands at local level, and to communicate this research at an international level.

Among national policies we have decided to dedicate a special attention to screening practices across Europe. Screening programmes and practices vary widely across European countries, and this is the result of differing structures and financing of health services and differing demographic features of the population. More specifically, a population register that allow patients to be recalled and followed up is often missing; and a single national body for reviewing tests and practice is present only in a few countries. Key objectives to strive for include having one national body per country responsible for practice and policy, scrupulous adherence to the long established screening criteria, accurate population registers, greater uniformity of access across different areas of a given country and across different socioeconomic groups and sound research evidence on which to base practice. The wide variation in practice in Europe illustrates the complexity of screening, the need for greater consideration to be paid to the effectiveness and evaluation of screening practices and the necessity to involve participating individuals in decisions and to give them clear and understandable information.

A special focus of this report is on time use. Time use surveys offer the possibility to unveil differences in the labour market, cultural and leisure activities, physical activity, and household tasks within and across countries. Lifestyles have changed in the last two decades. Men and women are more likely to be both engaged in the labour market and household life. Cars are commonly used to cover even short distances, with a reduction in the number of people walking or cycling to schools or offices. Patterns of physical activity vary between men and women and across age groups and countries. Eating behaviours have also changed: the time dedicated to lunch has decreased in many European countries and fast-food has become a preferred substitute of home-made, healthy food. Only by understanding these changes it is possible to understand and tackle the increasing severity of diseases of the 'modern age', obesity and mental health.

Surveys of time use are important in investigating the differences within and across countries in choices people make. However, more research is needed in identifying the

links, and direction of a causal relationship, between time use and health. At present, little can be done to answer these questions due to methodological limitations of time use and health surveys.

8.1 Recommendations for surveys

In compiling this report, we made use of numerous existing surveys of the European region. Through this experience we have identified several limitations with these surveys, and can therefore propose a series of recommendations. These recommendations can be categorised into four areas: (1) scope; (2) comparability; (3) motivations of behaviours; and (4) accessibility.

Scope of surveys

The scope of many surveys focus is limited by excluding certain population groups or by focusing on specific subject areas. By doing so, we are limited in the extent we can understand the issue from a broader perspective.

Among time use surveys, questions should be included on health seeking behaviours (e.g. health care use, health prevention activities), and risky behaviours (e.g. smoking, drinking, physical exercise). The Time Use Eurobarometer survey is further limited in scope, as it covers only individuals over 15 years old, therefore missing a considerable amount of information on childhood. Indeed, most surveys neglect adolescents and children – however below a certain age parents/caregivers could serve as proxies.

The special Eurobarometer survey on physical activity does not include anthropomorphic data – height and weight – in order to calculate obesity and overweight in addition to information about other risk factors, such as smoking and alcohol consumption. Among individuals who are overweight or obese, engaging in physical exercise is vital for health improvement and illness prevention. If there was increased communication and collaboration among the organizations funding, planning, and producing the surveys, it would be possible to increase the samples reached and broaden the scope in order to capture multiple dimensions of the topic of interest. Further limiting potential research is the fact that it is not possible to combine data from different Eurobarometer surveys.

Also, although there have been many epidemiological studies on the prevalence of mental disorders across Europe there has been little work undertaken to synthesise such information at an EU level.

Comparability

Comparability is a major challenge when conducting surveys across countries. For instance, in time use surveys the subjectivity of the questions (e.g. those asking for ratings on the

“difficulty” of certain tasks), and extent to which cultural differences may influence the results makes understanding differences across countries in lifestyle and time use difficult.

When comparing epidemiological data, further issues arise. Data collection methods need to be standardised. In light of the increasing rates of overweight and obesity across Europe, there is growing interest in measuring these trends. However, measures of height and weight, although seemingly straightforward, are often inaccurate and incomparable due to different methods of data collection. With standardised methods and appropriate training of interviewers, these problems could be minimised. Properly planned and scientifically sound epidemiological surveys are needed in order to capture the true evolution of the obesity ‘epidemic’.

For example, the Health Behaviour in School-aged Children study is the main source of data for analysing trends in physical activity, sedentary behaviours, eating habits and obesity at the international level in young populations. However, measuring physical activity among children is not straightforward and comparison across countries are complicated by the role that physical activity plays at school and the amount of free time during the school day dedicated to non-organized activities. Moreover, environmental characteristics such as patterns of travelling to school, availability of leisure facilities and difference in climate might cause geographical variations and different interpretations of the questions (WHO 2004). Important issues are present also when interpreting data on BMI. Measures of weight and height are self-assessed in the Health Behaviour in School-aged Children Survey, and underestimation of real BMI is possible because of subjective perception of overweight, dissatisfaction with the body size and feeling of insecurity. Moreover, a large proportion of BMI data is missing in particular among countries with the highest proportion of obese young people, and this missing data are more likely to come from children from high socioeconomic groups, to be physically active, to consume fruit and vegetables; and are more likely to feel the need to lose weight (WHO 2004).

A recent report of health and productivity surveys in ten countries argues that increased transparency on survey methodology is needed, for example in regards to sampling weights and processing of non-response, in order to adequately assess quality and comparability (Barnay et al. 2005). Furthermore, they found that in the surveys included in their review, the existing health indicators are for the most part non-comparable. Questions may include common issues but are not framed in the same way. For instance, questions about risk factors, such as alcohol consumption, may use differing reference periods (ranging from “in your lifetime” to “in the last 7 days”). Regarding smoking, while most surveys can distinguish between current smoking and non-smoking status, few surveys include information on exposure to second-hand, or environmental, smoke.

What motivates behaviour?

Researchers and policy-makers alike are interested in tracking trends in behavioural patterns, however without understanding the reasons behind these changes, it is difficult to know where to direct future research and policy decisions. For example, in addition to descriptive information on time use, it is important to know more about incentives and the

factors behind individual behaviours: What motivates individuals to exercise? What brings them to lead a more sedentary life and unhealthy behaviour? What is the role of the environment, social support and family and friends on behaviours?

Access

The surveys coordinated by the European Commission provide a very useful tool for research. However, it would be incredibly valuable to have access to micro-level data. Some good examples of accessible are SHARE – the Survey on Health Aging and Retirement in Europe, and the European Social Survey.

Furthermore, investigations of the relationship between different aspects of time use and health at the macro level, through surveys, may miss the individual effects. This is especially important in identifying causal relationships across the life course. It has been shown that factors in childhood play a major role in determining lifestyle and behaviours in adulthood. For example, obese children are more likely to become obese adults; the analysis of the impact of physical activity and diet on obesity should be done at the individual level.

References

- Barnay, T., Jusot, F., Rochereau, T., Sermet, C. (2005) Comparability of health surveys in Europe: France, United Kingdom, Russia, Poland, Czech Republic, Germany, Greece, Italy, Spain and Sweden, International Longevity Centre. Paris: IRDES.
- WHO (2004b). Global strategy on diet, physical activity and health. Fifty-seventh World health Assembly, A57/9.