



Investment for health:
a discussion of the role
of economic and social determinants



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The Venice Office was set up to advise Member States in the WHO European Region on understanding and acting upon the social and economic determinants of health. There is increasing evidence that economic wealth and people's health are closely linked. Social and economic determinants play a major role in influencing the health of populations, whether through poverty, employment, education, housing, or the many other factors that shape people's daily lives. The Venice Office works in three main areas:

- Research and development - review, monitoring and dissemination of research on social and economic determinants and their impact on the patterns of ill health.
- Country services - providing services to European Member States to increase their capacity to invest for health.
- Information material - developing and disseminating evidence through specially designed information about knowledge and know-how in the area of social and economic determinants.

Abstract

This is a collection of papers from an interdisciplinary workshop on “the promotion of wellbeing: options and obstacles”, held at Anacapri, Italy, on 25 September 2000. The workshop focused on priority options for and obstacles to the promotion of population health through public policies and their links to the private and nongovernmental sectors. Three of the four papers presented at the workshop are given here. They identify factors and forces that should be taken into account in formulating a contemporary strategy for improving population health in Europe. They focus on the social and economic determinants of population health and provide some new insights on how to invest for health. The papers focus on key considerations and stimulate thinking about deficits in knowledge, current shortcomings in health development approaches, potential obstacles to making positive changes and ways to overcome them.

Keywords

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Foreword

Health is determined by the interplay of a wide range of factors. In today's Europe, social, economic, cultural and environmental changes directly affect the conditions that determine the health of a population. It is well known that using resources in ways that secure health and wellbeing brings additional social and economic benefits for a whole society. This understanding, however, is not systematically applied in health policy development in the WHO European Region. WHO has a role in both advocating investment for health and entering into purposeful cooperation with countries and agencies that recognize the value of placing health further into the mainstream of the development agenda of European countries.

To increase our capacity to assist European Member States in promoting the health of their populations, the WHO Regional Office for Europe is emphasizing the importance of the social and economic determinants of health. This is the primary focus of the new WHO European Office for Investment for Health and Development, recently established in Venice, in cooperation with the Government of Italy and that of the Veneto Region. This publication is one of the first products of this new Office. It reviews aspects of the social and economic determinants of health by focusing on specific contexts in western and eastern Europe.

The WHO Regional Office for Europe strongly emphasizes the need for the systematic collection of evidence on the determinants of health and their implications for policy. I am sure that publications such as this one will be instrumental in broadening the debate on how to invest for health in today's Europe.

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Introduction

Lowell S. Levin and Erio Ziglio

The WHO Regional Office for Europe has begun an effort to rebalance its approach to the promotion of population health. To this purpose it has established the WHO European Office for Investment for Health and Development, based in Venice, Italy. There are two central aspects of this effort.

The first is the recognition that health is powerfully affected by both individual behaviour and socio-economic conditions. The latter often provides or denies opportunities for individuals to behave in a health promoting way. Until recently, however, the social and economic determinants of health, while affirmed in diverse and abundant research literature, have only rarely been the focus of population health initiatives. The population health impact of housing, agriculture, education, pension planning, transport, the environment, tourism, employment, and other non-health policy sectors now must be accounted for. The vision of investing for health and equitable and sustainable development needs to be pursued in practice. This requires intersectoral collaboration. Thorough analyses of public policies as they affect population health are needed in both European countries and elsewhere. These analyses need to isolate attributes that can be adjusted to promote health, and make changes compatible with the primary remit of the policy sectors involved. The same principle holds true for collaboration with nongovernmental organizations (NGOs) and the private sector. Intersectoral collaboration should be an ideal at all levels of governance and social action: local, national, regional and global.

The second aspect of the WHO effort complements its renewed emphasis on intersectoral collaboration: to ensure that choices among investments to promote the health of the population be given priority for their potential contribution to social and economic development. The goal is not to seek health as an isolated state, but to acknowledge that health must be more richly characterized as general wellbeing and thus a factor both influencing and influenced by the quality of and access to economic and social resources. This makes strategic planning for population health interventions substantially more complex. Multifactorial realities are made more visible and the need for multidisciplinary (multisectoral) participation, more compelling.

In order to promote the health of the population, partnerships for action must be considered, including collaboration with NGOs and private enterprises. The political, economic social, and cultural landscapes surrounding many non-health policy sectors are unfamiliar territory to most health ministries. As a consequence, the prospects for successful negotiations to enhance the impact on health in those policy areas are limited by lack of an inventory of incentives for change. There is also insufficient

experience with acceptable and effective negotiation styles. Sharing goals and resources is therefore necessary and will require unreserved trust and patience, as there is no other way adequately to explore the overlap between health disciplines. In sum, health ministries will face new challenges in building multisectoral partnerships requiring both analytic and operational skills, in addition to a new work ethic that accepts compromise, shared responsibility and the uncertainties of intersectoral collaboration.

Background of the investment-for-health approach

In the mid-1990s, the WHO Regional Office for Europe established a programme on investment for health. The overall rationale was to stimulate and oversee the development of the investment strategy to promote and sustain the health of the population from concept to operational reality. As such the investment for health approach was developed as one major attempt to implement the concept and principles of health promotion as agreed in the Ottawa Charter for Health Promotion. It was clear from the outset that this would be a process involving consultation with policy scientists, economists, epidemiologists, social and behavioural scientists, legislators, service administrators, the mass media, the private sector and, perhaps most critically, representatives of the public at large.

The result was the Verona initiative (phase I), a series of three annual pan-European meetings held in Verona, Italy in 1998–2000. The first meeting, on 14–17 October 1998, defined the characteristics of the systems that support investment for health. This meeting focused on helping countries, regions and communities understand the prerequisites for investment for health. The second meeting, from 29 September to 2 October 1999, established the characteristics of decision- and policy-making processes aiming to facilitate the wellbeing of the population. Exploratory discussions reframed the understanding of health as inextricably tethered to social and economic development and emphasized the recognition of this interplay between diverse interests as key in promoting population health. Finally, on 5–9 July 2000, the third meeting of the Verona initiative (phase I) culminated in the Verona Challenge, a declaration of specific responsibilities for and action on health investments aimed to rally and galvanize governments and NGOs, industry and commerce, civic society and the media to a plan of action.

The three Verona meetings set the stage for a major WHO commitment to a greater programmatic emphasis on the investment-for-health strategy. In addition, the WHO European Office for Investment for Health and Development has been planned for the express purpose of assisting WHO European Member States to build their capacity to put the health investment process to work. The Venice Office is envisaged to be a European resource providing learning opportunities within the context of scientific reviews, demonstration projects and associated workshops. It will emphasize

anticipating the barriers to achieving appropriate investment decisions, as well as mediating between different interest groups and identifying enabling factors to mobilize political support for health investments. Given the pioneering nature of investing in health, the learning curve will be steep for all involved, as each barrier represents an opportunity to learn about the investment process. WHO hopes that bringing together seemingly disparate groups of health professionals, to share insights in developing a clear and unified approach to health investment, will accelerate this learning process.

The need now is to move beyond concept and theory to considerations of implementation to unearth what is not understood about health investing. What does experience teach about how to avoid and overcome barriers and which procedural alternatives are worth exploring? Above all, it is necessary to recognize that investment for population health, based on the evidence of the social and economic determinants of health, is a critical contributor to equitable social and economic development. In addition, some corollary issues need further clarification in operational terms. First consideration must be given to approaches in building private–public coalitions. By nurturing social capital and mobilizing grassroots constituencies for change, one can more effectively build coalitions between the public and private sectors for health promoting policies with the goal of reducing or compensating for the negative health impact of economic and social inequalities and buffering the stress related to major transitional political, social and economic changes, including globalization.

An overarching issue facing investment for health is liberating the definition of health from the confines of the biomedical model. This requires shifting the focus from individual behaviour and placing behaviour within its social, economic and environmental context. In addition to narrowing the choice of effective preventive actions, the biomedical model contributes little to building strategies that promote health without reference to specific pathologies. The dominance of this limited definition of health has encouraged the debate about health to remain focused on supply-side issues of health care (often used synonymously with *health*). The demand-side possibilities of promoting health through major shifts in social policies have as a result received relatively scant attention. How can one shift the debate now focused on issues of pathogenesis to the issues of salutogenesis? What are the specifics of a strategy that can effectively change the perspective of key enabling factors; to support a wide policy venue for investing in health beyond classically defined health policies?

The Anacapri scientific workshop

The above considerations constitute in large part the core of the capacity-building curriculum the Venice Office expects to provide WHO Member States, commencing in 2001. The presentations and discussions generated at the interdisciplinary

workshop on “the promotion of wellbeing: options and obstacles”, held at Anacapri, Italy, on 2–5 September 2000 focused on priority options and obstacles to the promotion of population health through public policies (and their private or nongovernmental counterparts). Sponsored by the WHO Regional Office for Europe, the workshop was co-sponsored by the Karolinska Institute, The Swedish ministries of Industry, Employment and Communication, and Health and Social Affairs, the Fondazione Axel Munthe Villa San Michele, and AstraZeneca.

Twenty participants of diverse disciplines, experiences and perspectives contributed to a vigorous debate on the obstacles to effective health investing and what might be done to avoid or overcome them. The participants were not held to an expectation of specificity that would shut down spontaneity or inhibit creativity. Idea fragments and even anecdotes were welcomed. The aim was to tease out the accumulated wisdom of the group: to provide a wide-angle view of options for consideration and further exploration by the Venice Office.

Four papers were presented that identified factors and forces that should be taken into account in formulating a contemporary strategy for improving population health in Europe. These papers were exploratory, based on available research evidence, but by no means intended to be definitive in their conclusions or appropriate to the circumstances of each of the 51 Member States of the WHO European Region. The papers focused on key considerations and stimulated thinking about deficits in knowledge, current shortcomings in health development approaches, potential obstacles to making positive changes and ways to overcome them. Two Cabinet Ministers from Sweden offered commentaries on the keynote papers from the perspective of lessons learned in the practice of setting and implementing public policies.

Here, the four keynote papers precede highlights of these comments. In an effort to reflect the critical points in the free-flowing discussions that followed these presentations, the editors organized the commentaries around recurrent themes or topics that bore special emphasis. While the participants made no formal recommendations, it was clear from the frame and sense of the discussions that the topics themselves should be given high-priority consideration in debating options in advancing population health through structural interventions at all levels, both public and private.

Socioeconomic status and health

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Socioeconomic status and health: material and psychosocial linkages

The understanding of the determinants of population health has undergone a profound change over the last couple of decades. In the judgement of most people working in the field, the accumulated research evidence at the end of the 1980s seemed to show that:

- medical services were not a major determinant of population health, and certainly not of the substantial social gradient in health that exists even in countries providing universal access to medical care;
- the well known behavioural risk factors left most of the social gradient in health unexplained; and
- social selection – or reverse causality – made only a minor contribution to health inequalities.

On that basis most people in the research community – myself included – assumed the task before us was to identify which aspects of people's material circumstances were responsible for the social gradient in health. Were they the occupational hazards to which people were exposed, the differences in diets, in housing, air pollution, or what? Growing interest in the problem reflected not only a concern for social justice but also the hope that health inequalities were an epidemiological clue: that the factors causing them would lead us to more general determinants of population health.

The biggest change in understanding since then has been our growing knowledge of the power of psychosocial influences on health. Few of us had imagined that the most important etiological factors could be anything but the direct effects of exposure to different material circumstances and standards. Of course, early studies, such as those on the effects of bereavement on risk of death among surviving spouses or relatives, had provided evidence that psychosocial factors could, at least in these special situations, have an important influence on health (1). Factory closure studies convinced me that psychosocial factors might be important contributors to the social gradient in health. These studies (2–4) showed that health deteriorated not only when people actually became unemployed, but often from much earlier: when jobs

first became insecure and people knew that there were going to be redundancies. At the same time, there was growing evidence that life events, social support and sense of control were also closely associated with health. Further, just as epidemiologists began to wonder how to identify the particular ideational states that damage health, the picture emerging from biological research seemed to suggest that anything contributing to chronic anxiety was likely to affect health (5,6).

It was easy to see how life events and job insecurity might increase anxiety, while a sense of control and social support would decrease it. Although all seemed to be powerful influences on health, not until the arrival of two further pieces of evidence did it seem possible that psychosocial pathways could make the largest single contribution to the socioeconomic gradient in health. One of these concerned the income–health relationship. Because income is related to health *within* rich developed countries (or states in the United States) but is at best only very weakly related to the differences in average income between them, it seemed likely that the underlying relationship was not so much between health and absolute living standards or material circumstances – regardless of the rest of society – so much as with *relative* standards, with relative income serving as a marker for social status (7). In effect, income seemed to be related to health where it was indicative of social status (within a society), but not where income was not indicative of social status, so that the differences in average income between developed societies seem to make little difference to health.

Income distribution

Apparently providing independent confirmation of this view was the evidence that population mortality rates were related to how equally or unequally income was distributed within them. Thus, among the developed countries, the most egalitarian societies, not the richest, tend to have the best health and highest life expectancy. For example, the United States, although it is richer and spends more on medical care than any other country, has poorer health than almost all western European countries and comes around 22nd in the international league tables of life expectancy. On the other hand, countries such as Greece, despite having just under half the level of income per head, have substantially higher life expectancy than the United States. More egalitarian countries such as Japan, Norway and Sweden have among the best health in the developed world.

The 50 states of the United States show the same pattern. Although some states have over twice the average income of others, there is little or no relationship between average incomes in each state and state death rates. There is a close relationship ($r = 0.6$), however, between how unequally income is distributed within a state and its death rate (8). Even among the 280 or so metropolitan areas in the United States, the ones with most unequal income distribution have the highest death rates (9).

Associations between income inequality and population health have now been

reported on numerous different bases. They appear internationally, across groups of developed and developing countries, as well as in eastern Europe (despite the rapidly changing circumstances in the latter). Relationships have also been shown cross-sectionally and when looking at changes over time. The same relationship has been reported not only within the United States at different levels of analysis but also within the Russian Federation, the United Kingdom and Taiwan, China. Many of the relevant research papers have been reprinted in one volume (10).

Social status: animal evidence

Income inequality can be interpreted as a measure of the burden of *relative* deprivation or low social status in each society. The possibility that social status affects health has received powerful support from studies of the biological effects of social status among non-human primates. Sapolsky's studies of wild baboons (6,11) and Shively and colleagues' of macaques in captivity (12,13) found that a number of physiological risk factors showed similar social gradients with social status among animals as have been found among human beings. Sapolsky was able to rule out reverse causality as an explanation by examining the effects of changing circumstances and group membership. Shively was able to do so by manipulating social status experimentally – by transferring animals between cages to form new social groups. The most important thing about these animal studies, however, was that Shively was able unambiguously to distinguish between the effects of social status itself and the direct effects of material conditions. She did this by controlling diet and the environment while manipulating social status. That left nothing but the changes in social status to explain the changes in risk factors that she reported.

These animal studies would be much less important for those concerned with human health if the physiological risk factors associated with social status among animals and people were quite different, but they show some striking similarities. Among the conditions that have been found to be related to low social status in both human and non-human primates are: worse ratios of high-density to low-density lipoproteins, central obesity, glucose intolerance, increased atherosclerosis, raised basal cortisol levels and attenuated cortisol responses to experimental stressors (5,6,14,15). Similar effects are likely to have similar causes. Because of the absence of dietary or other environmental differences, causality in the animal studies could be unambiguously attributed to the anxiety that low status animals experienced as a result of living with the constant threat of being attacked and bitten by superiors.

Stress and disease

The biological pathways through which psychosocial factors get under the skin and affect health involve chronic stress. The suggested mechanisms centre on the effects of sustained activation of the hypothalamus–pituitary–adrenal axis and the

sympathetic nervous system (5,16). The stress response activates a cascade of stress hormones that affect the cardiovascular and immune systems. When faced with brief physical threats and emergencies, our bodies not only prepare for muscular activity, mobilizing energy resources for fight or flight, but they also reduce biological resources available to a wide range of functions that are not essential in dealing with short-term emergencies. When one is escaping from imminent danger, biological housekeeping processes such as tissue maintenance and repair, growth, digestion, reproductive functions and immunity are not essential, and little is lost if the emergency is brief. Problems come when physiological arousal is frequent and sustained over long periods. The effects are analogous to more rapid aging and make people more vulnerable to a wide range of diseases.

The growing understanding of these biological pathways has probably advanced far enough for us to say that the health effects of psychosocial risk factors hinge on the extent to which they produce chronic physiological arousal. Indeed, an increasingly important part of our task in understanding the social determinants of health is the identification of the main sources of chronic stress in everyday life.

Inequality and status differentiation or equality and social solidarity

If the extent of income inequality in a society is an indication of the scale of differences in social status, then the relationship between income distribution and health can provide a useful perspective on some of the underlying issues affecting health. The most plausible attempts to explain why more egalitarian societies tend to be healthier have focused on how inequality affects the social environment. Initially very impressionistic evidence from a number of different societies suggested that unusually egalitarian societies were not only unusually healthy but also unusually cohesive (17). Several of the examples discussed suggested not only that income equality, social cohesion and health had strong cross-sectional relationships but also that these changed together over time. Since then, some striking quantitative evidence has strongly confirmed the initial impressions. Kawachi et al. (18) showed that measures of how much people trusted each other in each of the United States was closely correlated both with mortality ($r = -0.8$) and with income inequality ($r = -0.7$). Path analysis suggested that the relationship between income inequality and mortality went almost wholly through measures of the social environment such as trust. The same paper also showed similar, but weaker, relationships with other measures of the social environment such as perceived fairness, helpfulness and group membership. Uslaner (19) has shown that higher levels of trust are also associated with greater income equality internationally. Violence, too, is related to inequality. In 1996, Kaplan et al. (8) reported a positive

correlation ($r = 0.7$) between income inequality and homicide rates within the United States. An earlier meta-analysis of some 34 studies had shown that the relationship between income inequality and both homicide and violent crime is robust (20). Studies using international data, as well as those using data from large and small areas within countries, have reported this result. If homicide is indicative of the social environment, then the evidence again suggests that the relationship between income inequality and death rates from all other causes (excluding homicide) is mediated by the quality of the social environment (21).

Williams et al. (22) used the Minnesota Hostility Scale to measure hostility scores in random population samples in ten cities in the United States. They found that the mean hostility scores for each city were strongly correlated with city mortality rates ($r = 0.9$). Using data on income inequality in the relevant standard metropolitan areas (kindly supplied by John Lynch) I found that these same hostility scores were correlated with income inequality ($r = 0.7$).

These correlations are all remarkably powerful and suggest that income inequality is strongly and systematically related to the character of social relations and to the nature of the social environment in a society. In their study of the regions of Italy, Putnam et al. (23) noted that their index of people's involvement in local community life was also correlated ($r = -0.8$) with income inequality. Talking about an egalitarian social ethos (rather than income distribution), Putnam et al. said, "Citizens in the more civic [of the Italian] regions, like their leaders, have a pervasive distaste for hierarchical authority patterns" and that "Equality is an essential feature of the civic community". In his more recent work on social capital in the United States, Putnam (24) points out the strikingly similar trends in income distribution and in his measures of social capital over the last half century. He concludes that:

Community and equality are mutually reinforcing. ... Social capital and economic inequality moved in tandem through most of the twentieth century. In terms of the distribution of wealth and income, America in the 1950s and 1960s was more egalitarian than it had been in more than a century. ... those same decades were also the high point of social connectedness and civic engagement. Record highs in equality and social capital coincided.

Conversely, the last third of the twentieth century was a time of growing inequality and eroding social capital. By the end of the twentieth century the gap between rich and poor in the US had been increasing for nearly three decades, the longest sustained increase in inequality for at least a century. The timing of the two trends is striking: somewhere around 1965–70 America reversed course and started becoming both less just economically and less well connected socially and politically.

These associations demand serious attention. Although much of the data I have mentioned refer to state-level correlations in the United States, the evidence shows

that strong relationships between income distribution and measures of the quality of social relations are in fact very widespread. The relationship between inequality and homicide has been found in numerous different settings internationally. Trust has been found to be related to equality internationally as well as among the 50 states (18,19). As well as Putnam's work on the Italian regions (23), the qualitative evidence I have discussed elsewhere (17) came from very different sources: the United Kingdom in the two world wars; Roseto, Pennsylvania; Japan after the Second World War; and eastern Europe during the 1970s and 1980s. The implication is that the connection between inequality and the quality of social relations crops up fairly widely.

The evidence of such strong and widespread relations between income distribution and measures of the social environment is fundamentally important in its own right. Indeed, it may be more important for what it says about the impact of income inequality on the quality of life and social relations than for what the association with mortality says about its impact on the length of life. Although in the past we probably thought of things such as trust and hostility as individual psychological characteristics and would have assumed that average scores for whole towns would vary only as a result of sampling error, we now know not only that there are systematic population differences in psychosocial characteristics such as these but also that these differences are strongly correlated with structural variables such as income inequality. Not only does this contradict our assumptions that psychosocial factors are essentially individualistic but it demands that we do some fundamental political and social rethinking.

People who use terms such as *social capital* and *social cohesion* are often unaware of or choose to ignore their links with income inequality. The term *social capital* suffers from being too closely connected with the notion that, rather than a human good in itself, it is primarily valued as an investment that increases economic efficiency. *Social cohesion* suffers from the assumption that it is often likely to be exclusionary, a feature of in groups defined in contrast to out groups. It may therefore be helpful to refer to the better social relations fostered specifically by greater income equality as *social solidarity*. Using this term may reduce people's tendency to ignore the crucial role of distributive justice and power.

Hierarchy or solidarity: psychosocial risk factors

Rather than imagining that the relationship between income inequality and mortality reflects the impact of just one measure of the social environment, we may need to recognize that numerous different measures of the social environment and of the quality of social relations are all highly intercorrelated. The link between income distribution and mortality is then not simply the result of differences in trust or in the nature of life on the streets alone, but almost certainly reflects the highly intercorrelated characteristics of these different aspects of social relations

throughout a society. So rather than thinking of homicide rates merely as a measure of a bizarre and rare form of behaviour without much connection to the ordinary life of the majority of the population, we should perhaps think of it in the light of Rose's evidence on the distribution of different risk factors in populations (25). The statistical power of homicide as a social indicator comes from the fact that it is the extreme end of the distribution of social relations in society: that is, high homicide rates suggest that the whole distribution of social relations in a society has been shifted towards the more aggressive, conflict-filled end of the spectrum. Hence, in high-homicide areas we would also expect to find lower levels of trust, higher levels of hostility and presumably – if we had the data – higher rates of domestic conflict as well. Different measures of social relations, however, are not only intercorrelated at the area and population levels but also likely to be intercorrelated among individuals. For example, boys brought up in homes with high rates of domestic conflict are more likely to become violent adults (26). This would help explain why epidemiological studies have found, at both the ecological and individual levels, that measures of health are related to such a wide range of what seem to be very different measures of social affiliation. On their own, such measures as involvement in community life are very unlikely to exert such powerful direct influences on health as the statistical evidence seems to suggest. Going to a monthly meeting of a club, voluntary association or society is, in itself, unlikely to do wonders for one's health.

There seems to be a *culture of inequality* that is less supportive, less trusting and more aggressive, violent and macho – or laddish. As well as being implied by measures of social relations, this picture is also supported by the pattern of mortality related to inequality. Although inequality is associated with increased death rates from most of the major causes, it seems to have a particularly dramatic effect on violence, accidents and alcohol-related deaths (8,27–29).

Readers have seen some of the evidence suggesting that low social status is a health risk factor in itself. In addition, social affiliations have been found to be important in a number of very different contexts. Not only do well controlled observational studies show two- to fourfold differences in mortality between people with weak or strong social support or friendship networks (30,31), but studies of survival after heart attack also show that survival is three times as good among people with good social support than in those without (31). Even in experiments where people have been given nasal drops containing viruses for the common cold, so they all had the same measured exposure to infection, those who had friends in few areas of life were over four times as likely to develop colds as those with friends in many areas of life (32). In this case, immune suppression seemed to account for the differences (33).

The combination of increasing social status differentials and deteriorating social relations could hardly be a more potent mix for population health. Social status and social support or affiliation are – at least in the developed world – perhaps the two most

important risk factors for population health. Both have been associated with two-, three- or even fourfold differences in mortality. While other factors might show a larger relative risk between the exposed and non-exposed, the proportions of the population exposed to the problems of low social status and weak social affiliations is so large that few other risk factors will produce such a high population-attributable risk.

Power and self-interest or reciprocity and social solidarity

What makes inequality in social status and social affiliation so important to health, and links them as they move inversely in societies? Why this double link – as health risk factors and as they move empirically in society? The answer seems to be that social hierarchy and social affiliation are probably not entirely separate variables: they may instead be two sides of the same coin. On one side is social status, which – at least in the form of animal pecking orders and dominance hierarchies – is about differential access to resources based on power and coercion, regardless of the needs of others. On the other side, friendship is about mutuality, reciprocity, social obligations, sharing and a recognition of others' needs. These are surely opposite bases for human relations: people come together either cooperatively, linked by mutual social obligations, or to use power to serve overt self-interest.

Interestingly, Putnam (23) refers to the relationships between equals that contribute to a strong civic community as *horizontal* relations. He contrasts them with the *vertical* patron/client relations up and down the hierarchy that characterized the less civic regions of Italy. Among non-human primates, there is also a clear contrast between horizontal alliances or friendships, and the vertical relations between dominants and subordinates that characterize social ranking systems based on power. Animals form grooming alliances, incurring obligations of reciprocity, which serve to protect or improve their position in the social hierarchy. Among human and non-human primates these contrasting bases of social organization have been called *agonic* (systems based on power and dominance hierarchies) and *hedonic* (based on more egalitarian cooperation) (34).

There is a fairly basic incongruence between friendship and inequality. An unwillingness to use one's greater wealth to help out a friend who has fallen on hard times not only suggests the limits of the friendship but is likely to make the relationship seem increasingly awkward. Something in the nature of friendship is almost inherently egalitarian. Indeed, Plato (35) said, "How correct the old saying is, that 'equality leads to friendship'! It's right enough and it rings true". This is so taken for granted that in the Cambridge Scale, used to classify occupations by status into a hierarchical order, friendship patterns are used as a measure of equality or social distance (36). The Scale is based on surveys in which people are asked to name their own occupation and the occupations of six friends. Occupations that turn out to be linked by many friendships are classified as being of similar social status, while

occupations linked by few are classified as being socially distant from each other. In addition to health's sensitivity to social status and to friendship, research provides a third pointer to the nature of important underlying psychosocial processes. This is the powerful influence of emotional development in early childhood on health in adulthood. Emotional trauma, domestic conflict and poor attachment cast a long shadow forward over health in later life, affecting death rates and the prevalence of a number of major diseases (37–41).

That health is associated with early emotional development, as well as with both friendship and social status, may reflect similar underlying sources of anxiety. The insecurities that come from emotional difficulties in early life may have something in common with those that may result from low social status. It is perhaps significant that people use terms such as *insecurity*, *lack of confidence* and *fear of personal inadequacy* to talk about the effects of both. Further, having friends – or lacking them – can feed into similar feelings of confidence or insecurity. Having friends leads to feelings of acceptance and belonging. Friends are validating; they provide confirmation of one's sense of self and inspire feelings of personal adequacy and reassurance. In contrast, a lack of friends can lead to feelings of inadequacy, self-doubt and rejection. Without friends confidence evaporates.

The links between these three risk factors are not just a matter of plausible similarities in their emotional meanings, or even of the way in which they can interact – as for example how early emotional insecurities can increase one's vulnerability to the insecurities of low social status. There are also biological links: these three risk factors are all associated with higher basal levels of stress hormones such as cortisol and there seems to be evidence of different trajectories of blood pressure and stress responses from early childhood throughout adult life (42).

In an attempt to give the benefits of friendship a material rather than a psychosocial interpretation, it is sometimes suggested that friendship may benefit health because of the material support friends provide for each other. This might be plausible if poor people had friends who could give them large sums of money when they were behind with the rent, but what friends give to or share with each other does not make up a healthy list. Friends buy each other drinks; they offer each other cigarettes, and – at least in England – the material resource that neighbours proverbially borrow from each other is a cup of sugar. Friends are also likely to give each other minor infections and now, increasingly, they may give each other AIDS. This is hardly the mixture to explain two- to fourfold decreases in morbidity and mortality rates among people who have more friends compared to those who have few.

Respect and violence

The association between income inequality and homicide provides a useful source of insight into one of the main sources of the chronic anxiety inherent in low social status. As mentioned earlier, the association is not only robust (20) but seems to account for half of the very large variations in homicide rates between states in the United States. Its possible relevance to understanding health is suggested by the fact that homicide is related to income inequality in much the same way as death rates from all other causes. The very close association between the distribution of homicide and death rates from all other causes suggests that the social milieu that produces high homicide rates also raises death rates from other causes. In a recent paper exploring these issues and reviewing some of the literature on the causes of violence, my colleagues and I (21) concluded that the central issue was respect. Violent men and the people who have worked with them show a remarkable degree of agreement that violence is very frequently a response to people's feeling that they are being treated with disrespect. Gilligan (43), who was a prison psychiatrist for 25 years before becoming director of the Centre for the Study of Violence at the Harvard School of Public Health, said, "I have yet to see a serious act of violence that was not provoked by the experience of feeling shamed and humiliated, disrespected and ridiculed, and that did not represent the attempt to prevent or undo this "loss of face" – no matter how severe the punishment". The same emphasis also comes from people who have been involved in violence. In his autobiography, McCall (44) says:

...the underlying issue was always respect. You could ask a guy, "Damn, man, why did you bust that dude in the head with a pipe?" And he might say, "The motherfucka disrespected me!" That was explanation enough. It wasn't even necessary to explain how the guy had disrespected him. It was universally understood that if a dude got disrespected, he had to do what he had to do.

Even surveys of violence at school found that the most common trigger cited by students was "insulting or disrespectful behavior" (45). My colleagues and I (21) provide a fuller discussion of these connections.

The higher levels of violence in societies where income differences are greater do not (except perhaps in revolutionary uprisings) take the form of violence between rich and poor. Instead, the violence associated with greater inequality occurs largely among the most deprived. The role of respect explains not only why this is so but also the statistical relationship between violence and inequality. It is understandable that, where income differences are greater and more people are denied access to the conventional sources of respect and status in terms of jobs and money, people become increasingly sensitive to signs of disrespect, indications that they are being treated or regarded as inferior, insignificant and worthless.

Sensitivity to social status

This picture of violence suggests how much social status matters to people. The resort to violence to defend one's dignity and honour, to gain respect, to avoid loss of face, and – at the societal level – the connection between violence and greater inequality, show how low social status or intimations of inferiority get to people so intensely. What seems to hurt most about relative poverty is not so much the lack of material possessions and deprivation in itself but the affront to one's dignity and the sense of inferiority and failure that come with it. It is indicative that living standards are frequently talked about in terms of maintaining respectability, just as poverty is regarded as stigmatizing and an affront to people's dignity and sense of decency.

There are many indications that people are more sensitive and attentive to social status issues than is often recognized. For example, the literature on white-coat hypertension (the tendency for blood pressure to be higher when measured by a doctor) developed simply to get more accurate clinical measures of blood pressure. It is now paralleled, however, by work from social psychologists, who have shown that blood pressure tends to rise when people are interviewed by an interviewer of higher rather than equal or lower status (46,47). There is little doubt that they both reflect the response of the sympathetic nervous system to the social anxiety induced by interacting with someone of higher social status.

A quite different example of the salience of social status comes from Adam Smith (48). He believed that the pursuit of what he called regard was one of the main driving forces behind economic activity. In his *Theory of the moral sentiments*, he asks:

What is the end of avarice and ambition, of the pursuit of wealth, of power and pre-eminence? Is it to supply the necessities of nature? The wages of the meanest labourer can supply them ... what are the advantages which we would propose to gain by that great purpose of human life which we call bettering our condition? To be observed, to be attended to, to be taken notice of with sympathy, complacency, and approbation, are all the advantages which we can propose to derive from it.

Several modern economists have developed this theme, suggesting that an important part of people's desire for higher incomes and consumption is a concern to maintain or improve their social status, that it is ultimately a form of social competition and that in the end people are (often without recognizing it) effectively concerned with relative income and relative standards (49–51). As Schor (51) says, "We live with high levels of psychological denial about the connection between our buying habits and the social statements they make".

Bourdieu's empirical research (52) has shown how people use aesthetic taste and important areas of cultural life – choices of films, pictures, music, clothes, etc. – to maintain and express social distinctions. Despite changes in how it is expressed, there can be little doubt of the importance of snobbishness in everyday life.

All too easily, the social hierarchy presents itself as if it moved from the most capable, intelligent and successful people at the top to the most incapable and inadequate at the bottom. Indeed, a substantial literature in sociology and social psychology suggests that people infer ability partly from institutional position (53,54). As creatures whose behaviour is very largely determined by learning rather than instinct, human beings must constantly monitor their behaviour. They learn primarily through processes of social comparison: by comparing their behaviour with that of others, by monitoring how others perceive them, and making corrections where necessary. No doubt closely related to this is one of the most fundamentally social characteristics of human brains: that people are reflexive beings who know and experience themselves partly through each other's eyes. Almost inherent to this process is a desire to avoid rejection and negative evaluations from others. Monitoring one's behaviour and how one appears to others is a powerful source of social anxiety. Indeed, if we are looking for a source of chronic anxiety acting on health in a way that would give rise to the three sets of observed associations – between health and low social status, between health and lack of friendship, and between health and poor early emotional development – these sources of social anxiety must be prime candidates.

The social brain

Too often we picture human beings as having evolved simply in relation to the natural environment. As Alexander (55) argues, however, the “primary hostile force of nature” that human beings have always faced is other human beings, who have the potential to compete for everything: food, clothes, sexual partners, housing, jobs, etc. As well as being the most feared competitor, other people are also the greatest source of comfort, love, help, friendship, assistance and learning. Getting relationships with other people right has always been absolutely crucial to human welfare – even to basic material welfare – so much so that some of the leading theories of the growth of the human brain suggest that the crucial selective environmental stimulus to its rapid growth may have been the demands of dealing with the complexity of social life (56) Intriguing aspects of this approach include not only evidence that, among primates, the size of the neocortex relative to the rest of the brain is related to the size of the social group but also suggestions that the capacity for language developed primarily for its social functions (57), rather than for practical tasks such as coordinating hunting. (After all, species such as lions and wolves manage to do this with great sophistication and without language.) To understand the psychological importance of social status and friendship, perhaps we need to think of the brain as a much more social organ than we usually do. To understand why health is so sensitive to social status, we have to ask why it is so

difficult just to shrug off being treated as inferior or not having friends. Why are people so sensitive – often apparently irrationally sensitive – to some features of their social environment? Part of the sensitivity and attentiveness to social status is likely to be an evolved human characteristic. Position in the dominance hierarchy was important in determining access to resources and reproductive success both before and after human existence in egalitarian hunting-and-gathering societies.

To suggest that some characteristics are genetic, however, does not mean that the scope for environmental influence on behaviour is reduced. Rather than reducing human interaction with the environment, it says more about the elements people bring to that interaction. Just as human beings may be genetically sensitive to a particular infectious disease to which various other animals may be insensitive, the incidence of that disease in human beings will still be affected by exposure to the infective agent and a range of other factors affecting their resistance. For example, despite the important genetic differences in people's susceptibility to tuberculosis, environmental change nevertheless led first to its rapid decline in developed countries and then to its subsequent re-emergence as urban poverty re-emerged. So hypotheses about human genetic characteristics are not about whether the environment is important, but about how people interact with their environment. Perhaps, if we knew more about our genetic characteristics, we would know more about the importance of the environment. Indeed, one of the conclusions of this area of work on the socioeconomic determinants of health is likely to be that human sensitivity to social hierarchy means that the costs of socioeconomic inequality are higher than we may have realized.

Prehistoric equality

The social costs of inequality are presumably why very egalitarian forms of social organization were dominant during most of human hunting-and-gathering prehistory. At the end of their review of over 100 anthropological accounts covering some 24 recent hunter-and-gatherer societies spread over 4 continents, Erdal & Whiten (58) conclude that these societies were characterized by “egalitarianism, cooperation and sharing on a scale unprecedented in primate evolution”:

They share food, not simply with kin or even just with those who reciprocate, but according to need even when food is scarce.

There is no dominance hierarchy among hunter-gatherers. No individual has priority of access to food which ... is shared. In spite of the marginal female preference for the more successful hunters as lovers, access to sexual partners is not a right which correlates with rank. In fact rank is simply not discernible among hunter-gatherers. This is a cross cultural universal, which rings out unmistakably from the ethnographic literature, sometimes in the strongest terms.

Erdal & Whiten do not suggest that early human egalitarianism was based on any sudden change to selflessness in the genetic make-up. Instead, they (58) say that sharing was “vigilant”, with people watching to make sure they got a fair deal, and that equality is likely to have been based on what they call a generalized “counter dominance strategy” derived from the ways in which non-human primates use alliances to oust – or defend themselves against – dominant animals. Indeed, rather than implying that people are unconcerned with social status, the maintenance of equality in prehistoric societies should probably be seen as an indication of the importance of avoiding the social costs of inequality.

Prejudice and discrimination

A clearer understanding of why inequality is accompanied by less good social relations may be gained by looking more carefully at the nature of hierarchical social relations. Social rank is maintained and asserted through a number of behavioural responses to dominance hierarchies. Accounts of the behaviour of non-human primates sometimes describe how, when an animal in a dominance hierarchy loses a battle for status, it then shows what is often described simply as displaced aggression towards others below it in the social hierarchy. Volker Sommer, a primatologist I asked about these reports, told me (personal communication) that this is a well recognized phenomenon called the *radfahrer-reaktion* (bicycling reaction) in German, because, having lost a battle for status, an animal then shows its back to those above it (bowing to its superiors in the dominance hierarchy) while kicking downwards at the animals below it. Among non-human primates, Sommer said, after having received aggression from a higher-ranking individual, an individual will very often redirect aggression towards lower-ranking animals, sometimes in a chain reaction – so that alpha slaps beta; beta slaps gamma; gamma slaps delta; etc. Virgin & Sapolsky (59) found that baboons showing this kind of displaced aggression in response to domination from above often have lower basal cortisol levels; this suggests that reasserting supremacy over animals lower in the hierarchy may reduce the impact of social subordination from above.

The term *radfahrer-reaktion* came originally from Adorno’s *Authoritarian personality* (60), published in 1950, which tried to explain the horrors of the Nazi period and the scapegoating of the Jews. The tendency for racism, discrimination against vulnerable minorities and extreme nationalism to grow in times of economic hardship is familiar. For instance, when unemployment is high, people who feel shamed or stigmatized, who are made to feel inferior, may try to regain a sense of their selfhood, status and respect by asserting their superiority over migrants and other vulnerable ethnic and religious minorities. True to this pattern, research has shown that, in the states of the United States where income inequality is greater (with more people in relative poverty), racial prejudice and political and economic discrimination against women are greater (61,62).

In addition, some feminist literature points out how humiliated men are, in a similar way, more likely to use violence against their wives. Gloria Anzaldua (63), who grew up near the border of Mexico and the United States – where the term *macho* developed its current connotations – explained the links thus:

For men like my father, being “macho” meant being strong enough to protect and support my mother and us, yet being able to show love. Today’s macho has doubts about his ability to feed and protect his family. His “machismo” is an adaptation to oppression and poverty and low self-esteem. It is the result of hierarchical male dominance. The Anglo, feeling inadequate and inferior and powerless, displaces or transfers these feelings to the Chicano by shaming him. In the Gringo world, the Chicano suffers from excessive humility and self-effacement, shame of self and self-deprecation.

The loss of a sense of dignity and respect in the macho breeds a false machismo which leads him to put down women and even to brutalize them.

The underlying pattern of gaining a sense of position by putting down any weaker or more vulnerable groups is perhaps most clearly exemplified by the particular brutality shown towards sex offenders by other prison inmates. Given that prisoners are among the most humiliated groups in society, sex offenders are one of the few groups over which they can assert superiority.

These are extreme examples of processes of discrimination against social inferiors. They are nevertheless part of the repertoire of dominance behaviour. There is a unity that runs all the way from the use of indicators of superiority and exclusiveness at the top to overt (rather than covert) violence and racism at the bottom. To express and maintain social distinctions, people in more privileged circumstances can rely on subtle indications of their wealth, power, occupational seniority and education – coupled with the use that Bourdieu (52) shows is made of aesthetic taste and culture. For those rendered inferior by their low standard of education, occupation, income and housing, violence and overt discrimination may seem the only way of gaining respect and selfhood.

At every level, hierarchies exclude those below as inferior. Where some people seem to count for everything and others for nothing, everyone is more worried about how much he or she matters. That is why greater inequality is associated with a deterioration in the quality of social relations, and why inequality is such a powerful generator of more stressful social relations. By undermining human sociability and placing people in positions of dominance and subordination in relation to each other, these social structures more frequently generate the higher levels of stress and anxiety that damage health. If people understand the effects of inequality, we can, by reducing it, perhaps take another step towards realizing our common humanity.

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The forgotten crisis: transition, psychosocial stress and mortality over the 1990s in the former Soviet bloc

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Introduction

The beginning of 1989 formally marked the onset of the epochal transformation of the former socialist economies of Europe into liberal market democracies. While the months preceding this historic watershed were characterized by widespread hopes for improvements in living standards and political freedom, the subsequent ten years brought about an unprecedented fall in output and incomes, a rapid impoverishment of large sections of the population, rising inequality and – central to the topic of this paper – an exceptional mortality crisis.

Between 1989 and 1996, the number of the poor and unemployed in the eastern countries of the WHO European Region rose by 100 million and 10 million, respectively, while the crime rate tripled (1). (The increase in unemployment would be considerably bigger if the forced exits from the labour force – due to early retirement or to the introduction of fees in kindergartens, which forced many young women to leave the labour market – were taken into account.) In central Europe, economies and living standards started to recover in 1992–1993, and a similar if less pronounced trend emerged after 1995–1996 in the Baltic states. In the countries of south-eastern Europe and the newly independent states of the former USSR (NIS), the situation was consistently worse at the end of the twentieth century than a decade earlier.

The impact of these developments on mortality was dramatic. Male life expectancy at birth declined in all the former socialist economies of Europe during the first year of reform (1989 or 1990 in most cases), and it continued falling in many of them until the mid-1990s. While male life expectancy started recovering in 1991–1992 in central Europe and in 1995–1996 in the rest of the former Soviet bloc, by 1999 it was still lower than its 1989 level in 9 of the 16 countries analysed in this paper (Table 1). Of particular concern is the situation of Russia, Ukraine and Belarus. In Belarus, male and female life expectancy at birth declined in 1999 for the tenth year in a row, while in 1999 the Russian Federation recorded falls of male and female life expectancy (of 1.4 and 0.5 years, respectively), which reversed the slow recovery recorded since 1995. Despite its magnitude, this mortality crisis has been, with a few exceptions, ignored by the national authorities of the countries concerned, international organizations

and most economists (2–5). When the crisis was acknowledged, it was mainly attributed to statistical artefacts or past trends about which nothing much could be done. Indeed, most of the mainstream literature in this area attributed the transition's mortality crisis to *glasnost* in statistics, environmental degradation, the recession experienced by the countries in transition, weak health care systems, alcohol consumption and cohort effects. Some of these analyses are grossly misplaced. Others, such as those emphasizing changes in alcohol consumption or the erosion of the health infrastructure, are relevant but account for only a modest share of the total change in mortality and – most of all – fail to identify the true underlying causes of the health crisis.

This paper argues that the main cause of the transition's mortality crisis has been the growing psychosocial stress resulting from acute, transition-related dislocations in the labour market, income distribution, family structure and geographical distribution of the population, and grossly inadequate public policy responses to these social emergencies.

Acceptance of this explanation has important implications for policy. Supporters of so-called big-bang policy reform tend to ignore its impact on mortality, or to ascribe it to problems inherited from the socialist era or the so-called unavoidable chaos brought about by the transition, and to suggest that there are no quick fixes for it. In turn, conservative forces argue that the sheer impoverishment brought about by the move to the market has caused the mortality crisis, and therefore many liberal reforms (including privatization) should be repealed or sharply amended. The implications of my analysis are substantially different from either of these views: vigorous market reforms are necessary, but – as the case of the Czech Republic, Poland and Slovenia has underscored – they need to be characterized by a realistic pace of industrial restructuring, strong policies on the labour market and social sector, the maintenance of law and order, the strengthening of health care and – to finance all this in a non-inflationary manner – the generation of adequate revenue.

Features of the mortality crisis

In spite of great hopes for improvements in living standards, most of the health changes recorded during the transition were negative, particularly in south-eastern Europe and the NIS.

First, during 1989–1991, male life expectancy at birth fell in all 16 countries included in Table 1, with the exception of Slovenia. The fall during the first year of reform would be more pronounced if the actual initial years of the transition – which at times was postponed until 1992 – were selected. Even in central Europe, the loss of human life – while negligible from a long-term demographic viewpoint – was not negligible from a welfare and political perspective. Relative to the death rates prevailing in 1989, the former German Democratic Republic and Poland recorded about 6000 and 8400

excess male deaths, respectively, over 1990 and 1991, and Hungary registered 10 300 excess male deaths and 3400 excess female deaths over the 1990–1993 period (6).

Second, after this initial surge, mortality rates declined in central Europe, but rose further in all the rest of the region until at least the mid-1990s. While country-specific factors played an important role, the fall in death rates in the central European countries appears to be due also to common factors. All of these countries experienced less acute and lasting recessions and limited surges in income inequality, and benefited from the introduction of extensive labour-market programmes. In addition, public expenditure on health increased in all, while alcohol consumption either stagnated or increased modestly. Family instability and distress migration were also less pervasive. Further, none of these countries experienced the massive withdrawal of the state from the field of law and order and social security that was observed in several NIS.

The most worrisome deterioration in life expectancy in the first year of reform was observed in the Russian Federation and the Baltic countries. Here, death rates rose sharply over 1992–1994. By 1994, the life expectancy at birth of Russian males had fallen to 57.6 years, 6.6 years less than in 1989, and 3 years less than that of a poor agrarian economy such as India (7). The fall in female life expectancy was less acute but still marked. Only slightly less pronounced changes were observed in Estonia, Latvia and Lithuania, which showed a modest recovery of life expectancy in 1995 and a more pronounced one in 1996. In contrast, by the end of 1999, no clear reversal in the life expectancy trend was yet in sight in Belarus, the Russian Federation, Ukraine and south-eastern Europe.

Table 1. Changes in male and female life expectancy at birth in 16 transitional economies of Europe over 1989–1999

Country or region	Male life expectancy (years)			Female life expectancy (years)	
	Maximum loss since 1989	Change over 1989–1999	Change over 1989–1991	Maximum loss/gain since 1989	Change over 1989–1999
Czech Republic	... ^a	+ 3.3	— 0.6	NA ^b	+2.7
Slovakia	...	+ 2.2	— 0.2	NA	+1.8
Poland	...	+ 2.1	— 0.7	NA	+2.0
Hungary	...	+ 0.9	— 0.4	NA	+1.3
Slovenia	NA	+ 2.6	+ 0.7	NA	+ 2.1
Eastern Germany	...	+ 0.7 ^c	— 0.9	NA	+ 2.0 ^c
Bulgaria	— 1.5 (1996)	— 0.7	— 0.6	—0.7 (1997)	— 0.3
Romania	— 1.3 (1997)	— 0.4	0.0	NA	+ 1.3
Estonia	— 4.0 (1994)	— 0.3	— 1.3	— 1.6 (1994)	+ 1.4
Latvia	— 4.5 (1994)	— 0.4	— 1.4	— 2.3 (1994)	+ 1.0
Lithuania	— 3.3 (1994)	+ 0.2	— 0.6	— 1.4 (1994)	+ 1.4
Belarus	— 4.6 (1999)	— 4.6	— 0.3	—2.6 (1999)	— 2.5
Republic of Moldova	— 3.7 (1995)	— 1.3	— 1.2	— 2.6 (1995)	— 0.8
Russian Federation	— 6.6 (1994)	— 4.3	— 0.7	— 3.3 (1994)	— 2.1
Ukraine	— 5.0 (1996)	— 3.0	— 2.0 ^d	— 2.3 (1995)	— 1.3
Kazakhstan	— 5.5 (1995)	— 3.6	— 4.9	— 3.6 (1995)	— 2.1

Source: adapted from *Young people in changing societies (1)* and 1999 life expectancy data (Rumiana Gantcheva, personal communication).

^a Ellipsis indicates that the maximum loss is that realized over the first two years of reform.

^b NA means that the country recorded steady improvements throughout the transition period.

^c Concerns 1989–1995.

^d Concerns 1991–1992.

Third, even where a recovery took place, it was often less pronounced than the preceding deterioration. As a result, by end 1999, life expectancy at birth was still lower than its 1989 level in 9 countries of the 16 listed in Table 1 for men and in 6 countries for women.

Fourth, it is estimated that the transitional economies of Europe recorded an excess

mortality of some 4 million people over the 1990s (5). This means that there were 4 million more deaths than those expected on the basis of the standardized death rates prevailing in the region in 1989. To underscore the dramatic nature of this figure, it suffices to mention that the 1929–1933 famine triggered by the collectivization of land in the USSR caused an estimated 9 million additional deaths (8) and that the Second World War caused 3.3–4.6 million civilian casualties in Poland and 7 million in the USSR (9).

Population groups affected

A priori, one could have plausibly expected that the transition's mortality crisis would have most affected the biologically vulnerable groups: children, pregnant women, the elderly and the disabled. In reality, the mortality crisis had very different effects according to such factors as gender, age, level of education, marital status, migrant status, location, ethnic origin and employment status.

Gender

In most countries and for all age groups, men were far more affected than women. Indeed, where death rates soared, the transition exacerbated an already high gender mortality gap. In contrast, in countries where the death rates fell (the Czech Republic, Poland and Slovenia), this gap narrowed. The production of specific hormones seems to provide women with greater protection against stress-related mortality. In addition, women in transitional economies generally count on a more diversified portfolio of activities and social relations that shelter them from the anxiety and dejection experienced by men in periods of rising unemployment, loss of social status and deteriorating family life.

Age group

The fastest relative upswing in standardized mortality rates was recorded in the group aged 20–39 years (which was mostly affected by a rise in external causes of death), while the fastest absolute increase was observed for the group aged 40–59 years (which was mainly hit by a rise in cardiovascular causes of death). For the people above 60 years of age (and even more so in people over 70) there was only a small increase or even a decline in mortality (5). Likewise, infant and child mortality rates declined everywhere – if slowly – over the medium term, including the NIS.

Level of education

Past studies documented the steep mortality gradient between people with different levels of education. Education allows easier acquisition and processing of new types of information (essential during periods of rapid transformation), greater employment mobility, better management of resources and better screening of the risks connected with unhealthy behaviour. *Ceteris paribus*, a rise in overall mortality was therefore expected to affect disproportionately those with low education. Reality proved to be even grimmer than this prediction. In fact, mortality differentials by level of education widened during the transition. Shkolnikov et al. (10), for instance, show that, in the Russian Federation, the temporary life expectancy gap between the best and least educated men and women aged 20–69 rose from 1.63 and 1.44 years in 1988–1999 to 1.89 and 1.75 years in 1993–1994, respectively.

Marital status

Stress-related mortality is well known to be higher among people who are widowed, divorced, separated or single than among those who are married (11). The crisis was therefore expected to hit the unmarried population disproportionately hard. This phenomenon was exacerbated by the surge in the number of widows and widowers due to the 1992–1994 rise in adult mortality, huge declines in marriage rates and – in Russia, Ukraine and Belarus – a rise in the divorce rates over 1989–1995. Part of the rise in aggregate mortality can thus be explained by the gradual but steady increase in the proportion of the unmarried adult population over the last ten years. The unmarried–married mortality differential appears to have widened further during the transition, however, and thus to have contributed to a rise in aggregate mortality. For instance, even in the Czech Republic – which experienced a fall in death rates since 1991 – the relative risk of death of divorced to married men rose from 2.03 in 1990–1991 to 2.27 in 1995.

Migrant versus settled populations

Migrants, especially distress migrants, normally face a higher risk of mortality than people who remained in their community. For instance, Dzúrová (12) indicates that, in 1991–1992, Czech people living in their birthplaces had a considerably lower probability of dying than people who had recently migrated. The impact on aggregate mortality of this phenomenon is likely to have risen in intensity as, with the onset of the transition, domestic and international migration in the region skyrocketed following the breakdown of states, the return of troops posted abroad, large flows of refugees fleeing ethnic strife, industrial restructuring and unemployment.

Location

In most of the region, mortality rates have traditionally been higher in rural than in urban areas. Since 1990–1992, however, this tendency started to be reversed, probably because of greater unemployment, stress and crime in the cities, particularly monoindustrial cities (13), and because of an increase in the number of deaths in towns of vagrant rural residents. In the Russian Federation, for instance, the urban–rural difference in life expectancy fell from 2.4 to 0.8 years between 1992 and 1994, owing to the faster rise of urban mortality rates for violent causes and cardiovascular problems (14).

Ethnic origin

Mortality appears to have risen faster among some ethnic groups than others. For instance, Krumins & Usackis (15) show that, while the standardized death rate of ethnic Russian males living in Latvia was 10% higher than for the ethnic Latvians before the transition, it was 17% higher in the mid-1990s. These results might, however, also reflect people's changing perceptions of their ethnic identity following the independence of Latvia. Similarly, Džúrová (12) found a high correlation between cross-district mortality, ethnic heterogeneity and the proportion of the Roma population. Jozan (16) reports similar results for Hungary and Romania. It is unclear, however, whether these differentials would still hold after controlling for level of education, skills, unemployment and so on.

Employment status

Controlled studies of the industrialized countries have shown that sudden loss of employment is a major cause of stress, cardiovascular and mental problems, and death (17–19). A recent review of grouped data for the economies in transition (5) confirms the existence of a strong correlation between the rise in unemployment and other labour-market changes (such as faster employment turnover) and mortality changes in the Czech Republic, eastern Germany, Latvia, Poland and the Russian Federation. In the Czech Republic, for instance, overall mortality fell in line with the persistence of unemployment at a low 3%. The robustness of the relation between unemployment and health status was confirmed further confirmed by analyses of individual data for Denmark and eastern Germany (5).

Conclusion

In conclusion, the mortality crisis in transitional economies seems to have mainly affected an underclass of young and middle-aged men with limited education and skills, who were often unemployed, living in urban areas and coming from incomplete families and migrant or ethnic minority backgrounds.

Immediate causes of death

The overall surge in death rates during the 1990s resulted from diverging trends for different groups of diseases. By and large, one can identify two broad tendencies in mortality: stability or decline, or fast increase.

Mortality due to respiratory ailments mainly followed a declining trend or remained stable until 1994, possibly because of declining emissions of pollutants into the atmosphere caused by the sharp industrial recession of those years. After 1994, the trend became less stable but in no country caused a sizeable rise in deaths. Of limited importance also were the changes in cancer mortality, which showed a heavily trended slow upward increase and played a commensurably greater role in the countries with smaller shifts in overall mortality.

Close to 40% of the recent increase in standardized male mortality and a smaller but still important share of female mortality appear to be due to an epidemic of cardiovascular diseases: ischaemic heart disease and sudden deaths to circulatory problems and stroke. Interestingly, falls in cardiovascular (and external-cause) deaths accounts for most of the decline in mortality recorded since 1991 in the central European countries, and in the Russian Federation and Baltic states since 1995–1996. Second, external causes of death (poisoning, accidents, suicide and homicide) explain the next most important share of the overall increase in mortality among young men, especially in the NIS. For instance, the murder rate among males aged 35–39 years in the Russian Federation increased by 223% between 1989 and 1993 alone (6). The transition was also characterized by an increase in deaths due to motor, train and airplane accidents, alcohol and other types of poisoning, accidental drowning, fires and accidents at work: that is, deaths related to the weakening of the state's regulatory capacity and the erosion of safety at work.

Third, to a lesser degree, the recent escalation in mortality was due to an upsurge in deaths due to cardiovascular and digestive diseases, including stress-related diseases such as ulcers and cirrhosis of the liver.

Finally, mortality due to the so-called diseases of poverty (infectious, nutrition-related, parasitic and sexually transmitted diseases) showed a sharp percentage increase from very low levels. While very pronounced in relative term, this rise was almost negligible in absolute terms. The difficulties faced in this area are underscored by the steady rise in the number of cases of diphtheria, tuberculosis and – more recently – HIV/AIDS. This is possibly explained by the emergence of an underclass of marginal groups (including vagrants, intravenous drug users and commercial sex workers) whom the public health system does not reach.

Explanations of the mortality crisis

Explanations emphasizing past problems and entailing no policy response to the mortality crisis

Many of the most common explanations of the transition's mortality crisis emphasize factors that do not require any public policy response, either because the problem does not really exist or because it depends on past problems and actions whose influence can no longer be offset. The most common of these explanations include: *glasnost* in statistics and measurement problems, so-called ecocide and cohort effects.

Glasnost in statistics and measurement problems

The deliberate misclassification of the deaths due to work injury, alcoholism, suicide, homicide and so on before the transition is well known. Nevertheless, removing this distortion had little effect on the global mortality picture in transitional economies and is not sufficient to lend credibility to the explanation of *glasnost* in statistics. To start, official sources revealed the health crisis of the 1970s and 1980s. Second, the pattern of mortality changes observed in the 1990s throughout the region is very uniform, a fact that is hard to attribute to the coordinated falsifications of many independent statistical agencies. Third, a few economies in transition experienced falls in mortality, a fact that would entail that the past authorities reported worse results than were achieved. Finally, detailed investigations of death statistics indicate that, for a few decades before the transition the quality and coverage of statistics were high and – with few exceptions – of standards similar to those of the western countries (20).

The new mortality data could also have been biased by changes in statistical conventions (as in the case of infant mortality) and by changes in disease classification and boundaries of administrative units entailed by the transition. A detailed examination of the data (5), however, shows that these changes might explain small variations in mortality for narrow subpopulations, but not the rise in the total number of deaths or its persistence after the changes in definitions were introduced.

Ecocide

Proponents of this argument say that the mortality crisis is real but attribute it largely the current and lagged effect of the long-term environmental neglect in the countries of the region, which has been widely publicized in the coverage of a series of ecological disasters. During the socialist era, acute environmental problems indeed caused a higher incidence of deaths due to bronchitis, pneumonia, influenza, some types of cancer and genetic disorders than in other countries at the same level of industrialization.

Nevertheless, the ecocide thesis cannot explain the mortality crisis of transitional economies. First, during the initial phase of reform, emissions of harmful substances declined sharply, in line with a large contraction in industrial production and the adoption of less polluting technology. Second, the shift to international market prices for energy and raw materials further reduced their wasteful use. In the Russian Federation, for instance, the emission of harmful substances into the air dropped from 34 million tons in 1990 to 21 million tons in 1995–1996 (21).

The fact that ecocide is not a central factor in the transition mortality crisis is confirmed by the unchanged pattern of mortality due to respiratory diseases among children and the elderly (the population groups most affected by such ailments) and the overall population. Likewise, as noted, the incidence of cancer did not register any surge and continued to rise slowly according to its long-term trend.

Cohort effects

Another thesis put forward is that the mortality crisis of the Russian Federation and Ukraine could be explained, at least in part, by the delayed consequences of the hardship and debilitation experienced by the people born during the 1929–1934 famine or the Second World War.

Research in this area, however, does not support this hypothesis. An analysis of cohort mortality in Ukraine in 1965–1994 concludes that there is some evidence that the male war-birth cohort experienced higher mortality in the 1990s than the adjacent cohorts, but that this factor is insufficient to explain the overall increase in mortality since 1989 (22). A similar analysis for the Russian Federation (23) shows that the three-year cohort born during the difficult years 1942–1944 experienced an increase of 16% in the risk of dying in the 1990s in relation to the adjacent cohorts. Similarly, the cohorts born between 1933 and 1934 experienced a 9% higher risk of dying in relation to the cohorts born in 1931–1932. The study in question, however, notes that the part explained by the debilitation hypothesis is not too important, as the overall increase in death rates over 1991–1994 for the males aged 40–50 and 50–60 years exceeded 75%. Second, the percentage increase in death rates during the transition was much higher for those aged 20–40: that is, cohorts born in a period of relative prosperity. Third, the debilitation hypothesis would suggest that the women born during the famine of 1929–1933 and the Second World War should suffer higher risks of death later in life, a fact only partially borne out by the data for the 1990s. Fourth, during the transition, the rise in mortality hit areas of the former USSR that had not been affected by the demographic catastrophes of the twentieth century. Symmetrically, the mortality rates of cohorts born during the Second World War fell faster than those of the preceding cohorts in other areas severely affected (such as Poland).

Explanations emphasizing the impact of current problems and entailing sectoral responses to the mortality crisis

These studies emphasize that current – as opposed to past – factors, such as those discussed above, explain most of the post-1989 changes in mortality. They thus generally agree with the findings of Cornia & Panicià (5), which show that 5.3 of the 6.6 years of the loss of male life expectancy observed in the Russian Federation between 1989 and 1994 can be attributed to current effects and that long-term effects account for only 1.3 years. Nevertheless, these analyses, too, poorly explain the increase in mortality observed over the last decade.

Recession and impoverishment

To be sure, the belt tightening imposed on most households by the recession entailed a drop in food expenditure and consumption. Nevertheless, in view of the high food intake prevailing before the transition and of the considerable scope for substituting expensive sources of nutrients with cheap ones, even large drop in incomes and consumption expenditure did not much exacerbate the risk of death due to undernutrition, except for a very tiny share of the population (24). Instead, the reduced access to shelter, basic hygiene and basic health care of a class of marginal, vagrant and homeless people caused the worrying increase in deaths due to infectious and nutrition-related diseases among male adults. Thus, the impoverishment thesis may be relevant only for very few very poor and isolated parts of Romania, the Russian Federation and Ukraine. For the latter country, for instance, Adamets (25) reports that starvation accounted for 25 deaths out of a total of almost 800 000 deaths recorded in 1995.

Weakening of the health care system

Most central European countries increased their real per caput expenditure on public health after 1989. In the Czech Republic and eastern Germany, these greater allocations of funds allowed increases in the number of heart interventions and improvement in the overall quality of public health care. At the other extreme, countries such as Latvia, Lithuania, the Russian Federation and Ukraine saw their real health expenditure per caput fall by between 15% and 30% since the onset of the transition. In these countries, the rise of deaths due to treatable diseases, the temporary breakdown of vaccination systems in early 1990s and the rise in death rates among hospitalized patients (14) indicate that cuts in public expenditure played some role in the transition mortality crisis.

Nevertheless, reduced access to and declining quality of health services did not play a central role in the mortality crisis of the transitional economies. To start with, the erosion of health services cannot elucidate why mortality increased (or decreased) faster among men than women, who account for a broadly equal share of hospital

patients. In addition, this thesis cannot explain why mortality surged only for a few diseases and not for others such as cancer, respiratory diseases and neonatal and perinatal problems. Finally, changes in the functioning of health services cannot explain the surge in the number of violent deaths, which accounted for an important share of the total increase in mortality.

Worsening lifestyles (diet, smoking and drinking)

Those who ascribe the mortality crisis to worsening lifestyles focus on causes of death and population groups like those recently affected in eastern Europe. According to this explanation, however, mortality should have risen slowly – and after a given time lag – as a result of protracted exposure to risky health behaviour. In this model, only accidental deaths respond rapidly to an increase in alcohol and drug consumption (a point discussed in the next section). In addition, the risk factors mentioned above should have worsened, a fact not always borne out by the evidence discussed below.

During the transition, market forces triggered an improvement in the structure of the diet. Changes in relative prices and improvements in trading raised the consumption of minerals and vitamins from fruits and vegetables. Similarly, a rise in the relative price of meat, milk, and dairy products reduced the intake of saturated fats, possibly reducing the risk of cholesterol-induced mortality. Mielecka-Kubien & Zatonski (26) claim that the falls of 25% and 60% in the consumption of animal fat and butter, respectively, have largely driven the drop in cardiovascular mortality among Polish men since 1992. The speed of the fall in mortality following these changes, however, appears questionable. Over 1989–1995, tobacco consumption appeared to have declined slightly or stabilized at high levels throughout the region, as incomes dropped, prices of imported cigarettes soared and long-term educational efforts in this area produced their effect. These data do not include, however, information on the consumption of self-produced and smuggled cigarettes. In any case, death rates due to lung and other types of cancer are still rising, following a slow trend, seem to be little related to recent changes in smoking prevalence and in any case cannot explain the rapid surge in circulatory and violent deaths.

Mounting alcohol consumption

Official data suggest a general decline in alcohol consumption in the region since 1989, but it is well known that national sales statistics cover less than 50% of real consumption (27). Alcohol intake during the transition was thus estimated indirectly on the basis of the increases in alcohol-related deaths: those due to alcohol poisoning and psychosis, suicide, accidents and other violent deaths, cancers of the upper respiratory and digestive tracts, and chronic liver diseases such as cirrhosis. The clinical literature allows the apportioning to past and current alcohol consumption a share of the deaths by each cause.

By applying this or other indirect methods, it appears that alcohol consumption rose perceptibly in several economies in transition. In the Russian Federation, indirect estimates by Skolnikov & Nemtsov (28) show that alcohol intake surged from 11.8 litres per caput in 1989 to 14.5 litres in 1993 and that the increase contributed to a rise in accidental deaths. Likewise, in Poland, consumption per caput increased from 8 litres to 11 litres between 1988 and 1991, but fluctuated around that level over the subsequent five years. These indirect estimates allowed Moscalewicz et al. (29) to conclude that 32% of the overall surge in male mortality over 1990–1994 in the Russian Federation was to be tentatively attributed to greater alcohol consumption and that the equivalent figures for Lithuania (in 1990–1994) and Poland (in 1989–1991) were 40% and 27%, respectively.

A key issue in this debate concerns the reasons for the recent increase in alcohol consumption (30). Possible explanations include, first, trend inertia, reflecting deeply rooted consumption habits and, second, changes in incomes and the relative prices of alcohol. In the Russian Federation, for instance, the alcohol-purchasing power of wages rose by 48% between 1989 and 1993 because of a drop in the relative price of alcohol greater than that in the average wage. The third explanation is a relaxation of the anti-alcohol policy. During the transition, educational campaigns were stopped, the treatment and re-education of alcoholics lapsed and the norms regulating the sale of alcohol were loosened considerably. The final explanation is stress. Alcohol is a stress reliever, and the need for binge drinking could have been heightened at a time of painful economic and social adjustments. Alcohol intake appears therefore to have emerged as an important direct or intermediary cause of the mortality crisis in transitional economies.

The alcohol hypothesis, however, does not explain why mortality has risen, albeit modestly, in eastern Germany, where there is no evidence of an increase in alcohol consumption, or why alcohol-related mortality fell throughout the transition in the Czech Republic and, after 1992, in Poland, while alcohol consumption remained stationary. Similarly, alcohol-related deaths have recently fallen in the Russian Federation and the Baltic states, where there is no evidence of a drop in alcohol intake. Finally, the alcohol hypothesis cannot explain the huge rise – and subsequent fall – in cardiovascular and other deaths, which, while related to stress, are not mediated by alcohol intake.

Thus, while alcohol is an associated cause of death in 27–40% of the excess male mortality in the region, and for much smaller proportions of female mortality (as women consume only a fraction of what men do), it fails to explain two thirds of the rise in male mortality and over nine tenths of the rise in female mortality. The main cause of this epochal disaster must be still sought elsewhere.

Acute psychosocial stress: an explanation that requires a broad-based policy response to the mortality crisis

Acute psychosocial stress is increasingly recognized as a key factor in sudden deaths: those due to heart problems and hypertension, alcohol psychosis, neurosis, homicide, suicide, accidents, ulcers and cirrhosis of the liver. These were the very causes of death that rose in importance during the transition. Serafino (31,32) defines stress as:

the condition that results when person/environment transactions lead the individual to perceive a discrepancy – whether real or not – between the demands of the situation and resources of the person’s biological, psychological or social systems.

Deaths due to acute psychosocial stress thus entail: increased strain and pressure to adapt to new and unexpected situations for which established individual responses are no longer effectual, appropriate coping behaviour is unknown and the public policy response is inadequate.

Epidemiological research has shown that – in the absence of mitigating measures – acute stress leads to physiological and psychological arousal that affects health status via direct and indirect pathways. Marmot & Bobak (33) have reviewed the direct effects of stress.¹ They found that stressful situations cause a higher secretion of cortisol, endorphins, platelets, fibrinogens and subsequently fibrinogenolysis: substances affecting the level of plasma lipids, blood coagulability, blood pressure and cardiovascular reactivity, the development of central obesity, responses to inflammation or infection, and the risk of depression. In addition, chronic exposure to stress was found to cause coronary artery atherogenesis and a significant suppression of T-cell response. Finally, psychosocial stress has been shown to provoke an indirect effect on health through the increased use of stress relievers such as alcohol, tobacco and drugs, which lead to risky health and social behaviour and reduce the ability to maintain emotional balance and coherent behaviour. The health impact of stress varies considerably from one person to another, however, owing to differences in genes and in individual abilities to adjust to new situations.

What stressful situations have emerged on a significant scale during the transition? Among the most important, one can mention unemployment, fast labour turnover, growing inequality and social stratification, distress migration and a decline of the share of the population living in stable and complete families.

¹The conclusions arrived at below derive from tests conducted in an experimental setting on small numbers of human beings or on monkeys. While they provide very accurate and controlled results, their validity faces a number of limitations due to: first, the extrapolation of results from animal studies to human beings; second, the generalizability to real life of results of experimental studies in human beings (in which stress is reproduced through an acute acoustic or visual disturbance); and, third, the scarcity of large population studies in human beings (small studies face the usual problem of sampling errors and low representativeness).

Rises in unemployment

There is evidence that mortality rose the most in the countries, districts and years in which unemployment increased and other adverse labour market changes took place (5). This confirms the results of studies of factory closures, large lay-offs, and follow-up studies of unemployment, which replicate quasi-experimental conditions and have provided evidence of higher mortality rates among the unemployed (34,35). The differential risk of death was found the greatest for accidents and violence, alcohol-related diseases, traffic accidents and circulatory diseases.

Through which pathways does unemployment affect health? The most obvious effect is that mediated by the loss of income. Unemployment, however, affects people in other ways. As noted by Sen (36), it generates a loss of skills, cognitive abilities, motivation and sense of confidence and control. Second, unemployment can be a source of psychological harm, because of the loss of self-respect; the feeling of being unwanted, unproductive, dependent and without a social role; and rising anxiety about the future. Third, unemployment may also erode social norms and cause an increase in the crime rate among the jobless. While material deprivation plays a role in the increase in crime, so does the greater sense of exclusion felt by the jobless. Finally, loss of employment can disrupt family and social relations and is associated with increasing alcohol consumption and family violence.

The time and skill profile of the health impact of unemployment is key to the understanding of the way stress operated during the transition. While the unemployed always have, on average, a higher death risk than the working population, this gradient varies with the duration of unemployment. Indeed, the loss of a job affects the health of workers in different stages, as suggested by the stages hypothesis (37). During the first few months, loss of employment causes only modest health effects, as the workers still hope to find new jobs. The impact becomes more serious, particularly among middle-aged and low-skilled workers, during the second stage, when the loss of employment appears more permanent; the jobless worker becomes increasingly pessimistic, and symptoms of poor mental health tend to increase in intensity. In the third phase, the individual becomes fatalistic and starts adjusting mentally to what he or she considers to be the new normal situation. If one accepts the stage hypothesis, increases in aggregate mortality are driven (with a time lag) by rises in – and not by the level of – unemployment.

There is evidence also that the health impact of losing a job is related to the expectation of becoming unemployed. Indeed, the impact is larger among workers who have been permanently employed and had little expectation of being laid off. It is moderate among workers with expiring fixed-term contracts (who had some expectations of impending unemployment), and minimal among the never employed (such as young people in search of their first jobs), who suffer less from the continuation of joblessness (38).

Growing undeserved income disparity

Past analyses of market economies have emphasized the negative correlation between income concentration and health outcomes; Kawachi et al. (39) survey the relevant literature. First, high inequality may reduce access to a range of public services and benefits. As social distance widens, the disparity of interests among economic groups increases; taxation and the provision of educational and health services decline; residential segregation rises, and political participation and the efficacy of government institutions diminish. Second, high inequality erodes social cohesion: the relations of interpersonal trust, mutual support, collective action and redistribution existing at the local level. Social cohesion enhances health status by promoting a rapid diffusion of health information, by exerting control over deviant health-related behaviour and criminal activity, and by providing mutual and unrequited interpersonal help among community members. Finally, health status in unequal society is also affected through psychosocial pathways. Strongly hierarchical societies appear to be affected by a high incidence of cardiovascular problems (possibly due to lower latitude and sense of control at work), lower social integration (due to differences in consumption patterns and interests), less involvement in community life and greater personal isolation – an important cause of morbidity and mortality.

Several of these effects emerged in the countries in transition affected by rapid rises in social stratification. On the one hand, the economies of central Europe experienced moderate surges (4–6 points) in Gini coefficients (40). These countries contained the fall in the tax/gross domestic product ratio and were thus able to continue financing the social services and benefits inherited from the socialist era and to introduce new benefits – such as unemployment compensation and social assistance – needed in a market economy. On the other hand, in the NIS and south-eastern Europe, the Gini coefficients rose by an astounding 10–20 points, social transfers collapsed and their targeting deteriorated (40).

In these countries, rapid rises in assets and income inequality strengthened the ability of the new élites to resist taxation; the Russian Federation is a good example of this phenomenon. This reduced the ability of the state to ensure law and order and basic social services and to sustain the quality of government institutions. In addition, while social cohesion had long been a hallowed value, the demise of the old system was accompanied by the creation of few new civil-society organizations. Third, the transition placed a considerable psychological burden on those who lost out: namely, middle-aged, semi-skilled industrial workers, collective farmers and Party cadres. As the new élites took over, these losers experienced envy, rage, hostility, humiliation, hopelessness, sense of incompetence, lack of public recognition and feelings of unwantedness (*nevostrebovanmost* in Russian). Social disorientation was acute for the elderly and middle-aged adults who saw the vanishing of the values, norms and savings of their lifetimes.

While measuring the impact of these changes on health status poses huge problems,

initial regression analysis carried out on the 12 Russian macro regions over the 1989–1994 period (41) suggest that a 20 point increase in the Gini coefficient reduced life expectancy at birth by a sizeable 1.5 years. This is lower, however, than the impact of a 10% increase in the unemployment rate, which was estimated to reduce life expectancy by about 3.5 years.

Erosion of the family and a growing number of people living alone

At all ages, stress-related mortality is significantly higher for people who are widowed, divorced and single than for people who are married. The latter supposedly have healthier lifestyles, are less exposed to stress and have greater access to social support networks than people living in incomplete families. Excess mortality among the unmarried is always more pronounced for men than women. Ruzicka (42) suggests that the increase in suicides observed in the developed countries during the 1970s and 1980s may have been partly due to a decline of marriage rates and an increase in the frequency of divorce.

As noted, during the transition, the percentage of widows and widowers in the adult population rose, the crude marriage rate fell by 16–54% and the divorce rate edged upwards by 10–15% in Belarus, the Republic of Moldova, the Russian Federation, and Ukraine: the countries that experienced the most pronounced rises in mortality (1). While even large annual shifts in these rates modestly affected the share of married adults in the total, the continuation of this trend over a decade perceptibly raised the number of unmarried adults, who thus faced a higher risks of death.

Migration

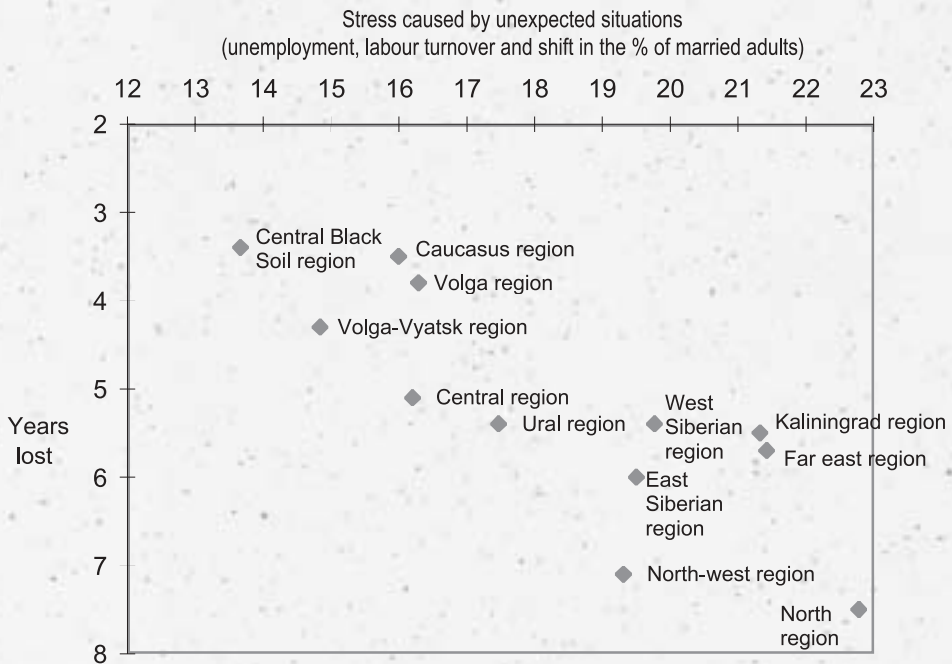
Past analyses have shown that migrants face greater mortality risks than people who remained in their home communities (43). Since 1989, around 9 million people have moved within or between the NIS alone (people seeking work, political refugees, and people fleeing conflicts and a large number of returnees from abroad). For many of them, migration, particularly distress migration, entailed considerable material hardship, greater disorientation and loss of control (owing to the inability to operate easily in new environments), the breakdown of social relationships, the redefinition of survival strategies, frequent housing problems, and greater stress as a result and homelessness in extreme cases.

Interaction between stressors

Changes in the stress factors described above often tended to reinforce each other and to interact negatively with greater alcohol consumption and reduced access to health services. For instance, the faster-than-average rise in unemployment recorded between 1992 and 1994 in the northern part of the Russian Federation caused a high labour turnover, the spread of an unregulated grey economy, and increases in employment-

related migration under difficult circumstances and family breakdown. All these factors thus interacted to cause a high level of stress (Fig. 1). The northern districts are precisely those that experienced the biggest increases in stress-related deaths. The southern part of the Russian Federation was less affected by unemployment, inequality, family instability and migration. In these areas, the increase in stress and the loss of life expectancy among males was much more contained.

Fig. 1. cumulative changes in male life expectancy at birth 1989–1993 in relation to the level of stress caused by unexpected situations over the same period



Source: Cornia, Giovanni Andrea and Renato Panicià (2000): *The mortality crisis on transitional economies*, OUP, Oxford, figure 1.2

In conclusion, the peculiar pattern – by age, gender, education and skill level, location, cause of death and time profile – of the mortality crisis of the 1990s suggests that the recent mortality upsurge in the former Soviet bloc is mainly the result of a poorly managed adjustment crisis, in which several negative factors (unemployment, inequality, distress migration and family breakdown) interacted and caused a sharp rise in uncontrolled stress.

Conclusions: a broad-based policy response is needed

The unprecedented mortality upsurge experienced by many European economies in transition during the 1990s is the result of an acute adjustment crisis overlaying a slow long-term deterioration of health. The crisis was fuelled by a massive increase in psychosocial stress induced first and foremost by unanticipated rises in unemployment, turnover and job insecurity but also by the erosion of the family, mounting distress migration and rising social stratification. In the countries experiencing a sharp rise in death rates, public policy did little to contain the health impact of growing social stress. Indeed, while the crisis was unexpected, it was also rapidly forgotten.

A solution to the mortality crisis still affecting many of the countries of the former Soviet bloc requires vigorous measures to reverse the long-term adverse trends in health status in the region (which are not the focus of this paper) and measures to prevent/control the transition-related psychosocial stress. Reversing the negative long-term trend in health status will require efforts to improve lifestyles, to educate the people about the risks posed by smoking, poor diet and excessive drinking and to strengthen curative health care.

Of greater relevance here is the prevention of an acute mortality crisis like the one of the 1990s through broad-based measures to control the occurrence of psychosocial stress caused by mounting uncertainty, anxiety, instability and personal insecurity. Policy responses in these areas are needed because of both their specific benefits (better labour market outcomes, greater family stability, lower insecurity and so on) and their favourable impact on health.

To start, active and passive labour market policies, such as those implemented by the countries of central Europe will be needed. These have to focus on a properly paced industrial restructuring and support to employment through training, public works and time-bound wage subsidies, as well as credit programmes to promote self-employment. One of the reasons for the low unemployment, high re-employability of redundant workers and declining mortality observed in the Czech Republic during the 1990s was the active management of the labour market and the public support to credit and training programmes for the development of small enterprises (44).

Second, a policy approach to control the sources of acute stress will require more vigorous initiatives than those undertaken in the past to contain large surges in income inequality and social exclusion, family breakdown and distress migration.

Third, deaths due to external causes and infectious diseases can be avoided by strengthening the regulatory role of the state and the services dealing with a growing class of marginal people. Measures in this field would have the double advantage of reducing the rise in violent deaths (thanks to better policing, efficient deterrence by

the courts and active assistance to and control of the marginal groups) and containing overall stress by improving security. Greater regulation of alcohol consumption would also be needed to reduce violent deaths, cirrhosis and throat cancer. This can be accomplished through raising alcohol prices (though increases in home brewing might in part compensate for the reduction in open demand); reducing the number of sales outlets, their opening hours and sales to minors (key measures that require strong government commitment); and carrying out educational campaigns to modify drinking behaviour.

Solving the transition's mortality crisis – and the very success of market reforms – requires much more vigorous responses than those adopted so far in large parts of the region. Energetic and rigorous market reforms are needed, but, as the cases of the Czech Republic and Poland have underscored, they must call for a realistic pace of industrial restructuring, and strong labour market, social sector and distributive policies must be in place.

Ignoring the costs of the transition process in deaths will not help to solve the deep economic and social crisis affecting the region, but make it more severe.

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Promoting workplace wellbeing— a major challenge²

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The concept of wellbeing and its promotion have been integral parts of WHO's original definition of health (1). This is why the main objectives of the Workshop on Promotion of Wellbeing in the Workplace – Options and Obstacles were: to identify barriers to establishing an effective, equitable, and sustainable strategy to promote health and wellbeing, and to clarify options (policy, programme, administrative, educational, public relations, structural, etc.) to overcome these barriers.

The Workshop was further designed as a follow-up of the WHO Verona initiative on investment for health. In the present context, investment is seen as a commitment of resources (money, technology, human resources, etc.) to gain a return, to spend or devote for future advantage or benefit in terms of not only well being but also socioeconomic and health development. Seen in such a way, the investment does not constitute a burden but rather an opportunity for increasing returns.

The Workshop was based, in part, on a grassroots, civil-society approach, which involves the promotion of people's abilities and motivation, empowering them to contribute to a common good.

Wellbeing

Before discussing how wellbeing could and should be promoted we need to define what is meant by wellbeing. A dictionary defines the term as “a state of being healthy, happy or prosperous; welfare”, and defines welfare in turn as “health, happiness, and good fortune; wellbeing” (2).

Three decades ago, Campbell & Converse (personal communication, 1970) defined wellbeing as a composite measure of satisfactions as perceived by each individual and by each group, and of happiness and gratification. Measures to secure it can concern overall as well as component life satisfaction, involving areas such as health, marriage, family, job, housing, financial situation, educational opportunities, self-esteem, creativity, competence, belonging and trust in others.

²Based, in part, on Levi, L. *The other half of medicine: the concept of psychosocial stressors, and its implication for health and the health professions. Forum trends in experimental and clinical medicine*, 8(3): 36–45 (1998), and Levi, L & Levi, I. *Guidance on work-related stress. Luxembourg, European Commission, 2000.*

The Swedish Constitution Act identifies the personal, economic and cultural welfare of the individual as the basic goal of public activities, and recognizes the duty of public agencies to safeguard the right to work, housing and education, and to promote social welfare and security and a good living environment. Accordingly, the Act aims at promoting the wellbeing of the population, directly or indirectly.

A good job (3) helps to give life purpose and meaning. It provides the day, week, year and lifetime with structure and content. The worker gains identity and self-esteem and is able to give and receive social support in social networks. In addition, a job provides material advantages and a reasonable living. All these components are of great importance for the wellbeing of the working population.

Is there a problem?

In the important sector of working life, available data point to very considerable and increasing problems in terms of both exposures and outcomes. A recent survey of 21 500 workers (4), randomly selected from the total working population of 159 million people in the 15 member states of the European Union (EU), finds that work-related stress, its causes and consequences are all very common. Conducted by the European Foundation for the Improvement of Living and Working Conditions, the survey yielded the following results (4).

The most common work-related health problems, reported in face-to-face interviews are: back pain (reported by 33% of workers), stress (28%), muscular pains (neck and shoulders) (23%) and burn-out (23%). These health problems, which are on the increase, are statistically related to poor working conditions.

Exposure to stressful physical environments and to poor physical design remains prevalent. There is a continuing intensification of work – this had been one of the main factors emerging from previous surveys (in 1990 and 1995). Workers have increasing control over their work, although one third still report little or no such control.

The nature of work is changing: it is increasingly client driven and oriented towards information technology. Flexibility is widespread in all areas: working round the clock (with fluctuating schedules), extensive use of part-time work (17% of workers), multiskilling and teamwork, empowerment and increasing use of temporary workers. Temporary workers (employees with fixed-term contracts and workers from temporary agencies) continue to report more difficult work situations than permanent employees. Flexibility is not always conducive to good working conditions. Nevertheless, traditional features of work organization remain; repetitive and monotonous work is still prevalent. Gender segregation remains strong and detrimental to women.

These conclusions (4) find further support in a number of other recent analyses, such as those of the European Commission (5), the International Labour Office (6), the European Agency for Safety and Health (7,8), a conference on work-related stress and health in three post-industrial settings (9), the National Institute of Occupational Safety and Health in the United States (10) and the Health and Safety Executive in the United Kingdom (11). Thus, strong circumstantial evidence suggests that occupational (and other) stressors, stress, and work- and stress-related ill health cause very considerable and growing problems in the EU, other countries of the WHO European Region and elsewhere.

Determinants of health and disease at work

Present knowledge of the main determinants of health comes from epidemiological as well as experimental research, in both animals and human beings. In-depth reviews of this knowledge can be found in a special issue of *Acta physiologica scandinavica* (12) and a paper by McEwen (13).

A complementary approach by Wilkinson (14) presents support for the statement that social, rather than material, factors now limit health and quality of life in developed societies. In such countries, poorer people may have annual death rates anywhere between twice and four times as high as richer people. Wilkinson notes that blue-collar workers almost invariably exhibit much greater morbidity and mortality than white-collar workers. This is true for every major group of causes: infections; cancer; cardiovascular, nutritional, metabolic and respiratory diseases; accidents; and nervous and mental illnesses. All of them show a social-class gradient. This is also true for all-cause mortality, after controlling for the effects of major individual risk factors. Wilkinson (14) points to “the toxicity of social circumstances and patterns of organisation” and demonstrates their effects on health as mediated by either the link between health, psychosocial factors and stress and/or the link between health, psychosocial factors and health-related behaviour (5). These flows of events are not simply an effect of the absolute level of income, however, but are more related to what Wilkinson calls the effects of social relativities (14). In the developed world, the best health is found not in the richest countries but in the most egalitarian: those with a relatively small income gap between the richest and the poorest, those characterized by social cohesion, social morality and social capital.

Summarizing available evidence, Wilkinson & Marmot (15) point out that – even in the richest countries – the better off live several years longer and have fewer illnesses than the poor: “These differences in health are an important social injustice, and reflect some of the most powerful influences on health in the modern world. People’s lifestyles and the conditions in which they live and work strongly influence their health and longevity”.

Within this broad framework, poor occupational health is strongly conditioned by a poor match between workers and their work, conflicts between workers' roles at work and outside it and workers' lack of a reasonable degree of control over their work and their lives. A multitude of stressors can cause stress at work. According to Levi & Levi (5), common stressors include:

- over- and underload;
- inadequate time to complete one's job to one's own and others' satisfaction;
- lack of clear job description, or chain of command;
- no recognition of or reward for good job performance;
- no opportunity to voice complaints;
- many responsibilities, but little authority or decision-making capacity;
- uncooperative or unsupportive superiors, coworkers and/or subordinates;
- no control over or pride in the finished product of one's work;
- job insecurity, no permanence of position;
- exposure to prejudice against one's age, gender, race, ethnic background or religion;
- exposure to violence, threats or bullying;
- unpleasant or hazardous physical work conditions;
- no opportunity to utilize personal talents or abilities effectively;
- chances for a small error or momentary lapse of attention to have serious or even disastrous consequences; and
- any combination of the above.

These and related stressors can be categorized by utilizing any or all of three important models of work-related stress – the demand–control–support model, to be described below (16,17), the person–environment fit model (18–23) and the effort–reward model (24). This paper considers the three key components of the demand–control–support model: occupational demands, decision latitude and social support.

Occupational demands (or workload) can be too heavy in relation to the abilities, training and needs of the individual worker, for example, if the employer wants him or her to perform not optimally, but maximally, all the time. Lean production may develop into lean and mean and eventually anorectic production. There are, of course, limits to the human ability for sustained maximum performance.

The demands may be quite reasonable quantitatively, but not qualitatively. Examples may include the introduction in a workplace of information technology software without sufficient training of the staff, or assigning new duties to staff that have been made redundant, without providing adequate retraining. In contrast, quantitative and/or qualitative under- or unemployment can be as stress producing and as detrimental to wellbeing as overemployment.

Some argue that unemployment may be of concern for governments, but not employers. Unemployed people have no working conditions or work environment and are accordingly not the responsibility of management. A great proportion of all those

who still hold jobs, however, are chronically afraid of losing them. This is very much part of the conditions of work and thereby a concern for all parties on the labour market. Another key component is control. In the early stages of the industrial revolution, it was assumed that the workers were motivated only by the remuneration they received. During the last few decades, however, it has become increasingly clear that workers dislike and suffer from being treated as production units only. Adult, reasonably well educated workers expect to be treated as such, to be given responsibility, to be allowed – within reasonable limits – to decide how a specific task should be accomplished. Denying them such opportunities may mean increasing stress and decreasing wellbeing, particularly if the concomitant work demands are high. In contrast, workers have been shown to perform optimally and feel well when allowed influence and say over their own conditions of work, again within reasonable limits. If allowed to exercise such an influence, the worker is more likely to experience the situation as a challenge, not a burden.

From the dawn of history, human beings have been genetically programmed to interact with fellow human beings in mutually supportive groups. This social support includes not only superiors' and coworkers' appreciation and support for the worker's self-esteem but also support for his or her interpretation and appraisal of the environment. It further includes a feeling of belonging and tangible support. The absence of some or all of this deprives the worker of an important stress-buffering and wellbeing-promoting factor.

Designing an index of social capital and relating it to mortality and health across the United States, Putnam (25) found higher social capital to covary with lower mortality and better health. A report by the European Commission (26) indicates that:

the promotion of social cohesion requires the reduction of the disparities which arise from unequal access to employment opportunities and to the rewards in the form of income. Such inequality tends to have serious social consequences through the marginalisation of sections of society, such as the long-term unemployed, the young unemployed and the poor. The incidence of poverty is also a result of policy choices affecting inter-personal income transfers.

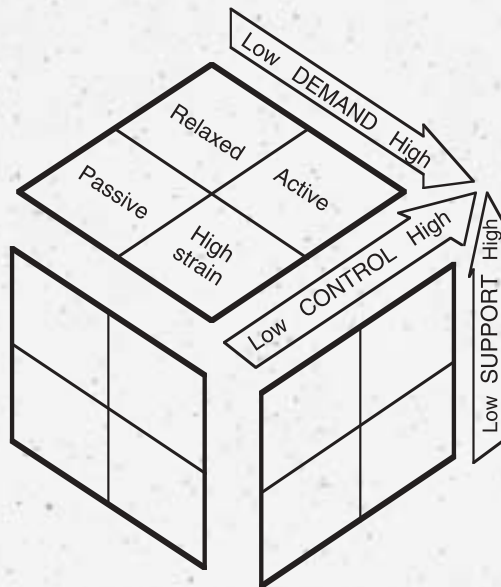
Interestingly, the 10% least well-off Europeans receive 2.5% of the EU's total income, while the 10% most well-off receive ten times more (27).

As mentioned, these dimensions (demand, control and support) have been combined in a model (16,17) that provides a basis for research, preventive action and the promotion of wellbeing.

The demand–control–support model

If work-related demands are too high for the worker to cope with, and he or she has no chance to influence and adjust important aspects of his or her conditions of work, the situation (the high-strain quadrant of Fig. 1) becomes stressful, is likely to increase the rate of wear and tear in the organism, and will possibly lead to an increased risk of illness or even death. In contrast, if demands are equally high but the organization of work allows the worker to exercise a reasonable amount of control (the active quadrant of Fig. 1), the combination spells challenge. If extreme, however, such a combination may also turn out to be pathogenic (the honey trap).

Fig. 1. The demand–control–support model



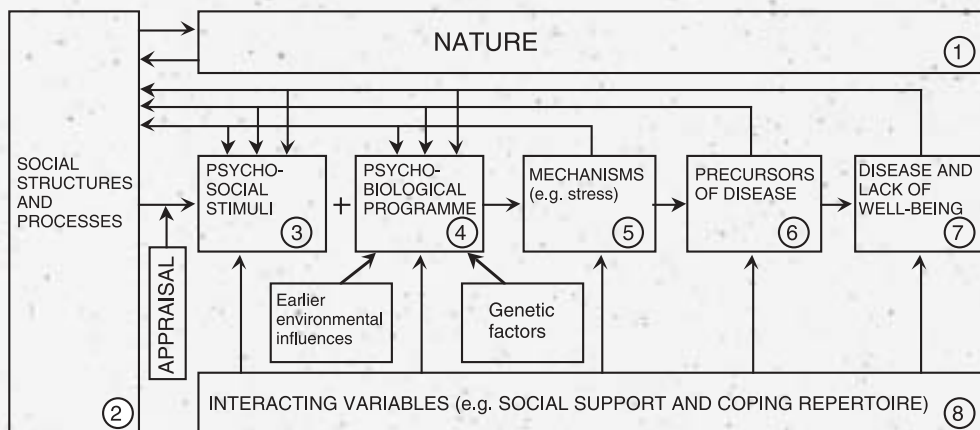
Source: Karasek & Theorell (16), Johnson & Hall (17).

A third, crucially important modifying factor at work is the amount and quality of social support available from management and coworkers. If available and adequate, it may buffer some of the stressor potential created by the combined influence of high demands and low control. If social support is low or absent or the occupational social setting is characterized by discrimination or bullying, however, an additional stressor is added to the pre-existing ones, and wellbeing is likely to suffer. In line with this model, work-related stress can be prevented and wellbeing promoted, by optimizing (instead of maximizing) demands, increasing the worker's control over his or her working conditions and increasing the availability of social support.

According to a complementary and more general ecological model (28), people are

surrounded by nature (Fig. 2, box 1), whose influences on them they modify and adjust by social arrangements: social structures and processes (box 2). These influence people through their senses. The brain experiences, filters and appraises actions, sometimes resulting in psychosocial stimuli (box 3). These act on a human organism characterized by a psychobiological programme (box 4), conditioned by earlier environmental influences and genetic factors. Some of the interactions between all these mentioned factors make the organism react. Some of these reactions are related to health and/or wellbeing; others are not. This paper focuses on the former. Some of these mechanisms (box 5) are specific in the sense that they are related to one individual stressor or to certain individual characteristics of the organism, or lead to a specific type of morbidity or mortality. Others are non-specific in the sense that they are triggered by many conditions, in many types of individuals, and relate to many types of morbidity and mortality. The latter have been defined as stress (29). These mechanisms might lead to precursors of disease (Fig. 2, box 6) and to disease and/or lack of wellbeing (box 7). This sequence of events is not a one-way flow but takes place in a system with feedback loops. What occurs in boxes 5–7 in Fig. 2 acts on the social structures and processes and their appraisal, the resulting stimuli and the psychobiological programme, sometimes creating vicious circles. This flow of events is modified by interacting variables (box 8), the most important being the presence or absence of social support and its utilization, and the coping repertoire of the individual in terms of problem- or emotion-oriented approaches.

Fig. 2. Human ecological system, with the human element detailed



Source: adapted from Kagan & Levi (28).

It is important to identify:

- the content of each box
- the interaction between any of the boxes
- the dynamics of the entire system.

Most of the dominant diseases in today's Europe have multiple causality. Work-related stress is one of many components (30) of such a causal pattern. Its contribution may be rather insignificant or the key to tipping the balance: triggering manifestations of a disease and/or accelerating its course. Work-related stress may further modify the utilization and outcome of therapy and health care by influencing not only compliance but also how situations, symptoms and signs are experienced and interpreted. Seen in such a perspective, work-related stress can influence virtually every disease, its course and treatment.

The pathways of such influences can be cognitive, in the sense that working conditions, as well as various signals in the worker's body, can be interpreted as pathogenic and as signs of disease, respectively. They can also be emotional, in the sense that objectively trivial exposures and reactions are considered noxious or even life threatening. They can be behavioural, as manifested in acute (for example, suicidal) or chronic (for example, tobacco use) health-related behaviour.

Additional effects concern occupational accidents. Workers who are exhausted or frustrated may be more likely to disregard safety precautions, to take unnecessary risks or fail to observe an impending danger (31).

Further, work-related stress may lead workers to suppress or deny symptoms and signs of disease, thereby delaying badly needed medical intervention. It may also act, not through the presence of negative influences, but the absence of positive ones, creating a state of what could be called a psychosocial deficiency disease.

Finally, stress may take physiological pathways (through nervous, endocrine and/or immunological pathways) or be superimposed on existing disease-related aches and pains. There are many reviews of such health effects (5,8,13,32-41).

Options for disease prevention and health promotion

Once the critical components of this system have been identified, we can try to prevent disease and promote health and wellbeing at work and elsewhere by addressing:

- social structures and processes and how people appraise these social structures and processes;
- the resulting stimuli;
- the psychobiological programme;
- pathogenic emotional, cognitive, behavioural and physiological mechanisms;

- the precursors of disease;
- disease and/or the lack of wellbeing; and
- the interacting variables (by improving social support and coping repertoire).

To become effective, these approaches could and should be multitargeted and integrated.

The above description obviously has a bias towards interventions against etiology and pathogenesis. It could and should, however, be complemented by a corresponding promotion of salutogenesis.

Not all (or even most) psychosocial, physical or chemical stimuli act pathogenically. Some have no effects on health, while others counteract disease or even promote health and wellbeing. Medicine has always emphasized negative outcomes and what may lead to them, focusing on pathogenesis, morbidity and mortality: that is, on pathology. The latter is the scientific study of the nature of disease and its causes. It comes from the prefix *patho-*, from Latin and Greek *pathos*, suffering. Genesis, the origin, the coming into being of something, also comes from Latin and Greek. Accordingly, pathogenesis may be defined as the development of a diseased condition.

In contrast, something can be salutary: favourable to health, wholesome. The term *salutogenesis* is derived from the old French *salutaire*, from the Latin *salutaris*, from *salus*, or health. Analogously, salutogenesis could be defined as “the development of a condition of health” (42). According to the founders of WHO (1), health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.

How, then, can disease be prevented and health and wellbeing promoted, at work and elsewhere? Theoretically, this can be done in accordance with principles spelt out in the EU framework Directive 89/391/EEC, according to which employers have a duty to ensure the safety and health of workers in every aspect related to the work, on the basis of the following general principles of prevention:

- avoiding risks;
- evaluating the risks that cannot be avoided;
- combating the risks at source;
- adapting the work to the individual, especially in the design of workplaces, the choices of work equipment and the choice of working and production methods, particularly to alleviate monotonous work and work at a predetermined work rate and to reduce their effects on health;
- *developing a coherent overall prevention policy*, which covers technology, organization of work, working conditions, social relationships and the influence of factors related to the working environment.

True, the Directive restricts itself to conditions of work, thereby limiting itself to an eight-hours-a-day approach. The remaining 16 hours should, of course, also be

considered, covering level-of-living areas such as: education and training, economic resources, housing, transport and communication, leisure and recreation, social relations, political resources, safety and security, health and medical services, and equality and equity.

Tools to prevent stress?

Accordingly, to identify work-related stress, its causes and consequences, it is of key importance to monitor job content, working conditions, terms of employment, social relations at work, health, wellbeing and productivity. The European Commission's guidance (5) refers to many simple checklists and questionnaires to enable all stakeholders to do this.

Once the parties on the labour market know where the shoe pinches, action can be taken to adjust the shoe to fit to the foot: that is, to improve stress-inducing conditions and promote wellbeing in the workplace. Much of this can be accomplished through rather simple organizational changes by:

1. allowing adequate time for the worker to perform his or her work satisfactorily;
2. providing the worker with a clear job description;
3. rewarding the worker for good job performance;
4. providing ways for the worker to voice complaints and have them considered seriously and swiftly;
5. harmonizing the worker's responsibility and authority;
6. clarifying the organization's goals and values and adapting them to those of the worker whenever possible;
7. promoting the worker's control over and pride in the end product of his or her work;
8. promoting tolerance, security and justice at the workplace;
9. eliminating harmful physical exposures;
10. identifying failures, successes, and their causes and consequences, in previous and future health action at workplace; and
11. learning how to avoid the failures and how to promote the successes, for a step-by-step improvement of occupational environment and health (see below).

On a company or national level, all three parties on the labour market (management, labour unions and government) may wish to consider organizational improvements to prevent work-related stress and ill health and to promote wellbeing, with regard to:

- schedule: designing work schedules to avoid conflict with demands and responsibilities unrelated to the job (schedules for rotating shifts should be stable and predictable, with rotation in a forward direction: morning to afternoon to night);

- participation/control: allowing workers to take part in decisions or actions affecting their jobs;
- workload: ensuring assignments are compatible with the capabilities and resources of the worker, and allowing for recovery from especially demanding physical or mental tasks;
- content: designing tasks to provide meaning, stimulation, a sense of completeness and an opportunity to use skills;
- roles: clearly defining work roles and responsibilities;
- social environment: providing opportunities for social interaction, including emotional and social support and help, between fellow workers; and
- the future: avoiding ambiguity in matters of job security and career development, and promoting life-long learning and employability.

Person-oriented measures

By following these principles, workers and employers can adjust the shoe to fit the foot, to improve workers' wellbeing. This may take time, however, or prove not to be feasible in the short term. Here, the social partners may need to resort to the complementary strategy of adjusting the foot to fit the shoe, by offering physical exercise and/or relaxation techniques, medication, counselling and stress management.

Internal control

Action to reduce noxious work-related stress need not be complicated, time consuming or prohibitively expensive. One of the most commonsensical, down-to-earth and low-cost approaches is known as internal control (43,44). It is a self-regulatory process, carried out in close collaboration between stakeholders. It can be coordinated by, for example, an in-house occupational health service or labour inspector, or an external occupational or public health nurse, a social worker, a physiotherapist or a personnel administrator.

The first step is to identify the incidence, prevalence, severity and trends of exposure to work-related stressors and their causes and health and wellbeing consequences, for example, by making use of one of many survey instruments (5).

Second, characteristics of such exposures as reflected in the content, organization and conditions of work are analysed in relation to the outcomes found. Are they likely to be necessary, sufficient or contributory to causing work-stress and ill health related to it? Are they accessible to change? What should be avoided, and what should be promoted? Are such changes acceptable to relevant stakeholders?

Third, the stakeholders design an integrated package of interventions, and

implement it to prevent work-related stress and to promote both wellbeing and productivity, preferably by combining top-down and bottom-up approaches. The short- and long-term outcomes of such interventions need then to be evaluated, in terms of stressor exposures, stress reactions, the incidence and prevalence of ill health, indicators of wellbeing and productivity (the quality and quantity of goods or services). The economic costs and benefits should also be considered.

If the interventions show no effects or negative ones in one or more respects, stakeholders may wish to reconsider what should be done, how, when, and by and for whom. If outcomes are generally positive, however, they may wish to continue or expand their endeavours along similar lines. Stakeholders must systematically learn from experience. If they do so in a longer perspective, the workplace becomes an example of organizational learning.

Experiences with such interventions are in general very positive, not only for the employees and their stress, health and wellbeing, but also for the function and success of work organizations, and for the community. If conducted as proposed, it is likely to create a win-win situation for all concerned.

A systems approach

As mentioned above, this requires a systems approach to be effective. The Government of the United Kingdom has made a most interesting initiative advocating such an approach in its green and white papers on “our healthier nation” (45,46). In essence, these papers spell out five types of factors affecting health. The first category is called fixed; it includes the genes, gender and aging of each individual, and is accordingly difficult to influence to prevent disease and/or promote health and wellbeing. In contrast, the other four categories could and should be tackled:

- social and economic factors, such as employment and its conditions, poverty and social exclusion;
- environmental factors, such as air and water quality, housing and the social environment;
- lifestyle factors, such as physical activity, diet, smoking, alcohol and drug use, and sexual behaviour; and
- access to services, such as education, health and social services, and transport and leisure facilities.

All these and related factors can be dealt with in a coordinated systems approach, across societal sectors and levels, in a contract for health. The three groups of partners in such a contract are the central government and national players, local players and communities, and all citizens. Briefly, then, this means that all

stakeholders should act and collaborate across societal sectors (health, social affairs, labour, education, housing, communication, etc.) and across societal levels (the international, supranational, national, regional and local).

Thus, there is a growing awareness of the problems that people are experiencing in both their social situation and their health, wellbeing and quality of life. Awareness is also increasing of ways to prevent ill health and promote health and wellbeing. Nevertheless, there still seems to be a long way to go before effective measures are taken to deal with existing problems, to prevent others from occurring and to promote positive health. There is a wide gap between science and policy.

A science–policy gap

The science–policy gap needs to be narrowed as much as possible by:

- political decisions at all levels;
- collaboration across societal sectors and levels, based on such decisions and policy statements;
- education, training and information provided to all stakeholders, including those outside the health sector and those at the grassroots level; and
- evaluation of the resulting policies, to make future actions more solidly based on evidence.

An important provision for this at the EU level is the Treaty of Amsterdam (Article 152), which calls for the assurance of a high level of human health in the definition and implementation of all EU policies and activities.

If such protection is indeed ensured, preferably at all levels of government and across all relevant societal sectors, one necessary (but not sufficient) prerequisite has been established for the prevention of stress-related and some other types of morbidity and for the promotion of health and wellbeing. A complementary, and equally necessary (but not sufficient) approach comprises corresponding action by all workers and citizens: the empowered grassroots (45,46).

Skills for life

Nevertheless, innumerable people, particularly the underprivileged, are so downhearted and helpless and have such low self-confidence that they give up, feel defeated and do not even start looking for new solutions. Some may have been taught in the past that the so-called nanny state would continue to provide for them, no matter what. Increasingly, services are stopped, while many citizens have lost or never developed an ability to help themselves (“learnt helplessness” as described by Seligman (47)). Others have never had access to any such nanny.

WHO has attracted attention to this problem, taking a broad health promotion perspective. One of WHO’s ideas is to improve school-aged children’s introduction to life by teaching them to live in a way that promotes health and wellbeing. Several hundred schools in Europe have been designated as healthy schools and have been helped to educate the pupils to take care of their own health, as a complement to their ordinary curricula.

The healthy schools complementary curriculum includes increasing pupils’ knowledge and understanding of a number of types of behaviour known to be hazardous – smoking, drinking, using illicit drugs, having unhealthy diets, lacking exercise, etc. – to promote healthy lifestyles and avoid unhealthy ones. In addition, the programme attempts to promote social skills or skills for life (48). Pupils are taught, for example, how:

- to communicate effectively
- to make decisions, solve problems and think critically
- to hold their own and resist peer pressure
- to manage their own worry, depression and stress
- to adapt to new environmental demands
- to get to know themselves.

Anybody – whether student, worker or senior citizen – possessing such skills for life, which are related to but not identical with emotional intelligence (49,50), will not remain, for example, unemployed for long. Neither will he or she remain in a bad job. He or she will improve the job or try to find another.

The notion of skills for life is very similar to the notion of everyday power, which Karl-Petter Thorwaldsson introduced within the Swedish Social Democratic Party (51). It means having power and influence over one’s everyday life. This can be gained partly through life skills and partly by society not hindering individuals in applying them, as well as by individual and cooperative bottom-up efforts to solve problems. It is also assisted by promoting and encouraging such efforts, as a complement to society’s own central and regional top-down resolution of problems. This could create popular self-help movements against a variety of large-scale social and health problems.

Putnam (25,52) reviews and discusses interesting examples of such empowerment

and attempts to create such learned resourcefulness and social capital, with a focus on cooperative approaches.

Social support

As pointed out by Corneil (53) during the mid-1970s, public health practitioners and epidemiologists in particular introduced the concept of social support in their studies of causal relationships between stress, mortality and morbidity (54,55). Following up these seminal works, investigators have moved away from considering social support as a unitary concept, and have attempted to understand the components of social stress and social support and their relation to health.

Hirsh (56) described five possible elements of social support:

- emotional support: care, comfort, love, affection, sympathy;
- encouragement: praise, compliments: the extent to which one feels inspired by the supporter to feel courage, hope or prevail;
- advice and the extent to which one feels informed;
- companionship: the extent to which one does not feel alone; and
- tangible aid: practical resources, such as money or aid with chores.

A person who has access to and can take advantage of social support will feel better and become more resistant to life's various trials (15,25,53,57,58). Welfare is likely to be improved along with health and wellbeing. It is, in fact, another important option for investment for health.

Sense of coherence

When one is navigating on the ocean of life, it is good not only to have access to and the ability to use nautical charts and a compass but also to have an idea of where one is heading, how and why: to have a salutogenic "sense of coherence" (42). This consists of three components: comprehensibility, manageability and meaningfulness; this means that people need: to understand what is happening to them, to be able to manage their current situation and to see, understand and influence the function and purpose of their flow of life. All of this can be taught to people experiencing various problems or to everyone as a step towards improving people's options for coping (59).

The Verona benchmark

The WHO Regional Office for Europe attempts to bring critically important strategies together in its Verona benchmark (60) and Verona challenge (61). Their core principles are:

- a focus on health, whatever the activity
- full public participation
- genuine intersectoral work (all societal sectors and levels)
- equity between and within populations, and between countries
- sustainability of the activity
- a broad knowledge base.

To promote this, all relevant variables should be monitored, with self-correcting loops for improved future policy-making. Accountability at all relevant levels should be secured. This applies both to stress prevention and management and to disease prevention and health promotion in general. Their ultimate aims should include the four dimensions of the WHO policy on health for all:

- ensuring equity in health by reducing gaps in health status between countries and between groups within countries;
- adding life to years by helping people achieve their full physical, mental and social potential;
- adding health to life by reducing disease and disability; and
- adding years to life by increasing life expectancy.

To ensure a reasonably holistic and integrated approach to promotion of wellbeing, one may wish to fill in the entire matrix for the model contract (Table 1), indicating who should do what, coordinating as far as possible all actions at all levels by all stakeholders.

Table 1. Model contract

Targets for action	Actors			
	Supranational players	National players	Local players	All citizens
Social and economic conditions				
Environmental conditions				
Lifestyle, behaviour				
Access to societal services				

Trying to achieve this, it is important to consider both options for and obstacles to a number of dimensions (Table 2), again trying to complete the entire matrix in a coordinated manner. This would mean spelling out not only all relevant obstacles foreseen within each dimension but also corresponding opportunities and options to overcome the obstacles, indicating the short- and long-term actions that should be considered.

Table 2. Sociopolitical matrix

Dimensions	Obstacles	Opportunities	Actions (short- and long-term)
Social structures			
Societal goals			
Personal goals			
Personal control/participation			
Expectations vs. reality/outcomes			
Social network, social capital			
Competence: professional, life skills			
Mutual trust			
Vested interests			
Monitoring/feedback (with relevant parameters)			
Holistic/fragmented approach			
Equity/Equality			

There is an urgent need for increased cooperation between all relevant stakeholders on all societal levels (EU, country, workplace) on:

- implementation of the very considerable body of current information on measures to reduce stress-related illness and injury in the workplace and to promote the health and wellbeing of workers, and the carrying out of research to address gaps in such knowledge;
- surveillance at individual workplaces and monitoring at national and regional levels to identify the extent of work-related stress and health problems and to provide baselines against which to evaluate efforts at amelioration;
- education and training of occupational health and other key professional groups to facilitate their participation in researching and developing programmes to reduce the impact of work-related stress and to evaluate the outcome of such approaches;

- the continued production and improvement of valid and reliable methodology kits for intersectoral and interdisciplinary monitoring, analysis and action by all concerned;
- creation of a clearing-house for all relevant information and activities in all media, which would include using the WorldWide Web for their collection, review, integration and dissemination; and
- the tackling of the stress-related consequences of both over- and unemployment on the individuals concerned, their families and the communities in which they live, which will mean minimizing un-, under- and overemployment, promoting the concept of the healthy job and humanizing organizational restructuring.

Starting now

Does all this sound complicated or even utopian? It is not. It has been done in many enterprises with considerable success. The principles mentioned above are included in the EU framework Directive and the work environment acts of a number of European countries. True, it may take time and effort, but it can be done, and is likely to be highly cost-effective.

The first step for people willing to take action is to read the European Commission's guidance on work-related stress (5) and WHO's Verona challenge (61), and take concrete steps to apply what they have read in their countries or workplaces. The right time is now. It can mean improving both working conditions and health and wellbeing, as well as individuals', companies' and countries' output and productivity.

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Discussion

Lowell S. Levin and Erio Ziglio

The keynote presentations and the prepared responses set the stage for an exchange of perspectives and proposals in response to the theme of the workshop: options for and obstacles to the promotion of wellbeing. These views were derived from a vast range of experience from diverse policy environments within both public and private domains. Where available, data were provided to support the points made; in some instances, material was more anecdotal and offered to stimulate hypotheses worthy of testing. To optimize productive discussion while striking some balance in coverage, themes or dimensions were drawn out of the formal presentations as a framework for discussion. Clearly the themes show substantial overlap. They need to be considered within the context of a comprehensive strategy.

Availability of research evidence: obstacle and solution(s)

Research on policy interventions that improve population health are complicated by variations on the definition of health. Further, the current evaluative data on policy intervention methods are both modest and difficult to generalize to diverse political and cultural circumstances. The science element of policy science is still at an early stage of development, with rather vague terms of reference, investigative tools borrowed from other disciplines and a heavy reliance on trial and error. Additionally, the idea of wellbeing offers an expanded venue for observing policy impact on health, more true to the contemporary perspective on health that goes well beyond morbidity. Measures of quality of life are often fused with perceptions of health status. A panoply of public policies now must be considered as major social determinants of health. Thus, more indirect, subtler measures of factors and forces affecting health (wellbeing) must be created and tested. The WHO European Office for Investment for Health and Development, in Venice, could lead a major breakthrough in achieving this shift in emphasis.

Resistance to the health investment approach

Repeatedly, the discussion of investing for health through public policies identified multiple sources of resistance to intersectoral collaboration. Clearly there must be a change in mentality at the top echelon, requiring a willingness to redirect energy and resources committed to downstream curative services to upstream preventive and

health promoting investment and services. This requires refocusing fiscal and other resources to policy areas beyond the traditional boundaries of medical and health care. Yet such intersectoral collaboration, even where its benefits are clear and agreed, touches on sensitive issues of power and control. Territorial instincts die hard. They are especially difficult to overcome if they are accompanied by inexperience with the techniques of negotiation and compromise.

The investment-for-health process finds itself in this situation. What are the incentives for change? What constituencies (professional, public, private) can be mobilized to create an environment for change? Where are the leverage points for change? From a practical standpoint, a process must be begun to identify and work with people influential in the decision-making process among key groups: professionals, legislators and the public at large. Theoretical rationales cannot change opinions; real-time data must be available and presented in a manner that addresses specific social priorities (1). Such data can and should encourage thinking and stimulate debate about strategies that are multisectoral, and provide solutions that demonstrably contribute to economic and social development (general wellbeing). It has been suggested that the introduction of the investment-for-health strategy be approached through institutionalizing mechanisms for continuous dialogue between experts. The WHO Regional Office for Europe's offer to its Member States of an investment-for-health appraisal service might be an example of such an expert advisory entity that has a wide overview of government policy areas and can therefore provide a supportive resource for health investing by helping to identify possibilities and to monitor progress (2).

The technology of health investment in unfamiliar policy areas involves tactical skills and methods effective in motivating and sustaining change. This task requires the ability to discern inequities and qualitative deficiencies often masked by traditions and accepted biases. Building the capacity of leadership both within and outside the health ministry remains the most viable option to challenge the problem of resistance. The WHO European Office for Investment for Health and Development is expected to give highest priority to this task, with special attention to the countries in transition (the countries of central and eastern Europe and the newly independent states of the former USSR), where health-friendly adjustments in public policies could make a clear and substantial contribution.

Finally, the education and curriculum of health professionals must include an understanding of the social and economic determinants of health and the investment-in-health process. A starting point may be to create a more interdisciplinary environment for health professionals' education, drawing medicine and public health closer to the humanities and the social and behavioural sciences. Preparing health professionals to appreciate the roles of economics and law (regulation) in influencing population health could go a long way towards building

a common basis for intersectoral collaboration. Again, polemic cannot achieve this. Teaching about health in economic and social development must be firmly based on credible research.

Building public awareness of the social determinants of health

The dominant biomedical environment has myopically encouraged a public misunderstanding: that individual health status is influenced primarily by personal behaviour and habits that give the individual nearly total power to control his or her health destiny. Advertising and a substantial proportion of health education in schools have encouraged the notion that eating right, exercising, controlling stress, maintaining personal hygiene and getting adequate sleep are the key to life and sure bets to maintain vitality. Social and economic determinants of health are rarely identified. Risk factors are the focus, rather than risk conditions. While unemployment, pensions, housing, the status of women and education are, for example, popularly understood as influencing the quality of life in general, their specific impact on health status is less clearly established in the public mind.

Perhaps because of the less visually concrete and seemingly indirect health impact of many social determinants, health issues have been in a sense segregated from mainstream social policies. In addition, the popular understanding of health as falling under the guardianship of the biomedical sphere within government has exacerbated this situation. It is therefore not surprising that debates on most social and macroeconomic policies seldom identify their impact on population health. Mechanisms need to be found that raise the visibility of population health in all policy sectors: social, economic and environmental. For European national, regional and local governments, a resource gathering health intelligence designed to assist all ministries in identifying health promoting opportunities in new legislation needs to be developed. The public debate on a variety of social, economic and environmental actions must be broadened to include the health dimension. Clearly drawing the public's attention to the health implications of diverse public policies will be a continuing process based on practical political actions taken.

The groundwork for building informed public opinion about social determinants of health is a responsibility of elementary and secondary education. The European Network of Health Promoting Schools, a project jointly supported by WHO, the Council of Europe and the European Commission, can provide an environment in which to raise awareness of health as multifactorial. Being active participants in community development can offer children and young adults an opportunity to make the connection between life conditions, health status and health as a factor in

building healthy communities and countries.

The critical role of the mass media in supporting these strategies is immediately apparent. Popular culture affects perceptions of health: how it is created, how it is lost and, most importantly, how individuals can adjust personal behaviour and support healthy public policies. By broadening the definition of health as synonymous with general wellbeing, the media can help clarify the contribution of health to economic and social development. Publicity surrounding the WHO Verona initiative illustrates this new focus for delivering the population health message in its broad social context. Examples of social and economic determinants of health highlighted the powerful effects of life conditions (such as housing and employment) on health. The strategy was not to belabour the connections, but sharply to focus on them as triggers to raise understanding based on everyone's daily experience and common sense. Just below the surface, people understand the impact of social conditions on health. Preaching is not necessary; they need only to be reminded.

Developing a selective strategy

Achieving an effective strategy for health investment, regardless of the policy sectors involved, can predictably encounter one or more common factors that impede progress or reduce the quality of the investment's impact. Chief among these are lack of equity, failure to gain participation of the intended beneficiaries in the decision-making process, public insecurity, disfranchisement of citizens, and budgetary imbalances and competition among policy sectors that should be collaborating to improve population health. When one considers the array of factors and forces hostile to the health investment process, it seems prudent to address the most important barriers. There will always be limitations. Some may be tackled without compromise, such as limits on equity, a cornerstone value of healthy public policy. Yet even equity may be challenged to ensure that decisions are balanced between equity goals and special consideration for the needs of highly vulnerable populations. Clearly, priorities must be set for a selective investment strategy. This is where public opinion can be folded into the process to clarify public preferences and mobilize supportive constituencies both in the public and private sectors. Public opinion, however, needs to be informed: built on valid, contemporary data. A sustained commitment to public education on the social determinants of health will enable a more appropriate balance between the roles of individual risk behaviour and risk conditions in the debate on disease prevention and health promotion.

A selective strategy would recognize the reality that policy influence is not equally distributed in a population. Many social inhibitors cause people not to organize to change policies that harm their health. On the other hand, there are social

entrepreneurs, or “key enabling factors, who wield enormous informal power in the policy-making (or remaking) process, and who can be located in systematic ways. While usually interested in single issues, these informal power networks can begin to help order policy change priorities. They can help select priorities that are most readily accomplished, and thus build a record of successful change. This would be the antithesis of the top-down approach to deciding what health concerns are paramount in the public interest, what public policies are most central to those concerns and what aspect of the identified policy sector should be the focus of health investment. The means of mapping health gain, developed and field-tested by the investment-for-health project group at the WHO Regional Office for Europe, could help guide this process (3).

Selectivity in sorting priority public health issues can also be achieved through the use of focus groups comprising the individuals who are most affected by a given health threat. The product of a focus group, however, while offering substantial assurance of the validity of the issue(s) identified, cannot necessarily provide leadership in policy change. Both strategies (seeking enabling factors and using focus groups), as well as other tactics to mobilize effective social action, should be applied in an orderly way. Energizing the grassroots in the policy process requires sophisticated planning that can offset the resources usually available to the bureaucracies holding power.

Creating an environment favourable to building investment for health

The investment-for-health approach seeks to change the cultures of the legislative and administrative branches of government in ways that will make them sensitive to the health implications of both the development and application of public policies. The first step is to create an information environment (1) that defines the realities of population health and reveals discrepancies and inequities in health status and the social factors associated with them. Thus, housing, income maintenance, income distribution, employment and educational attainment can be seen as powerful factors that effect population health. Such data must be available on a continuous basis and preferably interpreted by expert analysts who work in concert and are easily available to parliamentarians and government departments. This kind of information environment can help place health issues in their widest social context and thereby reveal a selection of options for health investments among multiple public policy sectors. Evidence-based public health practice is the result.

A nexus for collecting, analysing, and disseminating information about the social and economic determinants of health and priorities for health investments clearly needs a home in or closely related to government but with strong ties to nongovernmental organizations (NGOs), citizens’ groups, and the private sector. University collaboration

should be valuable to ensure more continuous and carefully designed studies of the social determinants of health while identifying specific public policies with high impact on population health. Periodic studies, which reveal trends, would be valuable for long term planning and evaluation of policy shifts and their health impact.

Long-term strategies for monitoring policy need to be developed to bring into focus the attributes of public policies that influence the quality of life in general and health in particular. For example, policies that reduce social distance and advance social cohesion are singularly important contributors to the population health. They are also increasingly recognized as assets for equitable and sustainable development (4). Similarly, policies that create opportunities for achieving greater equity in income distribution or reducing biases in access to essential human services and resources represent long-term investments for health. Building a health-friendly public policy environment is a long-term and ever changing process. Continuous monitoring is as essential as a fully informed government and electorate.

Sensitizing public policies to the reality of social capital

Clearly, the government's responsibility is to ensure equity and fairness in providing essential services that promote public welfare. Examples are the various safety nets: income maintenance and access to health care, housing and education. These are the bedrock assurances of a civil society. They form an official grid of professional services, but they should not be taken as the totality or even the majority of supportive resources available to people on a continuous, full-access and usually cost-free basis. Social capital is an informal social resource: particular processes among people and organizations, working collaboratively in an atmosphere of trust leading to a goal of mutual social benefit (see Wilkinson's chapter). Another definition should include the naturally occurring relationships of family, extended family and friendship networks; these are wholly integrated resources where trust and common goals are very widespread.

These pervasive and diverse social resources are the dominant environments within which formal government policy infrastructures operate. Without these informal resources, public policies are not likely to achieve their goals. Indeed, successful public policies implicitly assume the contribution of social capital to be the key factor in adapting public policies to the unique circumstances of populations. Policy-makers must attempt, however, to be sensitive to the complementary nature of social capital, to make allowances for its mediating role and explicitly to nurture the necessary collaboration and trust (rather than competition) between informal and formal social resources. Public policies should look for opportunities to stimulate such

naturally occurring resources as mutual aid, self-help and religious groups. Healthy public policies, therefore, are those that build community life, reduce hostility associated with inequities in economic or social status and encourage participation in informal social organizations that mediate between individuals and families and the larger formal structures of government and commerce.

Learning from central and eastern European countries in transition

Sadly, the experience of the 1990s provides a natural experiment in changes in public policy and their impact on health. It provides a lesson in what harm inappropriate, poorly informed and hastily enacted public policies can do. First, public policies are not developed in a historical vacuum. Planners reshaping social policies must take account of the social history and mind-set of the country. A shock dose of reform, for example, cannot overcome chronic dissatisfaction with life. Policies that purport to promote population health must be viewed in progressive educational terms, allowing for gradients of change with respect for the inevitable deliberateness of the democratic process. Equity of access to the benefits of the market economy, for example, cannot be ensured without reforms in a variety of policy sectors moving forward in a mutually supportive way. This requires more than patience with process; it requires substantial public investment and participation, particularly among those with long histories of vulnerability and disfranchisement, and the cynicism and hopelessness that these often breed.

In some circumstance, a healthy public policy approach may have to settle for modest but meaningful achievements, such as, in accelerated social and economic transitions, to provide employment and sources of income, regardless of its career potential. The point here is that incrementalism is often a wise course of action in achieving healthy public policies. Constituent groups must be brought along in the process, a process that must often mediate between competing priorities among groups with common goals. The ethical consideration here is to ensure open debate on the choices to be made and fairness in the mediation process. All parties must be helped to understand the trade-offs that are necessary to reach a common goal. Territorialism can be a major barrier to intersectoral collaboration.

Conclusions and recommendations on key areas for research and development

The intent of the Anacapri workshop was to highlight major obstacles to the promotion of the public's health through intersectoral collaboration and healthy public policies. Health in this context is synonymous with wellbeing, as it is in the well known WHO definition. The positive contribution of the workshop was to suggest opportunities or strategies to overcome or avoid these obstacles.

The multidisciplinary mix of participants enriched the discussions. Similar points were often examined from quite different perspectives, revealing the multifaceted nature of issues and the complexities of solutions. No magic bullet emerged, but the participants agreed that progress was being made towards a broad social strategy to improve population health through major structural changes. The discussion had a continuous undercurrent arguing the need to place health development as a factor in economic and social development. Placing the promotion of the health of the population in the policy mainstream was to recognize its social, economic and environmental determinants, not only its genetic ones. The participants judged this of crucial importance in liberating the understanding of what promotes population health from the confines of a biomedical model that places virtually exclusive emphasis on individual risk behaviour.

The formal presentations showed the necessity and potential of this powerful shift in both concept and implementation of public health practice. Along with the commentary they stimulated, several of the specific recommendations generated focused particularly on the future work of the WHO European Office for Investment for Health and Development. Innovative thinking will be a priority of the Office, as will experimentation with methods of policy analysis, reviews of the scientific evidence and dissemination of information. A major goal of the Office is to build the capacity of the 51 Member States in the European Region to make appropriate, ethical and effective health investments in all public policies, based on scientific evidence of the role of the social and economic determinants of population health.

The implementation of strategies aiming at producing good investment for health requires a thorough understanding of the social and economic determinants of health. The participants considered the following areas for research and development (linked to concrete policy recommendations and actions) of key importance for the future work and expected impact of the WHO European Office for Investment for Health and Development. These recommendations originated as ideas and suggestions flowing from the give and take of informal discussion at the workshop. There was, of course, substantial overlap of proposals as one would expect from a continuous dialogue. Nevertheless, some general categorizations were made to help order the many dimensions involved.

Context

1. Every public policy at all political levels should be viewed in a global context. How do global factors and forces affect the health of the population? Where are the points of compatibility and multiplier benefits that could result from a good global–local fit? What aspects of globalization are limiting health benefits of local, regional and national public policies and how can these and other negative influences be buffered or avoided? What are the possibilities for coordinated and collaborative policy planning among United Nations agencies and regional and national authorities?
2. Health should be placed in the context of economic and social development. A healthy population is clearly an asset to economic growth and social welfare. At the same time, it is a product of equity in development. Thus, investing for health must be seen as a true social and economic investment, not an expenditure, and decisions on the specific nature of the health investment should be determined on the basis of maximum feasible social yields (values). Feasibility is a key factor here. One must recognize that trade-offs and compromise are needed, accept a gradient of benefits over the long term and acknowledge policies that do reasonably well, although not perfect.

Principles

2. Public policies should be equitable. Equity is arguably the most important attribute of all public policies and especially critical to health. Barriers to access to education, housing, employment and health care all affect health status and, as a result, must be the primary targets of policy reform. A constant vigilance must seek out historical demographic biases (gender, age, ethnic, racial and social class) and address them forthrightly. In addition, transient conditions, such as radical changes in governance and economy, may have selective negative impact on the public's health. Inequities are often subtle where regulatory requirements can subvert the intent of a policy. One should acknowledge this potential hazard through a built-in accountability process that allows feedback from the ultimate beneficiaries of policies. Transparency throughout the policy process, good communication with target populations and careful monitoring of impact should be standard procedures. Where inequities remain, studies should document their negative impact on health and this information should be used to motivate public pressure for redress.
4. Public policies should avoid social exclusion and encourage social collaboration. Healthy public policies should be designed to encourage access to the social mainstream by improving equity in income distribution, work and housing opportunities and health care choices. Equity as evidenced in policy outcomes is essential and should be linked to specific efforts to level the playing field, and

eliminate factors that skew benefits among potential beneficiaries. On the other hand, strategies should be in place that can strengthen collaboration among diverse community groups, making them active contributors in defining the problems they share, deciding on solutions with mutual benefits and mobilizing for the required policy change.

5. The investment-for-health approach is dedicated to the proposition that health must be viewed as an essential factor in economic and social development. Consideration of social and economic disparities, particularly as they affect health potential in development, cannot therefore be ignored. A solid case could be made for health investment to address this inequity (and companion inequities) directly through such mechanisms as enhanced employment opportunities and retraining programmes; day-care facilities for the children of working mothers, equal pay for both sexes, etc. Healthy public policies must serve all citizens equally.

Methods

6. Efforts to promote healthy public policy should concentrate on critical sectors. Clearly, all policy sectors could be shown to affect population health, so organized efforts to promote health through public policy should be selective in setting priorities for health investment. Formulating a health gain map could help locate the public policies most prominent in affecting a given health problem and its potential solution. Identifying high-yield policies or policy clusters can help concentrate the technical and political resources needed to make the health investment only large enough to make the maximum impact. Health investing, like other investment objectives, must be parsimonious and as precisely focused as possible to achieve a favourable investment-to-yield ratio. This not only makes monitoring the health consequences of policy shifts more practical, but allows the results to be communicated more effectively, thereby continuing support for the investment process. Moreover, if constituents are able to participate in the enactment of specific policy changes, they more likely to appreciate the resultant health benefits.
7. Promoting health through diverse public policies should focus on opportunities for population health, not solely on the solution of specific ill-health problems. This means adjusting the lens through which one examines these policies to reveal options that strengthen health without reference to a specific health problem. It must be possible, for example, to see those attributes that contribute to quality of life, wellbeing and happiness. Chief among such attributes are a contributions to the security of work, the home and social relations. Thus, the reference policy areas (employment, housing, community stability) should be explored for development options to be taken up, always with full participation of the ultimate beneficiaries, who can best judge what should be done and how. Such a focus on

- health promoting opportunities can help correct the current overbalance on the reform of health care versus promoting health.
8. Public policies should be held accountable for their impact on health. As with the environmental impact statement, a health impact statement should be a prerequisite for policy approval. This statement should account for health impact in its broadest terms, from pathological changes to impact on life quality and potential health promoting benefits. As an integral part of the policy development process, the health impact statement provides an early opportunity for interdisciplinary input. Impact statements that involve *post hoc* review of policies often miss the critical opportunity for innovations that could offer complementary health benefits. Policies affecting school architecture could, for example, include designing spaces that would make the facility available as a community centre offering twenty-four-hour access to fitness rooms, and services for all age groups.
 9. The investment-in-health process should be explained in easily understood language. The process is not a simple or linear. Substantial skills are required to analyse economic and demographic variables, undertake epidemiological reviews, select strategies for revenue compensation, and negotiate and mediate between diverse interest groups. An orderly and systematic approach to decision-making and the involvement of citizens in validating hypotheses must also be in place. Overall, investing for health demands a substantial shift in resource allocation and, more difficult, a shift in attitudes from the dominant biomedical-behavioural model to a social-economic-political model of structural change. In many countries, both in Europe and elsewhere, dealing with the social determinants of health is new territory for public health. The WHO European Office for Investment for Health and Development should give priority to providing a clear picture of the investment process to both health professionals and the public at large. Along with an explanation of how investment for health works, there must be a description of the kind of infrastructure required for implementation, although creating another layer of bureaucracy should be avoided.
 10. Investments for health should give priority to structural change. Policies that have been identified as affecting particular health issues should pursue more generally health-friendly modifications within the domain of the policies' main remit. The goal is not to convert a public policy to a health policy but rather to ensure that the promotion and protection of the health of the public are essential considerations in the overall process of policy review. Accomplishing this will require specific criteria spelling out what is meant by wellbeing as a broader surrogate term for health. These criteria should focus on making structural changes in, for example, the work environment and benefits for workers, rather

than merely modifying workers' behaviour. Structural changes do not and should not preclude objectives for behavioural change. They should precede and facilitate behavioural changes and thus ensure that behavioural interventions are necessary and appropriate residual efforts.

11. To the greatest degree possible, policy options should derive from public choice. The recognition that the people who define the problem control the range of solutions should guide the process of ensuring that the public, the ultimate beneficiary of public policies, participates fully in policy analysis and the choice of policy modifications that affect their health and general wellbeing. This can help ensure the validity of the change option selected, as well as its ultimate acceptability. The WHO European Office for Investment for Health and Development should explore mechanisms for citizens' continuous and effective participation, perhaps in the form of focus groups, in the health investment process. The goal is to involve members of the public from the start, rather seeking to restore their power once it has been lost. A special effort should be made to reach out to the lowest socioeconomic groups and to other segments of the population that may be underrepresented or at special risk of health damage from certain policies, such as those on education and employment. On a more general level, other mechanisms should be explored that provide the opportunity for coalescing opinions among vulnerable groups with differing perspectives but a common cause. Creating consensus seminars for representatives of community groups may be a useful approach.
12. The potential for public-private partnerships should be given greater consideration. Globalization, democratization, decentralization and the emergence of market economies contribute to an environment that argues for a fresh response to the opportunities and challenges in building programmatic working relationships between the private entrepreneurial sector, volunteer (non-profit) sector and government. In concert, these sectors can contribute their resources of finance, organization and regulation to achieve public health goals that would be beyond the capacity or jurisdiction of any one sector. One should look for synergies among multiple social resources, draw them together and offer maximum transparency for monitoring progress and encouraging the dissemination of best practice. Such partnerships can provide innovative thinking, break down traditional jurisdictional barriers and secure valuable changes in a wide arena of public commitment. A very central role for NGOs should be encouraged as mediating structures that stand between individuals and society's large institutions, such as government and multinational enterprises. This role should be recognized, supported and optimized in the investment-for-health process.

13. A continuous flow of information should be planned about the health promoting impact of public policies and the investment process. The public may be the last to know about the concept of healthy public policies and efforts to achieve them, but legislators and administrators may not lag far behind in their understanding. While the concept of healthy policies may be easy to communicate, the specifics of which aspects of policies are most influential to promote the health of the population and what adjustments would be most effective, feasible and acceptable may not be clear to decision-makers. The criteria to be applied; the nature and limits of negotiation and compromise; and the selection of outcome measures, monitoring methodologies and information dissemination strategies are not usually subjects in professional health education, much less public debate. Nevertheless, a sustainable investment-for-health process should be made a part of the legislative process, the administration of policies and the public acceptance of them. Achieving this means new content for training curricula for public health practitioners and a broadly based educational plan for the public on the social determinants of health. Non-health policy administrators should be considered an especially sensitive group with a strong concern for the security of their policy domain, and must be assured that they will not lose out in the health investment process.
14. The projected and actual cost-effectiveness of health investments should be determined. The need is not in dispute, but what constitutes cost and effectiveness remains less clear. No one-size-fits-all principle can be applied to the diversity of social, economic, demographic, political and cultural circumstances of the European Region. Further, countries in transition will have additional issues to achieve stabilizing measures, not to mention requirements to measure indicators of stress impact and other vital signs of the wellbeing of their populations. For all countries, the concept of effectiveness must include secondary, long-range changes in individuals and communities, such as the capacity to adapt to changing work demands and the needs for income security (pensions) and access to mainstream community life. Similarly, the concept of costs is highly variable among countries and across time. No stable definitions of such values can be expected to be available, but a mechanism for determining the appropriate fit of cost and effectiveness to given circumstances can provide a relative gauge of how a health investment relates to economic and social development. That, after all, is what policy-makers must know in order to make decisions among competing options. Health benefits can become value-added factors as policy options are weighed.
15. Forging intersectoral links should be given high priority. Public health solutions are rarely single-sector solutions. Intersectoral collaboration has been a major WHO goal since the historic International Conference on Primary Health Care, in Alma-Ata, USSR in 1978. Acceptance of the principle does not, however, ensure

action. Indeed, a major challenge for the investment-for-health approach will be to identify barriers to intersectoral collaboration and formulate testable solutions. A promising starting point would be for multiple sectors to consider a development strategy together and to make budgetary judgements in consideration of how those decisions complement and support the overall architecture of the development plan. This strategy would enable budget allocations to follow the trail of solutions, including secondary, long-range changes by allowing policy sectors contribute simultaneously or serially over time. Health expertise from the public health sector can help mark the trail, but would not necessarily (or usually) be responsible for implementing the solution of managing its supporting budget. In many instances, this may boil down to a rather straightforward management-by-objectives approach with the additional dimension of distributing the budget according to specific aspects of the solution. The idea is to attach budget to solutions, not to policy area (or policy problems). Working groups representing various policy sectors could meet to deal with particular issues and disband when they are resolved. The groups would reassemble with a membership reflecting relevance to new issues as they emerge. This kind of fluidity may avoid the otherwise predictable turf warfare, linked to sectoral protection rather than problem solving.

16. The investment-for-health approach needs ample built-in opportunities for reflection and reappraisal: creative thinking. Rushing to policy judgements is neither wise nor efficient in the long term. The complexities of defining costs and expected benefits need a full opportunity for discussion and debate among several disciplines and public hearings. An interdisciplinary think tank, not necessarily linked to government, and operating without specific responsibility for a product or conclusion, could provide the kind of listening post, debate society and source of provocation so necessary in nurturing lateral thinking; thinking outside the box. Building the capacity of WHO Member States to invest for health should also build their capacity to break away from routine, from the available models, even from the advice of these proposing best practices. Capacity building should be regenerating, and that takes time.
17. There is a pressing need to establish investment-for-health demonstration projects supported by in-depth case study analyses. Investment for health is clearly on the frontier of development. With the harmonization of public policies among EU countries and the newly independent states of the former USSR, the investment-for-health process will clearly continue to invent and revise its techniques and strategies. A text written now on the investment approaches is likely to be obsolete in just a few years. It is imperative, therefore, that WHO sponsor (together with Member States with diverse social circumstances) a continuing series of investment demonstrations both in close proximity to the

WHO European Office for Investment for Health and Development and in locations selected for their collaborative spirit and their geographic diversity. With the advice of Member States, the WHO European Office for Investment for Health and Development needs to make a strong educational plan (similar to a business plan).

18. Changing public policies requires a policy for change. While investing for health involves substantial technical skill and professional management, the public will and expressed priorities should influence the flow and order of what health investments to make and in which policy sectors. Active and informed public participation throughout the investment process is essential. To achieve and to sustain this level of involvement will require a plan; this should include:

- full public disclosure of the health impact of social factors and forces on the public health;
- a strategy to mobilize public participation that could include the use of gatekeepers, people who are opinion leaders;
- a process for locating social entrepreneurs and networking with them;
- enlisting the support of relevant NGOs and providing them with necessary data on the issue; and
- broadening the motivational base by invoking the concept of the health as a human right.

In support of the above, studies should be undertaken to understand the reasons why segments of the population are less likely to participate than others. What are the social inhibitors that cause people not to organize in support of a health investment objective?

19. Innovative new tax options (or the creative use of old ones) could be considered. Investments for health may inevitably involve more than a reshuffling of existing expenditure. There must be budget flexibility, of course, but new monies can support additional innovations beyond those currently budgeted. Dedicated taxes have been proven effective in some areas of public health such as cigarettes and alcohol consumption. These so-called sin taxes must, however be carefully considered and judicially applied to ensure their targets are culturally acceptable. While tobacco and alcohol control appear acceptable candidates for heavy taxes, it is doubtful that many other kinds of negative human behaviour can be addressed with such a tax approach. Taxing overweight people, snack foods, fossil fuels and television viewing, for example, could be cause problems. On the other hand, the investment-for-health objectives could benefit by a Tobin-style tax, which would generate income from currency transactions, a remote tax that could support a variety of economic and social development goals such as improved population health.

20. Investment for health needs to give special consideration to the role of women in promoting health. Women carry the health gene; they constitute the major resources in health care to the family and are heavy users of health care services. In many countries, women also comprise the majority of professional health care providers. Yet women are often underrepresented in decision-making on health policy, particularly in policy sectors that broadly affect their general health and wellbeing. Employment and educational policies are noteworthy examples, but other policy areas often harbour gender inequities as well. Investing for health must be vigilant for these biases; there is no room for compromise. That is why it is so important to mobilize constituent groups in the community to provide powerful political leverage in a highly focused and continuous way.
21. Investing for health needs to be set in a rich, evidence-based data environment. Throughout the Capri discussions, a recurrent theme was the importance of evidence-based planning in the selection of investment priorities and in monitoring the effect of policy interventions. A plan is needed for research that includes a schedule for periodic programme review. Special periodic studies of health states, demographic shifts, and economic events would allow data-based mid-course adjustments in policy formulation. Cross-national comparative studies may be useful, as well, as a device for reallocating regional policies and resources. Care should be taken to ensure that data collection not only meets high standards of validity and reliability, but also serves an educational purpose. Involvement of voluntary agencies and community groups should be encouraged. Such involvement increases the credibility of resulting data and could well affect the ultimate acceptability and usefulness of policy innovations. A planned approach to monitoring and special focus studies (as demonstrated by the WHO European Office for Investment for Health and Development) could lead to a pan-European research agenda with wide regional application.
22. To build a solid base for action, investing for health should set priorities for choosing the policy sectors and issues to address. With unlimited resources, one could contemplate a universal and continuing strategy to make public policies healthy policies and sustain their contributions to the health of the public. While a mechanism to support all ministries can be envisioned, an immediate and practical course for most countries in the Region would be to focus efforts on one high priority policy area or on one health issue across several policy areas. Initially, it is most important to build the necessary infrastructure, community participation, professional support and specialized skills in policy analysis. Having a small, well documented and widely acknowledged success is better than a flurry of activity with little to show for it. As a relatively new strategy, investment for health needs to build a solid base of support. Approaching these goals and strategies step by step is the best approach.

23. Assets for health and development need strengthening, and naturally occurring health resources, acknowledgement and activation. Healthy public policies are not built on a clean slate or in a vacuum. European societies are rich in health resources when they are fully blended into daily life. For example, family health is the product of values, beliefs, self-services and social interactions that together form a tightly knit fabric of health support. Indeed, lay activity is estimated to comprise a major part of all health activity (promotive, preventive, diagnostic, curative, rehabilitative), with little or no direct help from the professional world. Such a resource is the basis for building public policies that supplement and enrich the social resource in health (social capital). As even modest shifts in social capital can affect the impact of public policies, so too can modest investments of policy support make a vast difference to the value of social capital. Policies on environments, housing, adult education and the health and wellbeing of children, women and the elderly are examples of benefits to existing social (non-professional) resources. Investing for health should begin its review of policy options with this platform of resources in mind to ensure their optimum support of these resources and to minimize damage to their integrity.

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