Health status during the transition in Central and Eastern Europe: development in reverse?

OLUSOJI ADEYI, GNANARAJ CHELLARAJ, ELLEN GOLDSTEIN, ALEXANDER PREKER AND DENA RINGOLD

The World Bank, Washington, DC, USA

This paper reports on a study of the cross-national trends in health status during the economic transition and associated health sector reforms in Central and Eastern Europe (CEE). The central premise is that before long-run gains in health status are realized, the transition towards a market economy and adoption of democratic forms of government should lead to short-run deterioration as a result of: (i) reduction in real income and widening income disparities; (ii) stress and stress-related behaviour; (iii) lax regulation of environmental and occupational risks; and (iv) breakdown in basic health services. Analysis focused on three broad indicators of health status: life expectancy at birth, infant mortality rate and the probability of dying between the ages of 15 and 65 years, shown by the notation ‘50q15’.

The study revealed significant new information about health status and the health sector which could not have been obtained without a proper cross-national study. Infant mortality rates in former socialist economies (FSE) follow the global trend, declining as per capita income rises. However, rates are lower than would be predicted given their income levels. Despite declining infant mortality, life expectancy at birth in the former socialist economies decreases as per capita income rises, in marked contrast to global trends. This is because rising income level is associated with greater probability of death between the ages of 15 and 65: the wealthier the society, the less healthy is its population, particularly for its males.

Causes of death in the FSE follow global trends: higher death rates due to infectious and parasitic diseases in poorer countries, and higher death rates due to chronic diseases in wealthier countries. However, age-standardized death rates for chronic diseases generally associated with unhealthy lifestyles and environmental risk factors are very high when compared with wealthier established market economies (EME). Policies and procedures which alter the effectiveness of health services have had a demonstrable but mixed impact on health status during the early phase of transition.

Effective preventive health strategies must be formulated and implemented to reverse the adverse trends observed in Central and Eastern Europe.

Introduction

Since the late 1980s, the countries of Central and Eastern Europe (CEE) have undertaken a transition away from central planning toward market-based economies. In some countries, health system reforms have taken on a great urgency, partly because of the extreme economic and fiscal distress associated with the early phase of transition. Two issues have dominated the debate. One is the need to do more with declining or stagnating resources. The other is the mortality and health crisis burdening most CEE countries since 1989 (UNICEF 1994).

There is a clear divide in mortality between Eastern and Western Europe, which has largely developed over the past three decades and is caused mainly by chronic diseases in adulthood (Bobak and Marmot 1996). The rapid increase in the incidence and prevalence of coronary heart disease now underway in CEE resembles a similar epidemiological transition
which occurred in England and Wales in the 1950s and 1960s (Marmot and Mustard 1996). Although a growing body of country-specific studies is focusing attention on the substantial excess mortality in CEE compared to Western Europe, the reasons for the differences are not clear (Bobak and Feachem 1992; Gaizauskiene and Westerling 1995; Bobak and Marmot 1996).

This paper reports on a study of the trends in health status during the economic transition and associated health sector reforms in CEE countries. The study was conducted as part of a multi-sectoral examination of the ‘Social Challenges of Transition’ in Central and Eastern Europe by the World Bank’s Human Resources Operations Division, Central and Southern Europe Departments.

The focus of the study is grounded in both a conceptual framework for health system reform in transition economies (Barr 1994; Sen 1995) and four years of operational work by the World Bank in health systems of Central and Eastern Europe. In the long run, the transition towards a market economy and adoption of democratic forms of government should ultimately lead to improvements in health status, through long-run increases in real income, more effective approaches to disease prevention, healthier lifestyles, improved regulation of environmental and occupational risks and incentives for higher-quality health care. Eventually, Central and Eastern Europe would be expected to close the gap with Western Europe in terms of health status. In the short run, however, one could expect that health status would deteriorate as a result of the following factors:

1. Reduction in real income and widening income disparities. Most countries in transition have suffered initial economic and fiscal contractions, as well as a broadening of income differentials in line with market-oriented economies. This has resulted in lower living standards for large segments of the population and increased poverty. Since socio-economic factors are the most powerful determinants of health status (World Bank 1993), measurable deterioration in a range of health indicators might be detected.

2. Stress and stress-related behaviour. Lower living standards, rising unemployment, uncertainty and inability to influence uncertainty, and other types of social dislocation could be expected to produce stress and induce increases in unhealthy behaviour (e.g., consumption of alcohol and tobacco, reckless driving). As the second most significant determinant of health status, these lifestyle factors could contribute to deterioration of health status through increases in injury and chronic diseases.

3. Lax regulation of environmental and occupational risks. Breakdown of centralized modes of enforcing industrial and environmental safety, inadequate even during the socialist era, could be expected to contribute to a further deterioration in health status during the transition – particularly as industries face unprecedented financial difficulties which prevent appropriate maintenance and investment in safer technologies.

4. Breakdown in basic health services. Reductions in real public spending for health, unaccompanied by reforms to ensure more effective resource allocation, could be expected to undermine equitable and appropriate access, and quality of basic health services and public health interventions. These would contribute to declining health status.

Methods

Study design

The study examined trends across ten Central and Eastern European countries, rather than delving deeply into one or two case studies. However, the selection of the ten countries, namely Albania, Bulgaria, Croatia, the Czech Republic, the Former Yugoslav Republic of Macedonia (FYR Macedonia), Hungary, Poland, Romania, Slovakia and Slovenia, was purposive (Robson 1993), not random in the statistical sense, leading to a considerable degree of selection bias. The selected countries belong to the group of formerly socialist countries, to which the authors had ready access in their operational work. For security reasons, neither Bosnia-Herzegovina nor the rump Yugoslav Federation was included in the sample.

Although the group of countries selected are at varying stages of socioeconomic development, represent divergent histories and cultures, and are at differing points in the transition process, extension of the study to the countries of the former Soviet Union and the Baltics would have provided a broader view of the impact of transition on health systems. In a few cases, where comparable data were readily available, examples from the latter group of countries were
included in the study. For static cross-national comparisons, the most recent year with complete data (which was usually 1993) is presented unless previous years show markedly different results.

A study of this type, relying on cross-national trend analysis, has certain inherent advantages and disadvantages. The greatest advantage is that it identifies the commonalities of the transition process, analysis of which can serve to enlighten future policy-making. The major disadvantage of this approach lies in a certain reductionism resulting from reliance on internationally-comparable statistical aggregates. In looking solely at comparable data across ten countries, one loses much of the richness and complexity of policy issues which can be explored only through detailed case study. Administrative and financial constraints on the sample size also restricted the types of statistical analysis which could be meaningfully applied. Thus, empirical testing in this context is limited to examinations of trends and simple correlations to determine if they conform to the expectations expressed in the initial hypotheses.

Data sources and limitations

Much of the data on health status and a portion of the data on health services were obtained from the World Health Organization’s Health for All (HFA) database for the European region, which includes Western Europe as well as Central and Eastern Europe and the countries of the former Soviet Union. The HFA database, consisting of approximately 270 health indicators in the European region, was initiated in 1985 to track international progress in meeting the targets of Health for All by the Year 2000. For countries in arrears on their reporting, or for those with no past reporting to WHO (e.g. the independent countries of the former Yugoslav federation), the authors worked with ministries of health and national statistical offices in the field to gather the data needed to complete the time series, according to standard WHO definitions. More recent data on life expectancy and age-standardized death rates were obtained from the World Health Statistics Annual for 1993 and 1994 (WHO 1994; WHO 1995).

Data on occupational and environmental risks, as well as mortality and injury associated with these risks, were usually not available for more than one year of the study period, thus precluding any assessment of transitional effects. These constraints limited the ability to test the hypothesis regarding the negative impact of deteriorating environmental and occupational regulation on health status.

Results

The analysis focused on the examination of changes in selected demographic and health indicators within each country between 1989 and 1993, and on cross-country comparisons of selected indicators in a specified year. In addition to the ten countries of Central and Eastern Europe, a small number of countries from the former Soviet Union and the Baltics were included in the review of health status, based on the availability of data. Key findings relating to health status are described in the following sections.

Table 1 presents an overview of the demographic and epidemiological characteristics of the countries in the period between 1989 and 1994. Fertility declined or stagnated in the former socialist economies (FSE), as indicated by the crude birth rates (except FYR Macedonia) and the total fertility rates (except Turkmenistan). With the exceptions of Albania and Turkmenistan, the total fertility rates for all the countries were below replacement levels in 1994. The infant mortality rates (IMR) declined in all the countries, with the exceptions of Albania, Bulgaria, Lithuania and Ukraine, which recorded increases. The IMR in Lithuania doubled during this period. The infant mortality rate data should be interpreted with caution, as recorded rates may have been influenced by changes in definition. Maternal mortality ratios declined or stagnated in all countries, with the exceptions of Bulgaria, Poland and Russia.

Crude death rates increased in most of the countries, with the exceptions of Albania, Croatia, the Czech Republic and Slovakia. Life expectancies at birth declined in Bulgaria, Hungary, Romania, Russia, Turkmenistan and Ukraine, stagnated in Lithuania, and increased in Albania, Croatia, the Czech Republic and Slovakia. The experiences of males differed from those of females during this period. Average life expectancy at birth for males declined markedly between 1989 and 1993 in Hungary, Bulgaria, Russia and Ukraine, while life expectancy for females stagnated. The most dramatic declines were in Russia (from 64.2 years in 1989 to 58.9 years in 1993) and Ukraine (from 66 years in 1989 to 62.6 years in 1993), as shown in Figure 1. These rates of decline (as much as 1.3 years per annum in Russia) represent accelerations of the trend during the socialist era, when life expectancy declined by 0.03–0.15 years per
Table 1. Selected demographic and health characteristics, 1989 and 1994

<table>
<thead>
<tr>
<th></th>
<th>Crude birth rate (births per 1000 persons)</th>
<th>Crude death rate (deaths per 1000 persons)</th>
<th>Total fertility rate</th>
<th>Infant mortality rate (deaths in first year, per 1000 births)</th>
<th>Maternal mortality rate</th>
<th>Life expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1989</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albania</td>
<td>24.6</td>
<td>5.4</td>
<td>3.1(^a)</td>
<td>30.9</td>
<td>45.6</td>
<td>72.1</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>12.5</td>
<td>11.9</td>
<td>1.9</td>
<td>14.4</td>
<td>18.7</td>
<td>71.3</td>
</tr>
<tr>
<td>Croatia</td>
<td>11.9</td>
<td>11.3</td>
<td>1.6(^a)</td>
<td>11.7</td>
<td>12.4</td>
<td>72.2</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>12.4</td>
<td>12.3</td>
<td>–</td>
<td>10.0</td>
<td>13.0</td>
<td>71.8</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>17.0</td>
<td>6.9</td>
<td>–</td>
<td>36.7</td>
<td>8.3</td>
<td>–</td>
</tr>
<tr>
<td>Hungary</td>
<td>11.7</td>
<td>13.7</td>
<td>1.8(^a)</td>
<td>15.7</td>
<td>15.4</td>
<td>69.6</td>
</tr>
<tr>
<td>Lithuania</td>
<td>15.1</td>
<td>10.3</td>
<td>2.0(^a)</td>
<td>10.7</td>
<td>28.7</td>
<td>68.7</td>
</tr>
<tr>
<td>Poland</td>
<td>14.8</td>
<td>10.0</td>
<td>2.1(^a)</td>
<td>16.0</td>
<td>10.7</td>
<td>71.1</td>
</tr>
<tr>
<td>Romania</td>
<td>16.0</td>
<td>10.7</td>
<td>2.1</td>
<td>26.9</td>
<td>169.4</td>
<td>69.6</td>
</tr>
<tr>
<td>Russia</td>
<td>14.7</td>
<td>10.7</td>
<td>2.0</td>
<td>18.1</td>
<td>49.0</td>
<td>69.6</td>
</tr>
<tr>
<td>Slovakia</td>
<td>15.3</td>
<td>10.2</td>
<td>2.1</td>
<td>13.5</td>
<td>15.0</td>
<td>71.1</td>
</tr>
<tr>
<td>Slovenia</td>
<td>11.8</td>
<td>9.3</td>
<td>1.5</td>
<td>8.1</td>
<td>4.2</td>
<td>72.8</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>35.0</td>
<td>7.7</td>
<td>3.6</td>
<td>54.7</td>
<td>55.2</td>
<td>65.1</td>
</tr>
<tr>
<td>Ukraine</td>
<td>13.4</td>
<td>11.7</td>
<td>1.9</td>
<td>13.0</td>
<td>32.7</td>
<td>70.9</td>
</tr>
<tr>
<td><strong>1994</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albania</td>
<td>22.3</td>
<td>5.25(^b)</td>
<td>2.6</td>
<td>35.7</td>
<td>22.6(^b)</td>
<td>73.7(^b)</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>9.4</td>
<td>13.2</td>
<td>1.4</td>
<td>16.3</td>
<td>20.1(^b)</td>
<td>70.9</td>
</tr>
<tr>
<td>Croatia</td>
<td>10.2</td>
<td>10.4</td>
<td>–</td>
<td>10.2</td>
<td>10.3</td>
<td>73.1</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>11.8</td>
<td>11.4</td>
<td>1.7</td>
<td>8.5</td>
<td>12.0</td>
<td>72.9</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>17.2</td>
<td>8.1</td>
<td>–</td>
<td>27.3(^b)</td>
<td>6.2(^b)</td>
<td>–</td>
</tr>
<tr>
<td>Hungary</td>
<td>11.3</td>
<td>14.3</td>
<td>1.7</td>
<td>11.6</td>
<td>10.4</td>
<td>69.4</td>
</tr>
<tr>
<td>Lithuania</td>
<td>11.5</td>
<td>12.5</td>
<td>1.8</td>
<td>16.5</td>
<td>16.3</td>
<td>68.7</td>
</tr>
<tr>
<td>Poland</td>
<td>12.8</td>
<td>10.2(^b)</td>
<td>1.8</td>
<td>13.3(^b)</td>
<td>11.7(^b)</td>
<td>71.7(^b)</td>
</tr>
<tr>
<td>Romania</td>
<td>10.9</td>
<td>11.7</td>
<td>1.4</td>
<td>23.9</td>
<td>60.4</td>
<td>69.5(^b)</td>
</tr>
<tr>
<td>Russia</td>
<td>9.5</td>
<td>15.6</td>
<td>1.4(^b)</td>
<td>18.6</td>
<td>52.3</td>
<td>64.1</td>
</tr>
<tr>
<td>Slovakia</td>
<td>12.5</td>
<td>9.6</td>
<td>1.9(^b)</td>
<td>11.2</td>
<td>6.0</td>
<td>–</td>
</tr>
<tr>
<td>Slovenia</td>
<td>9.8</td>
<td>9.7</td>
<td>1.3(^b)</td>
<td>6.5</td>
<td>5.07(^b)</td>
<td>74.1</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>34.8</td>
<td>7.9</td>
<td>3.9(^b)</td>
<td>42.9</td>
<td>42.7</td>
<td>63.9</td>
</tr>
<tr>
<td>Ukraine</td>
<td>10.1</td>
<td>14.7</td>
<td>1.5</td>
<td>14.3</td>
<td>32.8(^b)</td>
<td>68.4</td>
</tr>
<tr>
<td>CEE Average(^b)</td>
<td>12.4</td>
<td>11.4</td>
<td>–</td>
<td>14.4</td>
<td>20.9</td>
<td>71.1</td>
</tr>
<tr>
<td>FSU Average(^b)</td>
<td>13.3</td>
<td>13.1</td>
<td>–</td>
<td>23.5</td>
<td>41.0</td>
<td>66.1</td>
</tr>
<tr>
<td>EU Average(^b)</td>
<td>11.4</td>
<td>10.1</td>
<td>–</td>
<td>6.79</td>
<td>6.73</td>
<td>76.9</td>
</tr>
</tbody>
</table>

\(^\text{a}\) Percentage change, 1989-1994

\(^\text{b}\) data are for 1990

\(^\text{c}\) data are for 1993

\(^\text{d}\) The total fertility rate is a synthetic measure of the number of children a woman would have if she passed through her childbearing years at the current age-specific fertility rates.

\(^\text{e}\) per 100 000 births

Sources: WHO Health for All, UNICEF-ICDC TransMONEE Database
However, declines in life expectancy are not universal during the early transition—contrary to what is frequently assumed—and the magnitude of changes is apparently not associated with the magnitude of overall socioeconomic decline. Albania, Romania and Slovenia have seen little change in male life expectancy, while the Czech Republic, Poland and Slovakia have seen modest improvement. All of these countries, with the exception of the Czech Republic, have suffered greater declines in real income during the transition than Hungary. Among the countries with marked declines in life expectancy for males, Russia, the Ukraine and Bulgaria also experienced higher IMRs in 1993 than in 1989. Hungary, on the other hand, recorded a decline during this period (see Table 1).

UNICEF's Monitoring Reports on social developments during the transition identified three patterns of mortality dynamics in the region. While crude mortality rates edged upward in the first phase of the reforms in almost all countries in transition, this blip was swiftly and fully reabsorbed in the Czech Republic (1991) and later on, in Slovakia (1992), Poland and Slovenia (1994). In the former two countries, the downward trend in mortality persisted in 1994. The second pattern, which is typical of Hungary, Bulgaria and Romania, entails initial, moderate increases in the crude death rate, which stabilized in the following years above the pre-transition level. In the third pattern, the countries that registered the steepest increases in mortality after 1989, the countries of the former Soviet Union, experienced accelerations of death rates in the second and third years of the transition.

Overall, contrary to most expectations, the high 'transition mortality' of 1989–94 has not struck hardest at those groups generally considered most vulnerable for biological or social reasons, namely children, pregnant women and the elderly. In contrast, increases in adult male mortality are mainly responsible for overall deterioration in crude death rates and life expectancy at birth (UNICEF 1995).

Cross-national data on death rates for 1993 illustrate these patterns and differences among the FSE countries clearly. Age-standardized death rates (SDRs) are particularly useful for comparisons among countries because the effects of differences in the age distribution of populations are eliminated (see Figure 2). With respect to mortality from infectious and parasitic diseases, the observed pattern of SDRs among countries is consistent with the association of this group of diseases with lower income levels, although the association appears far stronger in the Central Asian Republics (e.g. Tajikistan, Uzbekistan and Kazakhstan) than in the countries of Central and Eastern Europe.
Mortality rates for some chronic diseases are extremely high among the wealthier former socialist economies, and far exceed rates in the established market economies (EME) which are at much higher income levels. In particular, the SDRs for circulatory diseases and ischemic heart disease in Hungarian and Russian males are double that of Albanian males, and nearly double the rates found in the United States. SDRs due to cerebrovascular disease (stroke) are also much higher in the former socialist economies than in the established market economies. The wealthier FSE are experiencing SDRs for lung cancer and liver disease on a par with EME (Hungary is an exception, with very high rates of chronic liver diseases).

Within Central and Eastern Europe, as well as the countries of the former Soviet Union and Baltics examined here, the IMR is negatively correlated with GDP per capita, as shown in Figure 3. This is consistent with both the global pattern and that seen in the EME. The IMR is a composite measure of the risk of neonatal death (which decreases with the availability of clinical neonatal care) and the risk of post-neonatal death (which decreases with maternal educational attainment, improved sanitation and nutrition, higher immunization coverage and more effective treatment of respiratory infections). Among the countries examined, Albania, FYR Macedonia and Hungary have IMRs above the trend line. This is also true of Russia, Uzbekistan, Kazakhstan and Estonia.

Bulgaria, Croatia, the Czech Republic, Poland, Slovakia and Slovenia have IMRs below the trend line.

On a global scale, however, the former socialist countries examined here had IMRs well below what would be predicted given their per capita income levels (ranging from US$ 300 to US$ 6000 per capita in 1993). Most striking are the poorest countries. For example, Albania had a GDP per capita of around US$ 340 and an IMR of only 34 per 1000 live births in 1993. This was far superior to developing countries at similar income levels, such as Benin (IMR of 110 per 1000 live births) and Pakistan (IMR of 95 per 1000 live births). This favourable health outcome is largely attributable to superior achievements in primary school enrolment among females, childhood immunization coverage (both generally exceeding 90% of age group) and environmental sanitation in former socialist countries. In some of the transition countries which have been hardest hit by economic decline, IMRs have deteriorated during the early 1990s.

Within the observed range of income in the former socialist economies, the male populations in the wealthier countries appear less healthy than those in poorer countries, as indicated by average life expectancy at birth, which declines moderately as per capita income rises across countries (see Figures 4 and 5).
This is in contrast to global trends (World Bank 1993), and to the pattern seen, albeit weakly, in the EME, in which life expectancy at birth increases moderately with rising per capita GDP.

Although the infant mortality rate is lower at higher national income levels, the probability of dying between ages 15 and 65 increases in the FSE, more sharply for men than for women (Figures 6 and 7). The results indicate that over the lifetime of a hypothetical cohort exposed to the current age-specific death rates, the cumulative effects of exposure to the risks of death would outweigh the cumulative benefits of increased wealth across countries. Adult males at the age of 15 in Hungary, one of the wealthiest countries, would have more than twice the chance of dying within the next 50 years compared with their counterparts in Albania, the poorest country in Central and Eastern Europe. Adult male mortality risk in Albania (21% between ages 15 and 65) is on a par with the average for the EME (20%). The countries of the former Soviet Union, including Russia (55%) and Ukraine (46%), and the Baltic Republics of Latvia (52%), Lithuania (46%)
Health status in Central and Eastern Europe

Figure 5. Life expectancy by GDP per capita for females in FSEs and EMEs in the early 1990s

Figure 6. 50q15 by GDP per capita for males in FSEs and EMEs in the early 1990s

and Estonia (47%) have particularly high adult male mortality risks, considerably higher than those found in Central and Eastern Europe.

The probability of death between ages 15 and 65 for females in the FSE is roughly half that for males, and rises less steeply as per capita income rises. The differential mortality risks indicated by these results is consistent with previous reports (UNICEF 1994). It appears that the impact of premature adult mortality is less preponderant in determining life expectancy at birth for women.

As shown in Figure 8, there is a poor correlation between 50q15 (probability of death between ages 15 and 65) and IMR in the FSE. Three clusters of countries can be identified on the chart. The first, with low-to-moderate IMR and high 50q15, includes Russia, Latvia, Estonia, Lithuania, Ukraine, Belarus and Hungary – constituting the ‘northern’ cluster of
countries in the region. The second, with low IMR and low 50q15, includes Bulgaria, Armenia and the Czech Republic – the ‘southern’ cluster of countries in the region, with Poland, a ‘northern’ country, being an exception in this cluster. The third cluster, with high IMR and low 50q15, includes Uzbekistan and Tajikistan, the Central Asian Republics, and Albania, a ‘southern’ country. Kazakhstan falls into none of the three clusters. These findings are largely consistent with an earlier report by Murray and Bobadilla (1995), which noted that the FSE countries are not an epidemiologically homogenous group.

Causes of unusual male mortality levels in the northern FSE remain poorly explained. Hypotheses include alcohol, smoking, cohort effect, diet, pollution, occupational exposures, organization of the health system, communism (Murray and Bobadilla 1995) and income differentials among countries. In a recent study of mortality trends in Czechoslovakia, Hungary and Poland between 1979 and 1990, Chenet et al. illustrated the impact of increasing mortality from select diseases, notably cancer and circulatory disease, on changing life expectancies for males and females (Chenet et al. 1996).
Aggregate data on changes in health-related behaviours during the early transition are scant. Some evidence exists that cigarette consumption, which was high by global standards prior to the transition, has increased. Cigarette consumption increased in all but two of the countries from 1987 to 1993 (Figure 9). Slovakia and the Czech Republic recorded extraordinary increases of 235% and 50%, respectively, in cigarette consumption per person per year during this period, and had the highest rates of consumption per person. Cigarette consumption data should, however, be treated with some caution because clandestine exports may have been falsely classified as local consumption in the exporting country. The findings of high and increasing cigarette consumption rates are consistent with data from Poland and Hungary presented in a previous report by UNICEF (UNICEF 1994). Increasing cigarette consumption will increase risks of cardiovascular diseases, lung cancer and other chronic diseases which are the main causes of premature adult mortality.

No striking trends were evident in the consumption of alcohol per person by country, and few data are available to assess changes over time. Slovenia, Slovakia and Hungary had the highest rates of alcohol consumption within the region, with 1991 rates in Hungary and Slovenia exceeding the OECD average of 9.6 litres per person aged 15 years or older (Scheiber et al. 1994). Although it is inappropriate to make causal attributions on the basis of the limited data in this study, these findings make it reasonable on the basis of known proximate determinants of chronic diseases and the effects on health of smoking (Centers for Disease Control 1989) and heavy consumption of alcohol (Shaper 1993; Stampfer et al. 1993) to advocate public health policy focusing strongly on reduced smoking, reduced alcohol consumption (i.e. avoid bingos and chronic excesses), healthier dietary practices and exercise.

The capacity of some health policies to influence health outcomes, even in the short term, can be examined empirically, as in the following examples. In Romania, maternal mortality increased sharply when abortions were banned in 1966, and fell by two-thirds following the legalization of abortion and the liberalization of the contraceptive market in 1989–90. The maternal mortality ratio fell from 170 deaths per 100 000 live births in 1989 to 53 in 1993, and has remained at the lower level since (see Figure 10). In other CEE countries for which data are available, maternal mortality ratios have continued their long-term downward trend in recent years, apparently undisturbed by the transition.

In contrast to the positive health outcome in Romania, a fall in measles immunization coverage in FYR Macedonia, from around 90% in 1991 to only about 60% in 1992, was followed by sharp increases in the incidence of measles, from 8 per 100 000 in 1992
Figure 10. Changes in abortions and maternal deaths in Romania, 1987-1993

Figure 11. Immunization coverage and incidence of measles in FYR Macedonia, 1987-1994

to 120 in 1993 and 229 in 1994 (see Figure 11). At the same time, increased measles incidence rates in Bulgaria (1991, 1992), Hungary (1989), Poland (1990) and Romania (1993) were relatively modest, and were not preceded by significant declines in immunization coverage rates. These increased incidence rates may have been due to reduced vaccine effectiveness, changes in the reporting system, or both.\(^3\)

Discussion

A number of significant policy implications evolve out of the cross-national observations made in this study which would not be obvious in a single country case study. The observed relationship between life expectancy at birth and GDP per capita within CEE countries is inconsistent with the global pattern, but it is consistent with previous reports that the southern countries of Central and Eastern Europe are poorer but healthier than those of the north (Preker and Feachem 1994). In general, the single most important predictor of a nation’s health status is its per capita GDP (Scheiber 1989; World Bank 1993).

Despite the limitation of a small sample size, and the fact that the findings are more indicative than definitive, certain conclusions are in order here. First, although the absolute levels of IMR are higher in the FSE than in the EME, the trends in both are consistent with the global pattern of declining IMR with
increasing GDP per capita. One is led to conclude that the difference between the FSE and the EME in the life expectancy/income trends is not largely attributable to IMR differences. Second, the trends in adult mortality risk differ between the FSE and EME, indicating that significant risks of adult death in the wealthier FSE countries counteract the positive net health effects that would be expected from increased income. Third, better clinical management in the EME probably accounts for some of the differences in the patterns of life expectancy at birth.

Lifestyle factors – diet, alcohol and tobacco consumption, lack of exercise and stress – account in part for the adult mortality patterns observed in the FSE. Peto et al. (1994) noted that because the effects of tobacco were so great among males in the FSE, the death rates from non-communicable diseases were higher in that region than in any other. Overall, removal of the effects of tobacco in 1990 from their reported data would remove completely the anomalous excess of male deaths in the FSE (Peto et al. 1994). In addition, environmental pollution contributes to adverse health outcomes, although the relative impact of environment pollution on life expectancy in heavily polluted areas of CEE is unlikely to be as important as shortcomings in medical care and lifestyle factors such as smoking, diet and exercise (Hertzman 1994) and causal associations are difficult to establish.

The health policy implication of these observations is that effective preventive health strategies must be formulated and implemented to reverse the alarming trends observed in Central and Eastern Europe. Unless such strategies are pursued, the FSE will face even greater burdens of preventable chronic diseases in the medium and long term, pushing the development of their health sectors to a higher cost trajectory, with a decreasing social return to health expenditure over time. This scenario has been succinctly discussed by other authors, although without the benefit of the kind of data presented in this paper (Berman 1995). Gaizauskiene and Westerling (1995) concluded that a system that worked well at reducing avoidable mortality would probably be more dependent on national health policy than on the medical intervention per se. Many of these public health policies will be outside traditional interventions provided through health services and require extensive high level national coordination in areas such as agricultural policy, public education and strategic use of fiscal instruments such as excise taxes on alcohol and tobacco.

Growing income inequality and poverty associated with the transition from socialism may lead to further declines in aggregate health status. Wilkinson (1992) has noted that among industrialized countries, income differentials, rather than income levels, are better predictors of health status. Countries with a more equitable distribution of wealth tend to have higher life expectancies than countries with high levels of income inequality. Following decades of wage compression under socialism, income differentials in CEE have rapidly adjusted to that of OECD countries with mid to high levels of inequality (Rutkowski 1996). Policies for improving health in the region should be formulated in the context of a broader strategy for growth and poverty reduction.

The example of the pro-natalist policies in Romania shows the adverse health effects of ill-conceived government policies. Although political decisions are not necessarily based on rational consideration of causes and effects, there is a case to be made for strengthening national capacities to anticipate possible effects of major policies on health status, thereby enabling decision-makers to at least have access to information on possible effects of their actions.

Effective service delivery systems constitute the critical link between policies and the population. Even with the best of intentions, failure to maintain supplies and service delivery is likely to occur in the face of transient contractions in real expenditures on health. It is essential that health policies emphasize the maintenance of key public health functions through access to basic health services during the transition.

**Conclusions**

The study revealed important new information about health status and the health sector which could not have been obtained without a proper cross-national study. The most salient points are summarized below.

Four of the ten countries for which data were available – Hungary, Bulgaria, Russia and the Ukraine – have experienced marked declines in life expectancy for males during the early phase of transition, while life expectancy for females has stagnated. The magnitude of changes in male life expectancy is not related to the magnitude of overall economic contraction.
The causes of mortality in the FSE are consistent with global trends of the epidemiological transition: higher death rates due to infectious and parasitic diseases in poorer countries, and higher death rates due to chronic diseases in wealthier countries. However, age-standardized death rates for chronic diseases generally associated with unhealthy lifestyles are extremely high when compared with wealthier EME countries. IMRs in the former socialist countries follow the global trend, declining as per capita income rises across countries. However, the rates are lower than would be predicted given their income levels. Despite declining IMR across countries, decreasing male life expectancy at birth in the former socialist economies is associated with increasing per capita income across countries, in marked contrast to global trends. This is because rising income levels across countries is associated with greater probability of death between the ages of 15 and 65: the wealthier the society, the less healthy its adult population – particularly for its males.

Policies and practices which alter the effectiveness of health services had a demonstrable impact on health status during the early phase of the transition. The impact has been mixed. Where the transition has resulted in more rational policies – such as increased availability of contraceptives and safe abortions in Romania – the effect on health outcomes has been positive and dramatic. Where systematic constraints and poor resource allocation have prevented effective service delivery – such as childhood immunization in FYR Macedonia – the effect on health outcomes has been negative and equally marked.

Due to the limitations of the small sample size and the sampling technique, it was not possible to do meaningful regression analysis to identify the potential determinants of the observed trends, nor was it possible to make generalizations beyond the sample of countries in the study. There is an urgent need for a more systematic approach to data collection and operational research in Central and Eastern Europe, led by the nationals and supported by international agencies and research institutions.

Although more analysis is needed to reach firm conclusions on the impact of the transition on health status, there is clear evidence that effective preventive health strategies must be formulated and implemented to reverse the adverse trends observed in Central and Eastern Europe.

Endnotes

1 Growth in the former socialist economies has been accompanied by rapid increases in income differentials and poverty (Rutkowski 1996). Improvements in health status are contingent upon the abilities of countries to minimize the impact of growing inequality through targeted poverty alleviation measures (Hutton 1995).

2 This is shown by the notation 50q15. The 50q15 function is the numerical answer to the question: among persons who reach the exact age of 15, what proportion will die before their 65th birthday, i.e. within 50 years? It is based on period/cross-sectional life tables, a mathematical model of the life history of a hypothetical cohort. For further details, see Palmore and Gardner 1993.

3 Another dramatic example of the impact national policy measures can exert on mortality is the case of sudden infant death syndrome (SID) (McKee et al. 1996).

References


Acknowledgements

The material reported in this paper was prepared as a part of a larger, multi-sectoral study on the Social Challenges of the Transition in the CEE countries, undertaken by the World Bank’s Human Resources Operations Division, Central and Southern Europe Departments. The authors acknowledge the support and leadership of Ralph Harbison (Division Chief) during this study.

Much of this study would not have been possible without the close collaboration of the European Office of the World Health Organization in Copenhagen and its Health For All (HFA) monitoring network throughout Central and Eastern Europe. The authors are particularly indebted to Mr Nanda Arun (European Regional Office of the World Health Organization in Copenhagen) and Dr Jean-Pierre Poulter (OECD) for their early contributions to the methodological design of the study. Invaluable contributions were also received from the Ministries of Health, Ministries of Finance, Central Statistical Offices and other counterpart agencies throughout Central and Eastern Europe.

The authors would also like to thank Mr Kemal Dervis (Vice President, MNA Region, The World Bank) and Mr Andrew Rogerson (Director of Africa 3 Department, The World Bank) for their continued enthusiasm and support during the early phases of the study. Peer reviewers, Mr George Schieber and Dr Prabhat Jha (Human Development Department, The World Bank), Dr Jose-Luis Bobadilla (Principal Health Specialist, Inter-American Development Bank), Dr David Peters (West Central Africa Department, The World Bank), Dr Martin McKee (Senior Lecturer, London School of Hygiene and Tropical Medicine) and Mr Chris Lovelace (Senior Health Specialist, Central and Southern Europe Departments, The World Bank) provided valuable comments during the final revision of the document. Technical support for the SCT data collection exercise was provided by Mr Jan Rutkowski and s Dorota Hoizer (Consultants, World Bank Resident Mission Warsaw). Mr Brandon Cline (Staff Assistant) and Mr Ross avis (Staff Assistant) prepared the charts and formatted the document.

The authors alone are responsible for the findings, opinions and conclusions reported in this paper.

Biographies

Olusoji Adeyi, MBBS, DrPH, is a Health Specialist in the Central and Southern Europe Departments of the World Bank. He has substantial responsibilities for the Bank’s work on health system development in Bosnia and Herzegovina, Romania, Albania and Turkey. Dr Adeyi’s earlier programme and research experience include work on rural health insurance in Thailand; primary health care in urban Karachi, Pakistan; district health system development and evaluation in Ethiopia and Nigeria; and the quality and financing of maternal health care in Nigeria.

Gnanaraj Chellaraj, MPH, PhD, is currently a Consultant to the World Bank. He received his doctorate in Food Economics from Purdue University and a Master of Public Health degree from Harvard University. In addition to his work in Eastern Europe and the Former Soviet Union, he has worked extensively in the field on health issues in Africa, the Middle East, Asia/Pacific and Latin America and the Caribbean.

Ellen Goldstein, MPA, MPH, is a Senior Human Resources Economist at the World Bank. She is currently serving as the World Bank Resident Representative in the former Yugoslav Republic of Macedonia. Previously she worked on health sector reform programmes in the Central and Southern Europe Departments, focusing particularly on health financing and expenditure management. Her earlier work focused on macroeconomic management and structural adjustment in South Asia and West Africa.

Alexander S Preker, MD, Dip Med Law, PhD, works as a Principal Economist in the Human Development Department of the World Bank. He has worked extensively in the European, Middle East and North Africa regions of the World Bank, focusing particularly on health financing, social insurance and public sector reforms. He is currently coordinating a team that is developing the Bank’s first Sector Strategy Paper for the Health, Nutrition and Population (HNP) Sector, and is responsible for the Bank’s training and quality review of economic analysis in the HNP Sector.

Dena Ringold, BA, MSc (Econ), is a Research Assistant in the Central and Southern Europe Departments of the World Bank. Prior to her work at the Bank, she studied political economy and government at the London School of Economics.

Correspondence: Dr Olusoji Adeyi, The World Bank, 1818 H Street, NW, Washington DC 20433, USA.