



European Network of Economic Policy
Research Institutes

HEALTH STATUS AND HEALTH CARE SYSTEMS IN CENTRAL & EASTERN EUROPEAN COUNTRIES BULGARIA, ESTONIA, POLAND, SLOVAKIA AND HUNGARY

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ENEPRI RESEARCH REPORT NO. 31

AHEAD WP2

DECEMBER 2006



ENEPRI Research Reports consist of papers presenting the findings and conclusions of research undertaken in the context of ENEPRI research projects. This paper was prepared as part of Work Package 2 of the **AHEAD project** – *Ageing, Health Status and the Determinants of Health Expenditure* – which has received financing from the European Commission under the 6th Research Framework Programme (contract no. SP21-CT-2003-502641). Its findings and conclusions are attributable only to the authors and not to ENEPRI or any of its member institutions.

ISBN 92-9079-639-1

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Health Status and Health Care Systems in Central and Eastern European Countries Bulgaria, Estonia, Poland, Slovakia and Hungary

ENEPRI Research Report No. 31/December 2006

Stanisława Golinowska, Agnieszka Sowa & Roman Topór-Mądry*

Introduction

The analysis aims to describe processes of demographic and epidemiological change, as well as health status self-assessment in selected Central and Eastern Europe countries (CEECs), including both the new member states and the candidate countries. The analysis is presented in the context of the use of medical services and the structure of services used. Special attention is given to those demographic and epidemiological changes that have direct impact on the frequency of medical services used and, as such, determine increases in health care costs. The ageing process and health status improvement are the main hypothetical determinants of health care costs and are therefore presented in more detail. Additionally, changes in health behaviour – mainly in the use of medical services – are discussed in the context of institutional changes in the health care sector.

Comparative analysis covers the countries representing groups characterised by similar tendencies and specific health and demographic characteristics. Estonia represents the Baltic states, Bulgaria, the Balkan countries, and Slovakia represents countries of Central Europe. Poland is a specific country, with demographic and epidemiological characteristics similar to Slovakia, but it is much larger, with a high share of rural population. In Hungary, demographic processes related to the second demographic transition began much earlier and are still dynamic, and as such, constitute a reference for other CEECs.

Data sources

The analysis refers to several data sources, including the WHO database “Health for All” (HFA), the OECD database on health and two WHO reports: “Health Care Systems in Transition” (HIT) and “Highlights on Health”.

The European Health for All database (HFA) was started by the WHO Regional Office for Europe (WHO/Europe) in the 1980s to support the monitoring of health trends in the region and is being continuously developed. The database is a helpful tool for making international comparisons and for assessing the health situation and trends in any European country in an international context. The HFA database covers countries of the European region and former USSR countries. It consists of almost 270 health indicators, which have been collected since 1985 in order to track progress towards targets of Health for All by the Year 2000 Programme. For the period before 1985, estimates of appropriate statistics are used.

The 2004 edition of *OECD Health Data* is another comprehensive source of comparable statistics on health and health care systems across OECD countries. Data are based on statistics that have been collected and published by the OECD secretariat since the mid-1980s. Most of the indicators cover the period of the 1980s and 1990s, while for many indicators the estimates

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go back to the 1960s. The database covers over 1,200 indicators. OECD data served as an extremely useful tool for the institutional section of the report (but only for three member countries of the OECD).

Additional sources of information on institutional changes in health care and epidemiological changes in countries under study are WHO “Health Care Systems in Transition” (HIT) and WHO “Highlights on Health” publications. HITs are country-based profiles that provide a description of each health care system and of reform initiatives in progress or under development. HITs seek to provide relevant information to support policy-makers and analysts in the development of health care systems in Europe. HIT are published within the framework of the European Observatory on Health Care Systems, coordinated by the WHO European Centre for Health Policy. HIT country profiles cover a number of subjects, including funding health care; health care system reforms; organisation of primary, secondary and tertiary care; purchasing and pharmaceutical sector regulations. Studies for each of the countries under analysis are available. Country “Highlights on Health” are also coordinated by the WHO European centre. However, their scope of interest is different. Country reports provide overviews of the health and health-related situation in a given country and compare, where possible, its position in relation to other countries in the WHO European Region. The highlights have been developed in collaboration with WHO member states. They are based on information provided by member states and other sources.

In addition to international organisations’ data and studies, other very important sources of information are AHEAD reports on health and morbidity in the accession countries: Bulgaria, Estonia, Hungary, Poland and Slovakia. These reports were prepared by national teams of experts and cover issues of health status, health care systems performance, including descriptions of the latest reforms, legal regulations and structure of health care systems, empirical analysis of factors explaining changes in health status and medical services use. The reports refer to relevant national sources, including ministries of health, research institutes and national statistical offices. For the purpose of empirical analysis survey, data on health status self-assessment and health systems performance are used (see table below).

Table 1. National surveys used in the analysis

Country	Year conducted	Title
Bulgaria	1997	Bulgaria Integrated Household Survey
Estonia	1999	Living Conditions Study in Estonia (Norvalt II)
Hungary	2003	National Health Interview Survey
Poland	1996	Health Status Population Survey
	1998, 1999, 2003	Health Care in Households Survey
Slovakia	2003	CINDY Health Monitor Questionnaire

Source: Own compilation based on AHEAD country reports.

The surveys listed are not standardised and are not therefore fully comparable between countries. What the surveys have in common are a subjective evaluation of health status and reports on medical services usage. Surveys are cross-sections, and even in case of time series (Poland) they do not constitute a panel. Besides health status information, they include data on the basic demographic, social and economic situation of individual. However, the set of individual data is different in each country, e.g. information on sex, age and education is available in each country, while information on disability is available only in Estonia. Detailed information on the content of each survey is presented in the second section of the report.

Structure of the study

This report consists of four sections. The first section discusses demographic changes: increases in the size of the population, changes in population structure and its main drivers: decreasing fertility and mortality. The second section presents epidemiological changes, especially longevity and the main causes of mortality. This section of the report presents the health status of the population of countries under analysis. Health status characteristics include not only epidemiological descriptions, but also analysis of health self-assessments and its correlates. The analysis is based on survey data on health status evaluation. The third section presents the institutional changes of the health care sector during the transformation period of the CEECs. The fourth and final section discusses indicators of medical services use and the correlation between use and selected patients' characteristics. Hypotheses of relations between these variables and medical services use are tested. The logit analysis model is used to indicate to what extent the probability of medical services use depends on external factors. The concluding part of the report discusses the challenges the countries analysed have to face in terms of the impact of demographic and epidemiological changes on health care expenditure.

1. Demographic Development of the CEECs

As mentioned in the introduction, the size and structure of the population as well as the epidemiological characteristics of Central and Eastern European countries differ considerably. Nevertheless, the main tendencies of these changes are similar: the population is decreasing, the share of the elderly in the population is increasing and the health status of the population is improving slowly. Nevertheless, the dynamics of change vary between the countries being analysed.

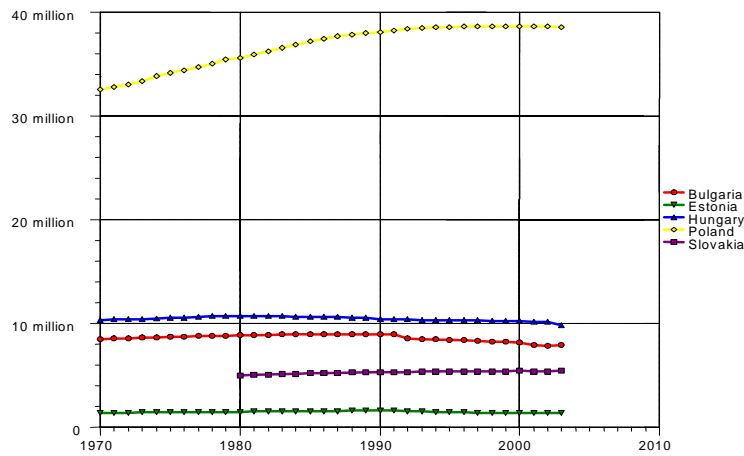
1.1 Population size and structure

After World War II, there was a marked increase in the population of CEECs. It was more dynamic than in Western European countries. In Poland, the largest country of the group, the size of the population between 1946 and 1988¹ increased by 15 million people (60% increase). In Hungary, the population increase was not that dynamic and continued only until 1981. Since 1981, the Hungarian population has not increased.

In all CEECs, the population stabilised at the beginning of the 1990s. Among the countries analysed, the most dynamic population decrease is observed in Bulgaria (see Figure 1). The population decrease was accompanied by changes in population structure. The ageing process can be observed in all the countries of Central and Eastern Europe. The ageing process in those countries started later than in Western Europe, but in recent years it has accelerated more quickly than in the EU-15. The share of the population over 65 has been significantly increasing since the mid-1980s. The fastest ageing is reported in Bulgaria, Hungary and Estonia. Among the Baltic countries, similar ageing process dynamics can be observed in Latvia. The increase in the share of the elderly is slightly slower in Poland and Slovakia.

¹ In 1946 and 1988, the size of the population was estimated by population censuses.

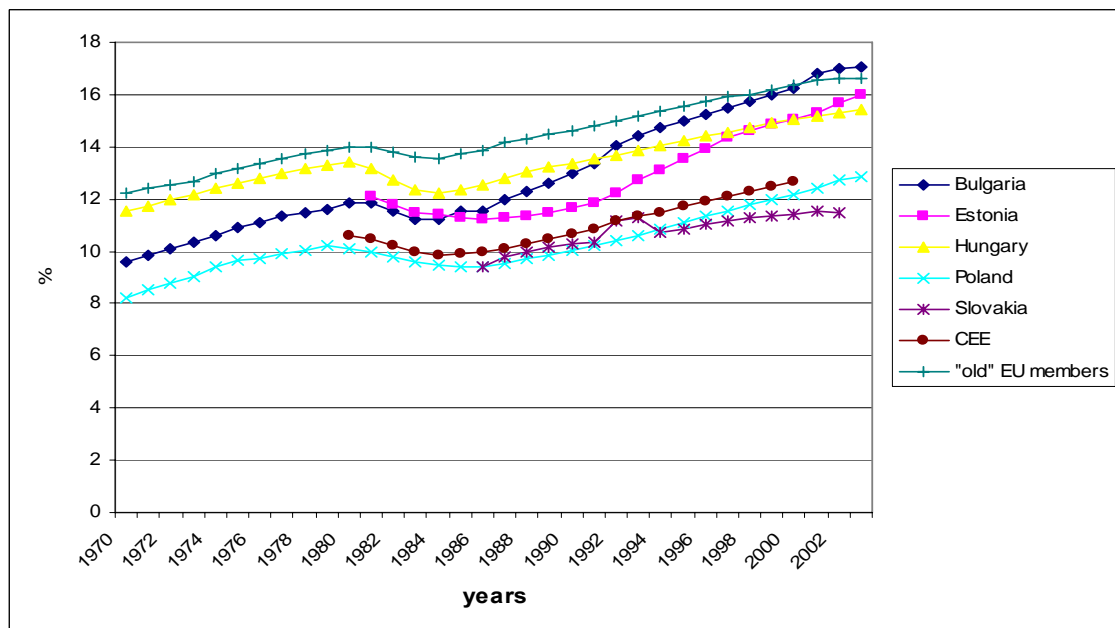
Figure 1. Population size, 1970-2003



Source: WHO, "Health for All Database", 2005.

On average, the share of the population over 65 in the CEE region is below the average EU-10 level. However, except for Bulgaria, the gap between the EU-10 and new member states and candidate countries is not large. Among the countries analysed, the share of the elderly in the population in 2003 in Estonia (as in the other Baltic countries) and Hungary exceeded 15%, i.e. very close to the EU-15 level, and is expected to grow. Additionally, the average life expectancy of the elderly (65+) is increasing. This process is reflected in the declining mortality of the elderly. Among the countries under analysis, only Bulgaria and Romania have not experienced a declining mortality rate among the elderly.

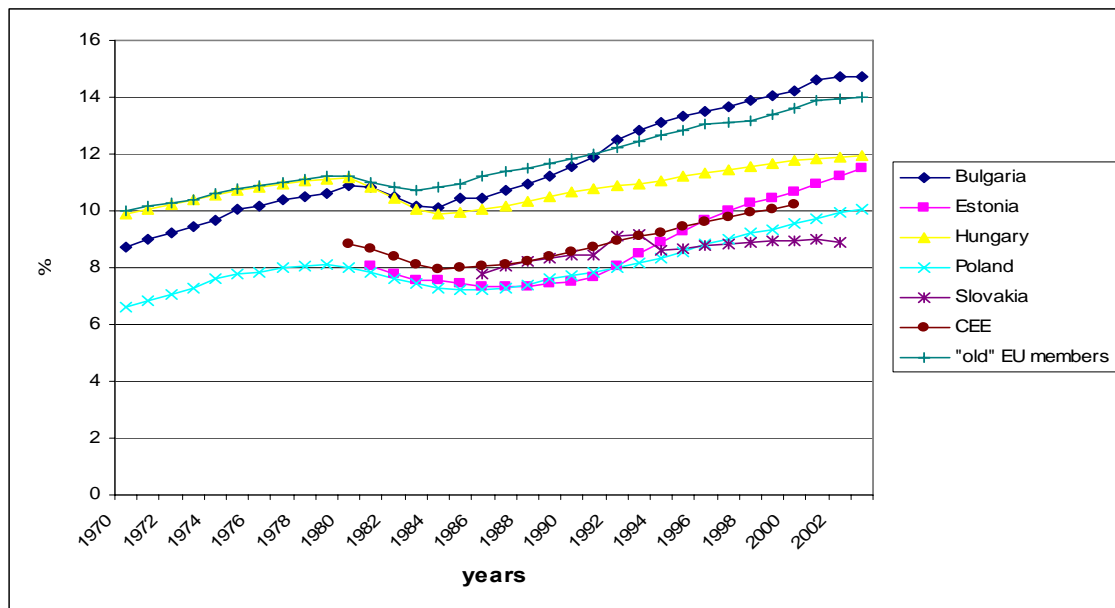
Figure 2. Share of elderly (65+) in the population, 1970-2002



Source: WHO, "Health for All Database", 2002-05.

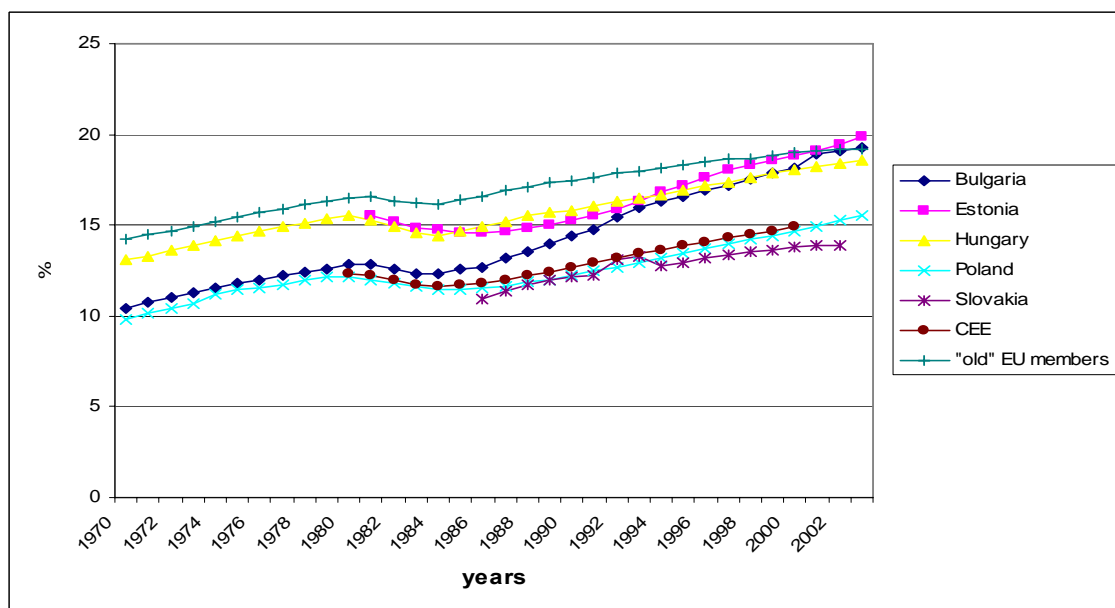
The picture changes when gender is taken into account (except for Hungary). The share of elderly women is significantly higher than men. The level of the indicator is close to the share of the elderly in Bulgaria, whose population has the highest ageing dynamics. In Hungary, a high incidence of death among men of working age could be observed. A similar phenomenon could be observed in Poland and was attributed to the process of intensive, communist-type industrialisation (Okólski, 2004). This process results in over-representation of elderly females in the population.

Figure 3. Share of elderly (65+) males in the population, 1970-2002 (%)



Source: WHO, "Health for All Database", 2002-05.

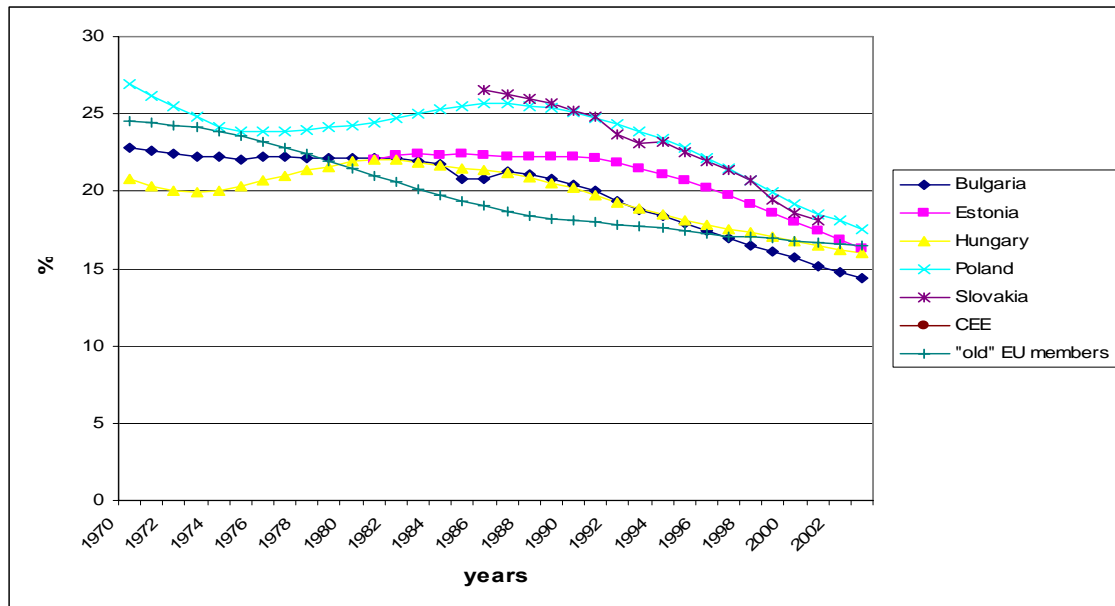
Figure 4. Share of elderly (65+) females in the population, 1970-2002 (%)



Source: WHO, "Health for All Database", 2002-05.

The increase in the percentage of the population made up of the elderly is mirrored by a decrease in the percentage of the population made up of children. The percentage of children below 14 years of age has moved in the opposite direction from that for the elderly. The dynamics of this process is the most pronounced in Bulgaria and Estonia, and the least pronounced in Slovakia and Poland.

Figure 5. Share of the young (0-14) in the population, 1970-2003 (%)

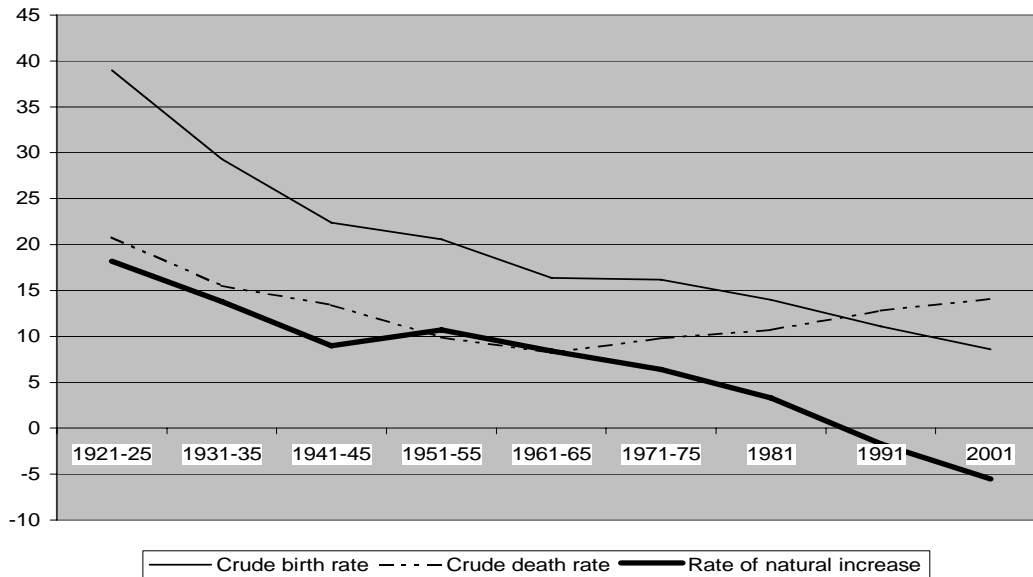


Source: WHO, "Health for All Database", 2002-05.

1.2 Fertility

Two types of factors have contributed to falling populations and the change in their structure: lower levels of fertility and – to a lesser extent – emigration to Western Europe. These processes were accompanied by a stabilisation of and, in some countries, an improvement in mortality.

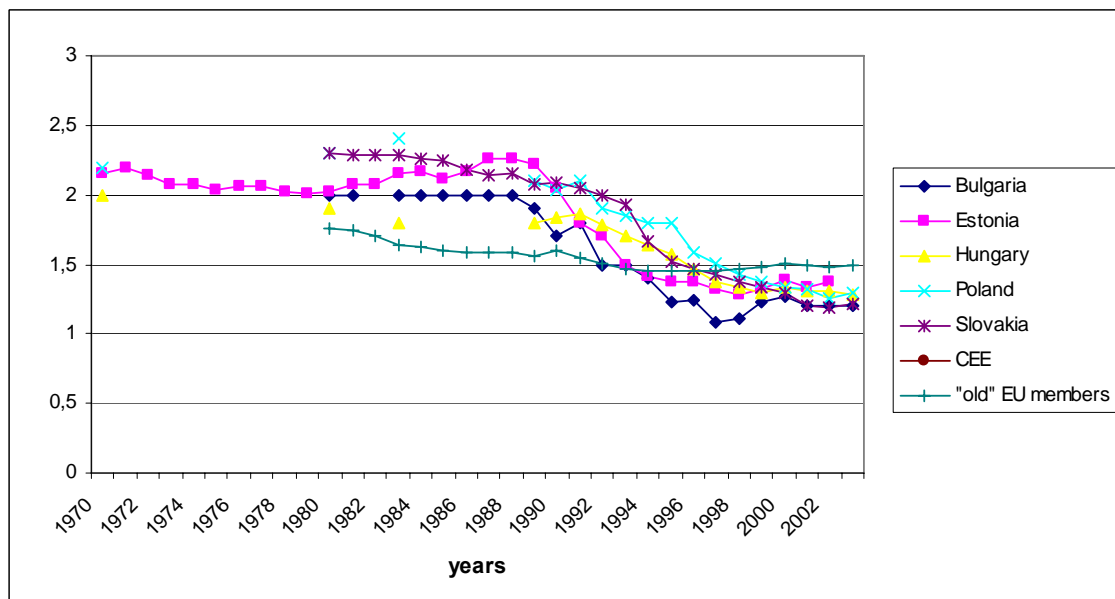
Figure 6. Crude birth rate, crude death rate and rate of natural increase in Bulgaria, 1921-2001, per 1,000 people



Source: R. Rangelova (2006), *Health and Morbidity in the Accession Countries – Country Report Bulgaria*, AHEAD Work Package II.

A decrease in the number of new marriages and in fertility can be observed in all countries analysed, with the most marked trend in Bulgaria. Similarly, in Poland – the country with traditionally high increases in population (up until 1984 the total fertility rate had been increasing) – fertility decreased to one of the lowest total fertility rates (TFRs) in the world (1.29 in 2001). This trend was confirmed by the population census results in 2002.

Figure 7. Total fertility rate (%)



Source: WHO, "Health for All Database", 2005.

According to some hypotheses, demographic changes in Central and Eastern Europe were a consequence of political and economic transformation (ICDC Unicef, 1994). However, more detailed analyses indicate that these processes had begun as early as the mid-1980s, especially with regard to the changes related to population decrease and ageing due to decreasing fertility (Okólski, 2004).

The trend in the CEECs in terms of demographic changes is typical of developed countries and has already been experienced in Western European countries. Nevertheless, there are discrepancies between the CEECs and the EU15. First, the dynamics of demographic change is significantly higher in the CEECs than in the EU15. Secondly, the scope for immigration in the CEECs is much lower. Indeed, those countries are characterised by high emigration levels. Thirdly, up until now, ageing and low fertility have been observed in the countries with higher income than in the CEECs. In a discussion of these changes in the context of economic development of former communist countries, Nicholas Eberstadt (2005) describes these processes as unprecedented.

2. Population Health Status in CEECs

In international comparisons one can use several synthetic indicators to illustrate the health status of the population (Sadana et al., 2000). Average life expectancy, or life expectancy (LE) for short, is a fundamental one. At present, this indicator is more and more frequently supplemented with its quality-oriented variety, i.e. the expectancy of life in good health – healthy adjusted life expectancy (HALE). Other very illuminating indicators for the health status of the population describe such aspects as infant mortality, general mortality and mortality broken down according to the basic causes of death. Of those, the infant mortality rate seems to be of particular significance from the standpoint of social and health conditions typical of a country's population, as it is closely correlated with the level of social prosperity. Morbidity indicators also play a substantial role in the identification of health status of a given population. However, their availability as well as credibility are rather limited.

2.1 Life expectancy

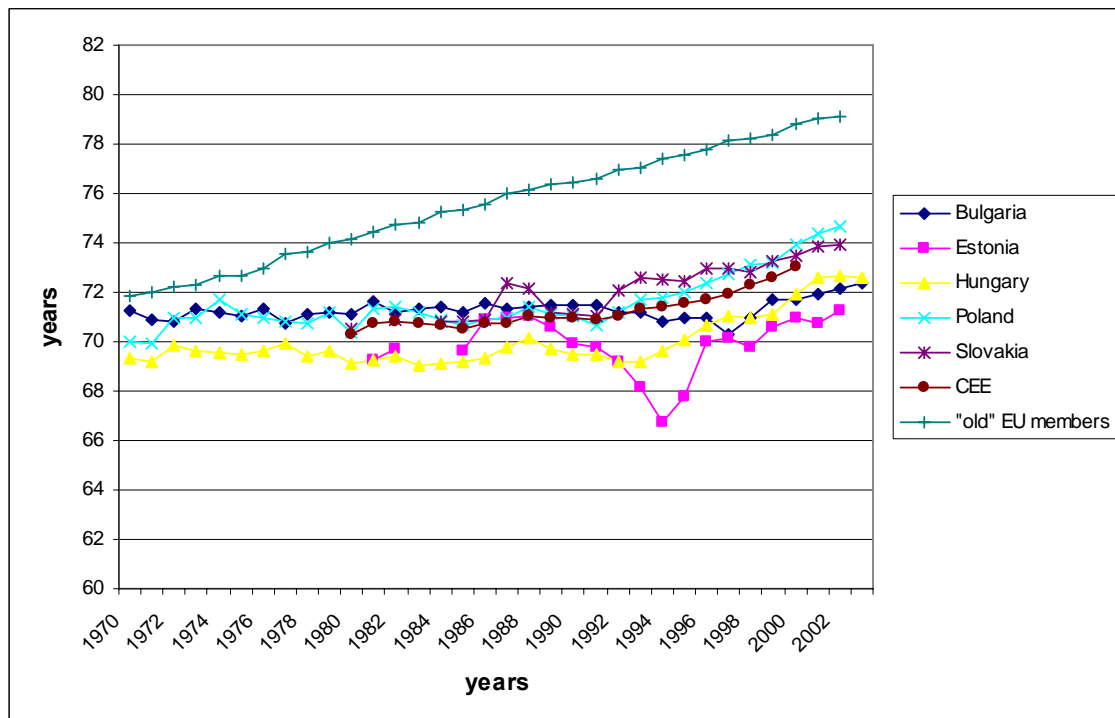
Life expectancy (LE) indicators in CEECs showed marked improvement in the 20-year period following the end of the war. Subsequently, a period of stagnation or even deterioration of LE set in, which marked a trend contradictory to Western European countries.² The period of stagnation started in the mid-1960s.³ Its principal cause was high mortality among adult men (referred to as premature mortality or excess mortality). The biggest gap with regard to the countries of the West could be observed in Hungary, where despite subsequent improvement in the late 1990s, the premature mortality rate among men remains the highest of all OECD member states (Gaal, 2004).

² In Western European countries, LE indicators demonstrated a favourable trend throughout the post-war period. Improvement was noticeable with respect to all population groups in terms of age, men as well as women. There is plenty of evidence of this improvement, particularly during the time from the beginning of the 1970s to the beginning of the 1990s. Likewise, the gap between LE values for male and female citizens was reduced (European Commission, 2003).

³ The disparity between Eastern and Western health patterns in Europe did not attract attention until rather late. Marek Okólski (2004) makes a hypothesis that mortality trend disparities have been marginalised. Even though the analyses confirming this trend disparity appeared as early as the decade of the 1970s and then the 1980s (especially Burgeois – Pichat, 1984), it was only in the 1990s that the issue received more attention.

During the decade of the 1980s, one can observe fluctuations in the trends for CEECs. In some of the countries there is a marked improvement, e.g. in the Czech Republic. In Hungary, the LE indicator decreases at the turn of the 1970s and 1980s to swiftly return to the rising trend, albeit at a slightly lower level. Similarly, there is a very brief return to the rising LE trend in Estonia in the 1980s. Notably, a trend for LE to rise in the years 1984-1987/1988 can be observed in the majority of European countries of the former USSR. It is associated with decreased mortality related to alcoholism, which in turn seems to have its roots in the phase of 'perestroika', during which an intense anti-alcoholic campaign was run and access to alcohol became more limited (Mckee & Leon, 1997).

Figure 8. Life expectancy at birth (males and females), 1970-2003



Source: WHO, Health for All Database, 2002-05.

At the end of the 1980s, the stable or rising LE trend was reversed. This trend continued until about 1994. This represents a period of health crisis in former communist countries, attributed to a marked decrease in GDP and the collapse of many public institutions (including those related to health care), alongside the stress caused by the hardships of adjusting to new requirements and uncertainty about the future. One of the international reports which was published on that subject (ICDC Unicef, 1994) pointed at the varying depth of the crisis and different rates of recovery, depending on the level of prosperity and the extent to which social tendencies were similar to those in Western countries.

In the second half of the 1990s, one can observe an upward trend as far as average life expectancy is concerned. Three groups of CEECs stood out for their improvements in LE. The first group consists of Poland and its southern neighbours: the Czech Republic and Slovakia. The next group, slightly behind, consists of Hungary, Romania and Bulgaria, and the last one is the Baltics. The latter countries experienced a particularly deep economic depression from which they have not yet recovered in terms of a favourable health trend. This is also true of

Estonia. From that standpoint, the Baltics resemble the Commonwealth of Independent States (CIS) countries. Some of those, and especially Russia, are still in the middle of a health crisis.

One can summarise the diversity found among CEECs of LE levels (in years) and development as follows:

- New EU member of Central Europe (1973-75) and Balkan countries (1971-75) – tending to increase with minor fluctuations;
- Baltics (1971-72) – major fluctuations but currently stabilising; and
- European CIS (1965-68) – major fluctuations and continuing to decrease.

Progress in life expectancy at birth is adjusted with the indicator representing healthy life expectancy, referred to as HALE (Healthy Adjusted Life Expectancy). Of all the countries included in the research, Poland has the widest gap between life expectancy at birth and healthy adjusted life expectancy. That would indicate that improvement of the ratio in Poland tends to be more widespread. Those living longer are less healthy than in other countries.

Table 2. LE at birth and HALE

Countries	LE total	LE male	LE female	LE F - M	HALE total	HALE male	HALE female	HALE F - M	LE - HALE
Bulgaria	71.9	68.5	75.4	6.9	63.4	61.0	65.8	4.8	8.5
Estonia	71.0	65.5	76.4	10.9	60.8	56.2	65.4	9.2	10.2
Hungary	73.4	69.8	77.6	7.8	62.4	59.6	65.2	5.6	11.0
Poland	71.5	67.2	75.8	8.6	59.9	55.3	64.5	9.2	11.6
Slovakia	74.0	70.2	78.4	8.2	61.8	59.3	64.3	5.0	12.2
CEE (average)	73.1	69.3	76.9	7.5	63.1	n/a	n/a	n/a	10
EU-15 (average)	78.3	75.1	81.4	6.3	70.1	n/a	n/a	n/a	8.2

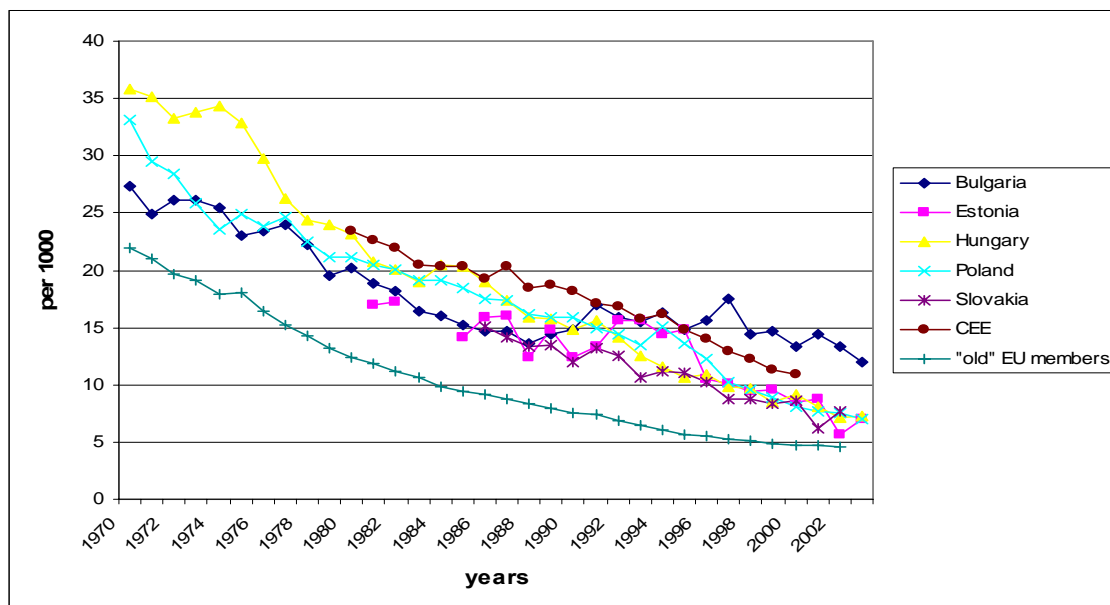
Source: WHO 2002 and AHEAD, WP II country reports.

Progress in average life expectancy at birth is related to the improvement in two indicators describing the causes behind the tendencies discussed. One of those indicators is infant mortality rate and the other one is standardised death rate.

2.2 Infant mortality rate

The overall infant mortality rate (IMR), being closely tied to the level of economic development, has been decreasing together with the increase in the level of national income per capita in CEECs as well, but progress was slower than might have been expected, considering just the factor of economic growth. It also varied across countries (Goldstein et al., 1996). The most accelerated drop in IMR could be observed directly after the war when it was faster than economic growth. Widespread provision of health care for expectant mothers and small children, public inoculations against infectious diseases targeted at small children and access to public health care brought about positive health effects, which were reflected by a falling IMR. Still, progress slowed as early as the 1960s and in the 1980s some countries (e.g. the Baltics) even saw a negative trend.

Figure 9. Infant mortality rate (IMR), deaths per 1,000 live births, 1970-2003



Source: WHO, Health for All Database, 2002-05.

In the 1990s, IMR improved in those CEECs that are now EU members and over recent years its improvement has been extremely dynamic, even more than in other Western European countries. Still, the value of IMR among new EU member states is approximately 50% higher than in the old EU countries. There are significant fluctuations of the trend in Southern European candidate countries, in particular Bulgaria and Romania. In the 1990s, the infant mortality rate in Bulgaria started to increase again from the total of 14.8 per 1,000 to 17.5 in 1997 (which is the highest level after 1983), declining afterwards to 12.3 in 2003. Higher IMR was accompanied by an increase in low birth weight (LBW) and high prevalence of hypotrophy among children under 1 year of age. According to research done by Bulgarian paediatricians, quoted in ICDC Unicef (1994), high IMR was affected by factors such as inadequate diet and widespread incidence of behaviour posing health hazards to pregnant women, e.g. smoking during pregnancy. In a Bulgarian report on the health status of the population (Rangelova, 2006), it is suggested that apart from the obvious impact of a profound and extended economic depression during transition (as the highest IMR was around 1997), the higher IMR of the 1990s was also caused by the fact that the Roma population were included in Bulgarian statistics.⁴

⁴ The Roma population represents 3.6% of the total Bulgarian population, according to the 1992 population census. *The Roma have lower income than the rest of the population, many live in miserable conditions, fertility and infant mortality rates are higher than for the other ethnic groups; life expectancy is about 10 years less than for the rest of population. With the population of the country falling, including the emigration of young Bulgarians, it is possible that the impact of the higher (and increased) infant mortality of the Roma population on the total indicator for the country will be more marked* (Rangelova, 2006).

Table 3. Infant mortality rate in CEECs, 2000

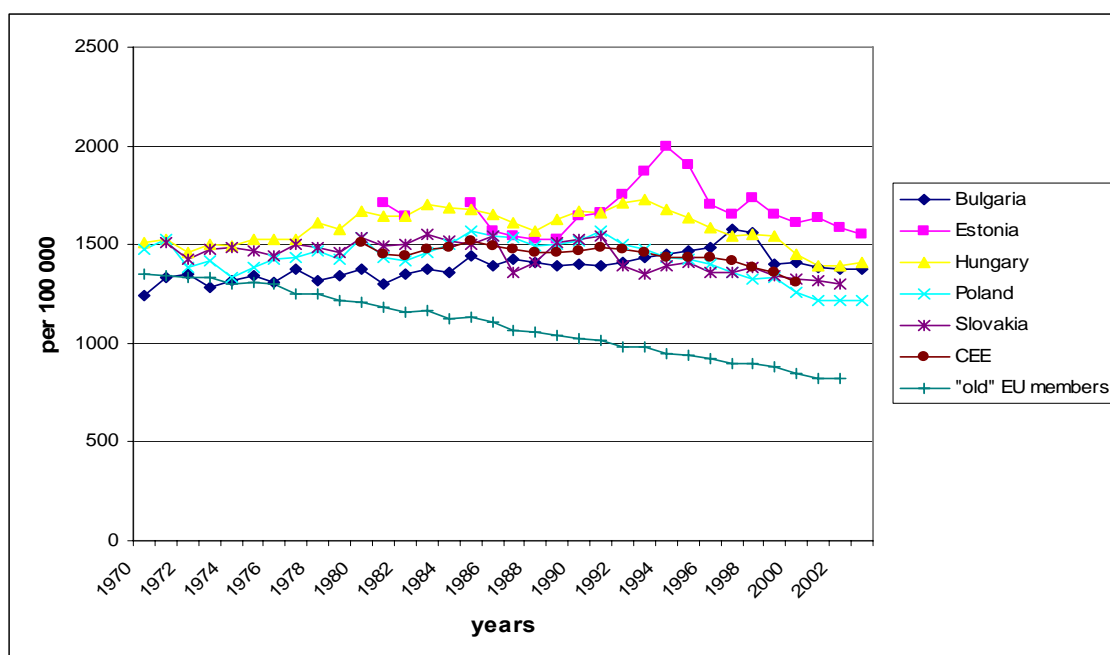
Country	IMR, boys and girls
Bulgaria	11.98
Estonia	6.98
Hungary	7.29
Poland	7.04
Slovakia	7.63
CEE (average)	10.9
EU-15 (average)	4.62

Source: WHO, Health for All Database, 2002-05.

2.3 Mortality

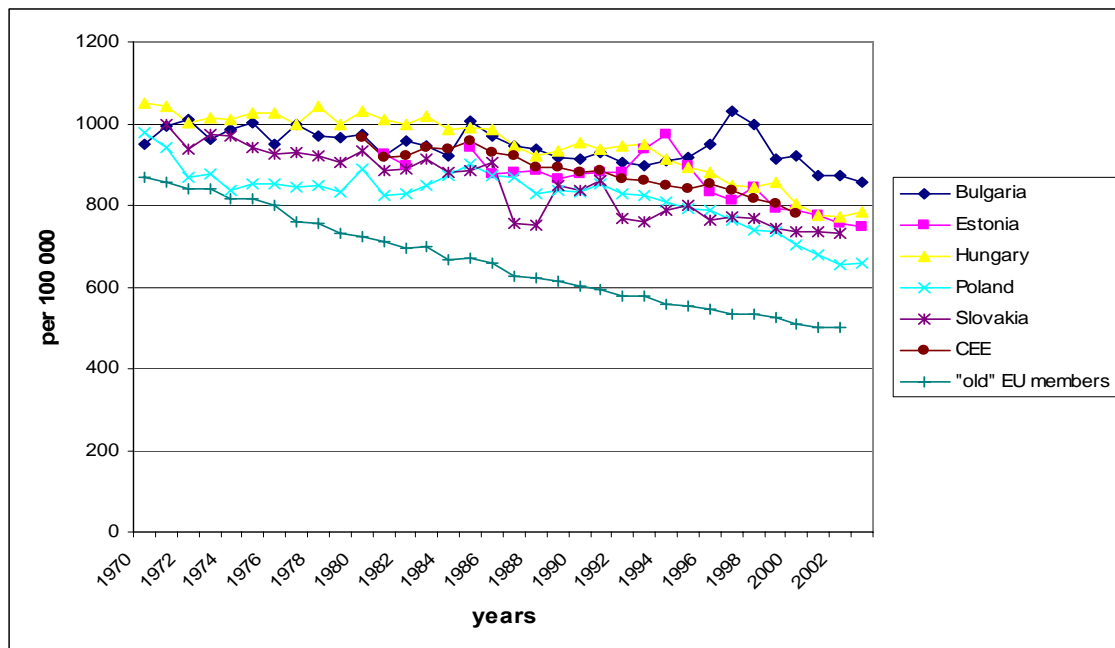
Standardised Death Rate (SDR) is yet another indicator that can be applied to explain LE trends.

Figure 10. Standardised death rate, males, 1970-2003



Source: WHO, Health for All Database, 2002-05.

Figure 11. Standardised death rate, females, 1970-2003



Source: WHO, Health for All Database, 2002-05.

As mentioned earlier, in the 1960s mortality in communist countries began to increase, contrary to Western European countries where mortality indicators continued their downward trend. A rising SDR can be observed until the mid 1980s. Premature male mortality for men under 65 years of age was the main cause of the less favourable situation in CEECs. There is no one undisputed reason for the phenomenon of premature male mortality during the communist era. Some experts emphasised poor working and living conditions in the countries of intense industrialisation without respect for environmental protection and 'socialist modernisation' (e.g. Okólski, 1988) whereas others paid more attention to lifestyle, marked by excessive alcohol consumption and smoking tobacco (Shkolnikov et al., 1996).

The second half of the 1980s saw a short-term fall in mortality, and the turn of the 1980s and 1990s brought about a quite rapid increase, which is related to the transition crisis.⁵ Recovery from the crisis in the countries included in the research is varied. Poland and its southern neighbours were less deeply affected by the crisis and consequently, in the second half of the 1990s, a decrease in the death rate substantially contributed to an increase in the LE indicator. The crisis in Hungary and the Baltic states was more severe and lasted longer, while in Bulgaria the first signs of recovery could only be observed towards the very end of the 1990s.

⁵ The evaluation of the health crisis during transition is far from unequivocal. According to some of the opinions, this crisis had started earlier, before transition, but due to insufficient information and neglect of its symptoms, it was hardly noticeable (Okólski, 2004). In Poland, for example, the standardised death rate for men aged 45-64 increased over the years 1966-1991 by about 50% (Okólski, 2004, p. 272). On the other hand, according to Andrea Cornia, ICDC Unicef (1994) report coordinator, higher mortality and lower LE are an aftermath of the crisis related to rapid GDP fall and systemic changes, and can be compared to other crisis periods in history.

Table 4. SDR table for countries under research, 2002-03

Countries	SDR all causes	SDR male	SDR female
Bulgaria	1089.51	133.64	855.20
Estonia	1066.23	1553.38	748.61
Hungary	1047.97	1410.64	784.60
Poland	895.5	1217.99	659.68
Slovakia	971.49	1302.63	729.39
CEE average	1011.67	1310.79	781.49
EU-15 average	639.20	822.12	499.19

Source: WHO, Health for All Database, 2002-05.

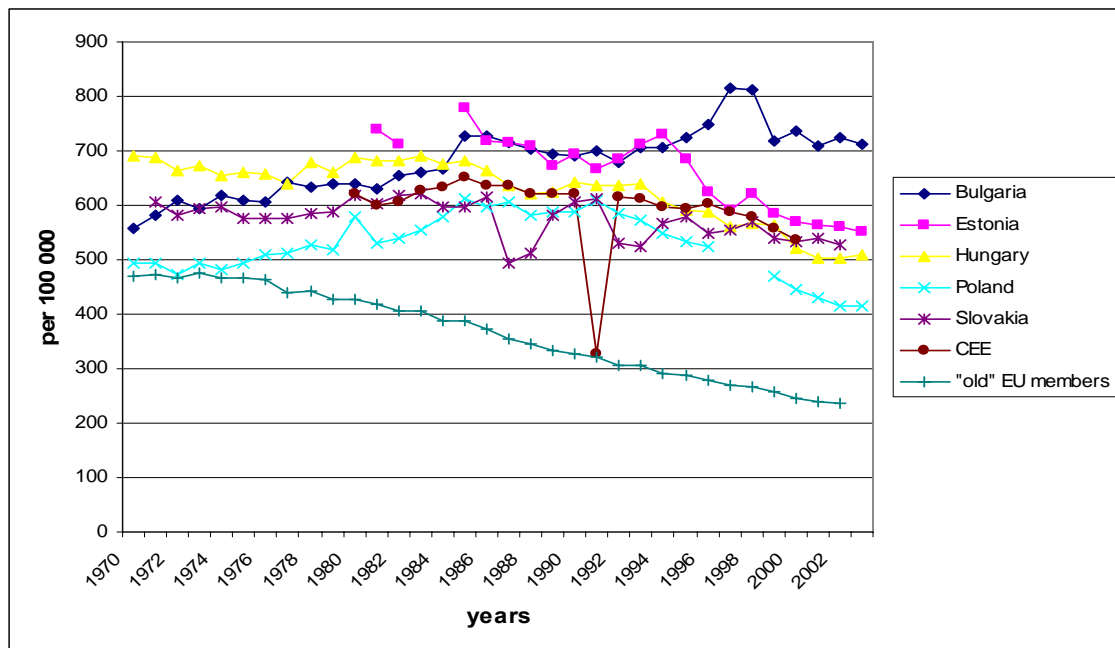
A comparative view of standardised death rates is not favourable for CEECs. Only in the case of the Czech Republic and Slovenia are the indicators lower than the average for the old EU member states. Moving inside the region of former European communist countries, only three countries being researched, namely Slovakia, Poland and Lithuania, have lower rates than the average for the whole CEE group (WHO, 2002).

According to the analysis of the causes of mortality in CEECs, a decrease in mortality caused by circulatory diseases, which account for more than 50% of deaths, turns out to be the main reason behind the improvement in mortality. In EU15 countries, the share of those diseases is substantially lower and amounts to approximately 40%.

Poland has been the most successful case of a decreased death rate caused by circulatory diseases in the 1990s, although mortality indicators per 100,000 inhabitants in Poland are still almost twice as high as the average for the EU15 member states.⁶ In Poland, this rate equals 545 for men and 346 for women, whereas in the EU it is 298 and 192 respectively. Some experts in the field warn, however, that statistics in that area are incomplete, as they do not take into account the so-called 'sudden deaths' whose cause has not been identified due to the fact that autopsies are performed rather infrequently under these circumstances (Drygas, 2005) and sudden deaths may be related to circulatory diseases. Nevertheless, the trend remains the same, although the rates including causes of sudden deaths (this rate is extremely high in Poland) would be slightly worse (by 6%-8%).

⁶ Whereas in Russia they are twice as high as Polish indicators. Overall, in the post-communist countries, discrepancies between countries are as large as between these countries and the EU15.

Figure 12. Standardised death rate caused by circulatory system diseases, 1970-2002



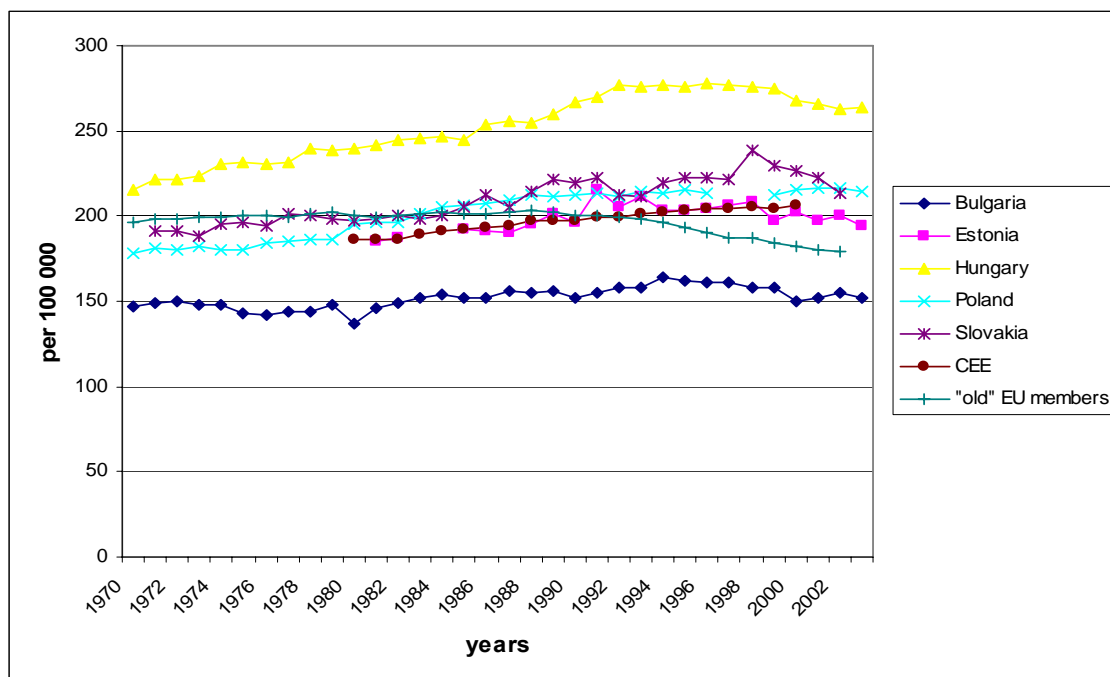
Source: WHO, Health for All Database, 2002-05.

Reports describing the health situation in the 1990s in former communist countries, which analyse both the causes of increased mortality related to circulatory diseases at the beginning of the 1990s and its drop in the second half of the decade and the beginning of the next one, point to the significance of various factors, although the composition of the list remains the same. On the one hand, the authors emphasise the importance of diet, lifestyle and environmental issues. Diseases related to drinking alcohol and smoking tobacco are presented as major causes of premature mortality among men in Russia and other Eastern European countries. Consequently, the circumstances which are conducive to drinking and smoking (for example, cigarette advertising during the first phase of transition – Staines, 1999), as well as promotional and preventive activities (undertaken on a greater scale only in the second half of the 1990s), were the ones most frequently put on top of the list. On the other hand, clinical circles pay more attention to progress in diagnostic techniques, access to new medical technologies (with respect to circulatory diseases – cardiology intervention and cardiac surgery) and drugs (increased consumption of statins), as well as the launch of programmes targeted at improving medical rescue systems in emergencies and the development of rehabilitation programmes. A decrease in the circulatory disease death rate in Poland is to a large extent attributed to medical factors (Drygas, 2005).

In terms of scale, neoplastic diseases represent the second-most serious cause of death. In Western European countries they are responsible for 30% of deaths, and in CEECs their share is relatively lower – about 20%. However, in the old EU member states, death rates related to neoplastic diseases is already falling, whereas in the new countries it has barely begun. In EU15, there is significant progress in premature death indicators, below the age of 65, although the share of diseases resulting from neoplasms is on the rise (European Commission, 2003).

Cancer-related mortality trends in the countries being analysed are quite varied (see Figure 13). Hungarian rates are higher than the CEE average, and Bulgaria's are lower. Whether or not there has been an improvement overall is rather unclear. In fact, up until the end of the decade, mortality rates related to neoplastic diseases kept growing.

Figure 13. Standardised death rate caused by cancer, 1970-2002



Source: WHO, Health for All Database, 2002-05.

Mortality rates for males are higher than for females in all the countries subject to analysis, and there has been a clear upward growth trend until the end of the decade. There was a marked decrease in the rate at the turn of the decade in Slovakia (and earlier in the Czech Republic).

Among afflicted men, lung cancer is a typical neoplasm, and among women breast cancer and cervical carcinoma are the most prevalent. In the EU15 countries, breast cancer is most frequent, whereas in the CEECs, cervical carcinoma takes the lead. It is estimated that the peak of cancer-related deaths among men was at the end of the 1990s, but breast cancer and cervical carcinoma still account for a high level of deaths among women and the situation is quite alarming.

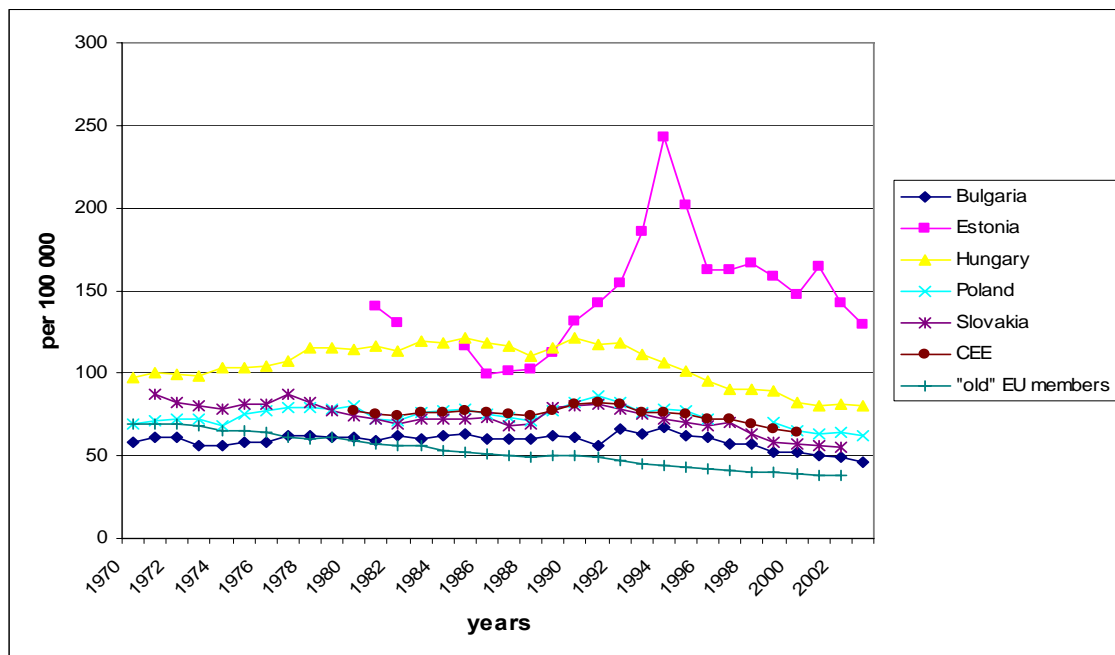
On the basis of the worldwide estimates of WHO experts, about 25% of neoplastic disease morbidity can be avoided by virtue of adequate steps in the field of health promotion and prevention, and thanks to contemporary medical knowledge, approximately 1/3 of neoplastic disease cases can be successfully treated. In the next twenty five years this rate could go up to 50% (WHO, 2002, p. 37). The earlier it is detected, the greater the chance of recovery; thus screening plays a major role in fighting cancer. Screening is expensive. However, neoplastic diseases represent such a major cost, as measured in DALY units (about 12% of the total cost of all diseases – WHO, 2002, p. 19), that the alternative of screening tests in precisely defined risk groups can decrease that cost to a significant extent.

The third group of most common causes of mortality relates to accidental injuries, murders, poisonings and suicides. Together, these are referred to as external causes not related to the health status of the individual. There are substantial discrepancies across the countries included in the research with regard to the extent of this phenomenon, but in all the countries one can observe a falling trend in the second half of the 1990s. Poland, Slovakia (along with the Czech Republic) and Bulgaria exhibit similar indicators, which are approximately 50% higher than the Western European level. In Hungary the rate is 100% higher, and in Estonia (along with the other Baltic States) it is four times higher. The level of externally caused mortality in CEECs is

much higher especially with regard to transport accidents, suicides and self-mutilation. The gap between the male rate in Eastern and Western Europe is also greater than in the case of women.

In Estonia, external causes represent a basic cause of mortality among men aged 15-44. Suicides, transport accidents, environmental factors (cold), alcohol poisonings and assault are the most common external causes of mortality in Estonia (Roovali, 2005). According to the reports describing high externally caused mortality in the Baltics, transport accidents represent a significant contribution, and particularly motor vehicle traffic accidents. In 1998, their rate was more than twice as high as in the EU15 countries. For example, in Latvia the SDR for that cause of death was equivalent to 28, whereas in the EU countries it was 10.7 (MacLehose, 2002).

Figure 14. Standardised death rate (SDR) caused by external factors (injury and poisoning), 1970-2002



Source: WHO, Health for All Database, 2002-05.

The table below presents composite data on the Standardised Death Rate broken down according to major causes. It illustrates the high death rate in the countries being researched compared to the EU15. Despite a growing improvement, which began towards the end of the 1990s, given the current rate of SDR decrease, it might take from over 10 to 30-40 years for the gap to be bridged (Wojtyniak & Goryński 2003).

Table 5. Standardised death rate (SDR) due to main causes

Country	CDV total	CDV male	CDV female	Cancer total	Cancer male	Cancer female	External total	External male	External female
Bulgaria	713.01	867.99	586.99	152.48	202.29	112.57	46.25	73.50	21.19
Estonia	551.84	753.83	427.17	194.46	296.70	138.11	129.27	228.65	49.41
Hungary	508.3	647.54	409.53	263.81	370.77	191.38	80.02	121.44	44.42
Poland	416.65	535.86	330.93	514.73	301.10	157.68	62.44	101.71	26.51
Slovakia	527.71	660.14	432.13	213.32	309.31	148.26	55.44	95.05	20.42
CEECs (average)	537.54	653.34	449.00	206.22	284.30	151.17	63.82	101.45	29.65
EU15 (average)	235.74	293.96	190.47	179.58	240.41	136.22	38.07	55.59	21.78

Source: WHO, Health for All Database, 2002-05.

When we begin to analyse mortality rates according to main causes across age groups, the picture looks somewhat different. The table below demonstrates that in lower age groups external causes of death are dominant, while in the older groups it is the ischaemic heart disease. Moreover, one can see that, with regard to women above 30 years of age, the main causes differ between Western and Eastern European countries. In the CEECs, so-called ‘civilisation diseases’ such as ischaemic heart disease and digestive system diseases are still predominant, whereas in Western Europe breast cancer dominates.

Table 6. Main causes of deaths by age and sex in accession and candidate countries (13), 1999

Age in years	Male	Female
5-9	Traffic accidents	Traffic accidents
10-14	Traffic accidents	Traffic accidents
15-19	Traffic accidents	Traffic accidents
20-24	Traffic accidents	Traffic accidents
25-29	Traffic accidents	Traffic accidents
30-34	Traffic accidents	Traffic accidents (Suicides)
35-39	Suicides	Digestive system diseases (Breast carcinoma)
40-44	Digestive system diseases (Ischaemic heart disease)	Digestive system diseases (Breast carcinoma)
45-49	Ischaemic heart disease	Breast carcinoma
50-54	Ischaemic heart disease	Ischaemic heart disease (Breast carcinoma)
55-59	Ischaemic heart disease	Ischaemic heart disease (Breast carcinoma)
60-64	Ischaemic heart disease	Ischaemic heart disease (Breast carcinoma)
65-69	Ischaemic heart disease	Ischaemic heart disease
70-74	Ischaemic heart disease	Ischaemic heart disease

Source: WHO (2002).

2.4 Morbidity

At the outset of morbidity analysis, it must be noted that indicators from this field are not of the same quality as mortality indicators. The latter are more credible although some reports claim that in former communist countries mortality indicators cannot be trusted either. Nevertheless, in the group of the five CEECs included in the analysis, there has been a marked improvement in record-keeping and reporting, as those countries have become involved in international morbidity registers (concerning infectious and neoplastic diseases) and in programmes aimed at combating those diseases.

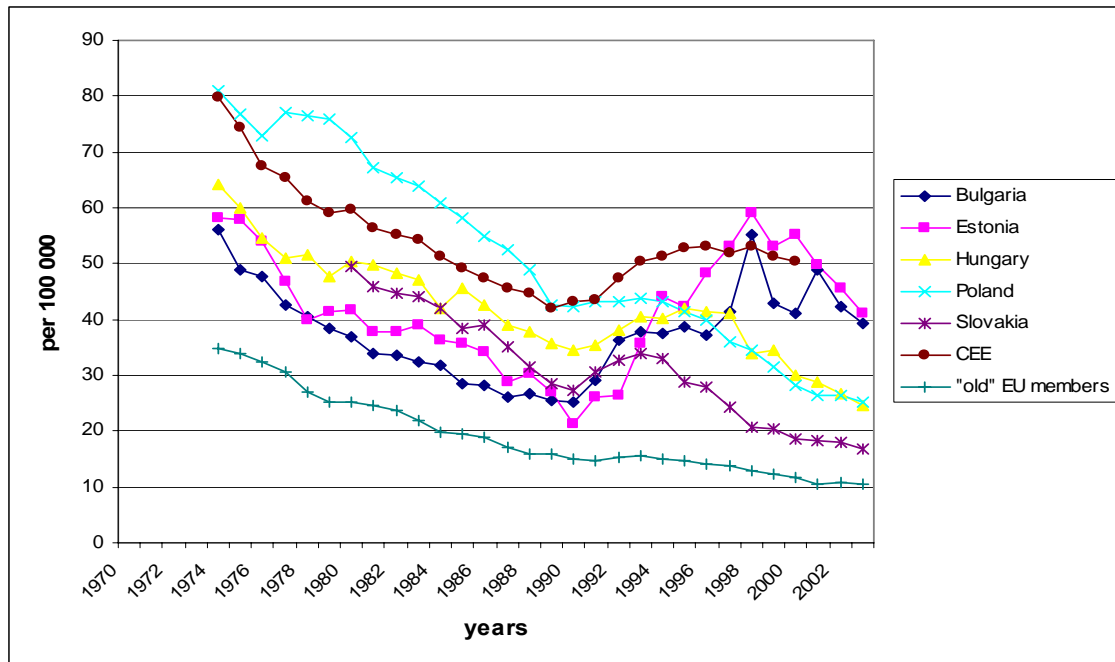
During the post-war period, communist countries have been quite successful in fighting infectious diseases. However, as soon as civilisational diseases, related to lifestyle and environmental conditions, became an issue, both health care systems and overall state policy turned out to be rather ineffective in combating those diseases, and insufficiently funded health care sectors showed themselves to be low on capacity. An increase in morbidity and premature mortality due to infectious diseases (NCD), especially among men, at the beginning seemed to be a statistical artefact (McKee & Leon 1997), but more intensive research corroborated the presence of the phenomenon and provided an explanation for some of its causes.

At present, a review of morbidity trends in CEECs shows that the trends are slowly entering the phase of an epidemiological transition which, on the one hand, displays decreased mortality due to basic non-infectious civilisation-related diseases, such as circulatory and neoplastic diseases, and on the other hand increased morbidity due to other civilisation-related diseases, first and foremost mental diseases, then allergies, diabetes and chronic diseases connected with older age, e.g. osteo-muscular and digestive system diseases.

Despite a clear tendency towards another phase of epidemiological transition, the scale of infectious diseases in CEECs is typical of poor societies, e.g. tuberculosis, is still quite high. At the same time, these countries are more affected by new communicable diseases, most notably HIV/AIDS.

Of the five countries under analysis, the incidence of tuberculosis is most noticeable in the poorer states: Estonia and Bulgaria (see the figure below).

Figure 15. Incidence of tuberculosis, 1970-2003



Source: WHO, Health for All Database, 2005.

Estonia is an exceptional country in the CEE region with regard to its incidence of HIV/AIDS. The HIV rate in this country is estimated at 1% (UNDP, 2004), which is the highest rate in the newly expanded Europe. In that regard, Estonia exhibits the same morbidity profiles as Russia. High HIV/AIDS morbidity in the region of the CIS represents a significant risk in terms of spreading disease, above all to the neighbouring countries.

CEECs included in the research are facing an issue of growing mental disease morbidity. On the one hand, mental diseases result from the still significant scale of incidence of alcohol disease and the increasing wave of drug abuse. On the other hand, the incidence of depression is on the rise, which appears to be a new phenomenon in the region, although the increased number of recorded cases of depression is an indication of both greater access to mental health clinics and greater awareness with regard to therapeutic needs and possibilities, and not just increased incidence of the disease. Nevertheless, in the context of growing stress related to the transition, competitive pressure, uncertainty, unemployment and poverty, mental disorders represent an ever-increasing problem, as do suicides. This problem is more widespread among men than women.

CEECs are going through a dynamic process of population ageing. The population is also seriously affected by chronic diseases and disability. The phenomenon of disability is rather difficult to present via international comparisons owing to different criteria adopted in medical and legal definitions of the problem across the countries. Using the criterion of self-assessment (the so-called 'biological definition'), it can be said that disability above the age of 45 is more frequent in CEECs than in the EU15. In the past, occupational injuries and diseases used to be a significant cause of disability. At present, given vast industry restructuring and demilitarisation, side by side with substantial de-industrialisation, industrial injury indicators have fallen considerably. That is not to say, however, that disability related to such causes is no longer

present in the statistics. The disability rate is particularly high in Poland, where it also tends to affect the farming population significantly (Golinowska & Piętka, 2002; ILO, 2003).⁷

The incidence of diseases, especially chronic ones, substantially worsens the quality of life of the population. The HALE (health adjusted life expectancy) rate, which measures the average healthy life span, is about eight years lower in the CEECs than in the EU15 (cf. Table 2), whereas the LE gap has gone down to less than 5 years. This implies a greater burden on health care, which in turn, given low levels of funding in the health care sector, means that the expenditure not directly related to treatment, such as for example public health expenditure, is ‘pushed out’ of the pool of public funds.

2.5 Self-Assessed Health Status in Selected CEECs

Subjective assessment of a population’s health is a complementary measure to an objective description, based on mortality and recorded morbidity (Mossey & Shapiro, 1982). Health status self-assessment can be performed thanks to survey research, with the question: “In your opinion, how is your health?”. Replies are given on a 5-level scale: it can be “very good, good, fair, poor or very poor”. Research has shown that this reply format is a correct reflection of actual health status: it is largely correlated with both medical assessment of one’s health and with the likelihood of death (Mossey & Shapiro, 1982). Even though it is important for the description of the health situation of the population, this subjective measure has its limitations, particularly when it comes to international comparisons. The discrepancy in health status self-assessment between countries is mostly contingent upon external factors, such as the economic situation of the country at the time of research, culture and tradition of the society, a tendency to complain or to be optimistic. Thus, in many cases even geographically or culturally related countries may show different results of self-assessment analysis. Health status self-assessment research is extremely important with regard to the description of health inequalities, since they allow for the specification of demographic, social and economic features pertaining to people with poorer health, who represent a higher risk of morbidity or even death.

This analysis is based on nationally representative sample surveys evaluating the health status, health behaviours and living standards of the population (see information about the research sources in introduction). The survey results have shown significant differentiation in self-assessed health statuses between the countries. The most pessimistic assessment of health status can be observed in Bulgaria while the inhabitants of Slovakia are the most satisfied with their health (see table below). In other countries under analysis, the self-assessment is not that markedly different. In these countries health status is more frequently assessed as ‘fair’ and ‘good’ – in Estonia half of the sample evaluates its health status as ‘fair’, while in Hungary and Poland more people evaluate their health status as ‘good’ (close to 70% of the sample indicates ‘fair’ or ‘good’ health status). The unfavourable self-assessed health status in Bulgaria has been attributed to the economic situation of the country at the time of the research (Rangelova, 2006). In 1997, Bulgaria experienced an economic crisis with a rapid increase in inflation, an actual decrease in income, an 8% drop in employment and a 7% fall in GDP (UNDP, 2005). The rapid deterioration of the living standards of the population might have been the reason for the increased pessimism and unfavourable assessment of the situation, including health aspects. In

⁷ The issue of disability in Poland tends to receive more attention in terms of the burden of disability benefits on public finance than as a problem that requires more effort on the prevention side. To a large extent, this phenomenon concerns the farming population, whose working conditions in traditional farmsteads with neglected infrastructure and equipment, side by side with the lack of approved work hygiene and safety regulations, can pose a significant health hazard.

Poland, improvement in the self-assessed health status can be seen between 1999 and 2003. This could be attributed to changes in the population structure (significant increase of young human resources – children from the baby boom after the Second World War).

Table 6. Health status self-assessment

Country	Year	Very poor	Poor	Fair	Good	Very good
Bulgaria	1997	9.5	19.2	39.7	27.8	3.8
Estonia	1999	2.4	14.3	51.0	27.6	4.7
Hungary	2003	3.6	14.6	36.8	34.9	10.1
Poland	1996	4.1	17.6	34.2	35.2	8.4
	1998	1.7	11.8	24.6	42.7	19.3
	1999	1.8	11.2	25.2	43.2	18.6
	2003	1.7	9.9	24.0	38.9	24.2
Slovakia	2002	3.8	7.0	21.6	32.6	35.0

Source: AHEAD, WPII country reports.

Discrepancies in the self-assessed health status between countries become greater when demographic, social and economic factors are taken into consideration. These factors include age, sex, place of residence, marital status, household size, education, labour market activity and income. Correlation between the variables that describe the population in terms of its demographic, social and income characteristics versus health status can be defined by means of the model of econometric analysis (logit analysis), which specifies the likelihood of a negative health status self-assessment in relation to the presence of the variables mentioned above. Due to certain differences in the tool applied (statistical office surveys describing health status), not all economic and social factors could be included in particular countries, and that is why the model is not equally complete with regard to each and every country being researched. The broadest range of variables were used in the case of Poland and Estonia.

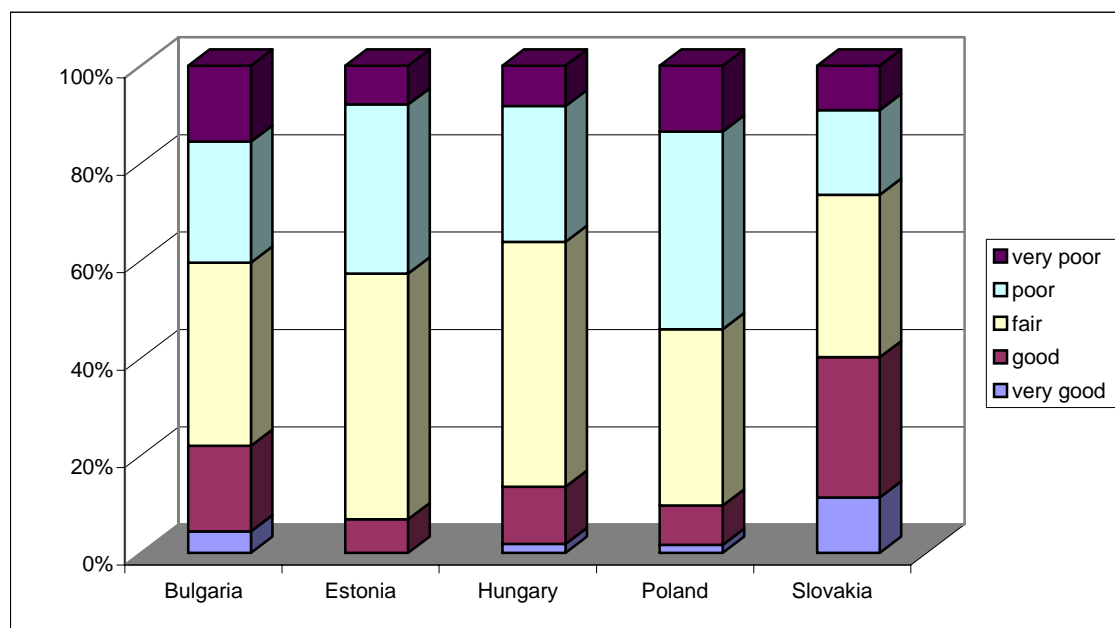
Table 7. Variables used in econometric models, by country

Variables:	Bulgaria	Estonia	Hungary	Poland	Slovakia
Sex	+	+	+	+	+
Age	+	+	+	+	+
Education	-	+	+	+	+
Marital status	+	+	-	+	+
Income (categories)	-	+	+	+	-
Place of residence	-	+	-	+	+
Household size (number of persons)	-	+	-	+	-
Labour market activity	-	+	+	+	+
Having disabilities	-	+	-	-	-
Health status self assessment	+	+	+	+	+

Source: Own compilation based on AHEAD WPII country reports.

Age is an especially important factor as far as health status self-assessment is concerned. The elderly more frequently describe their health status as 'poor' or 'very poor'. This, however, does not indicate severe illness or disability, but is a predictor of the prevalence of poor health. The tendency can be observed in all the countries. It is related to the incidence of cumbersome chronic diseases, such as osteo-muscular diseases and diabetes, which have an adverse impact on the quality of life, as well as the prevalence of neoplastic and cardiovascular diseases. Among the population over 65, the latter category of diseases represents the most frequent cause of death. Among the elderly, Polish people have the most negative assessment of their health status – more than half of the sample evaluates their health status as 'poor' or 'very poor' (Figure 17). Interestingly enough, such low self-assessment is correlated with a clearly lower HALE rate for Poland. In Bulgaria, Estonia and Hungary, that rate is about 40%. The highest self-assessed health status can be observed among the elderly in Slovakia – only 25% says that their health is 'poor' or 'very poor', and almost 40% state that they are in good health. To a certain extent, this outcome might be a consequence of the different structure of the population sample: in Slovak research, people over 61 years of age are defined as the elderly, whereas all other analyses refer to the population older than that (above 65).

Figure 16. Structure of health status self assessment by elderly (65+, 61+ in Slovakia)



Source: Own calculations based on AHEAD country reports.

The analysis has shown that in former communist countries with a poorer population health status, health status deteriorates with age at a faster pace than in developed countries (Szaflarski & Cubbins, 2004).

Positive health status self-assessment is also closely related to education, employment and income. The likelihood of a good health status increases with the level of educational attainment. By the same token, increased income is correlated with health status in a positive way. The type of employment, or lack of it, is another important factor. The direction is obvious: higher income, better education and professional activity increases the likelihood of a better health status. According to the analysis of the correlation between employment and health status in CEECs, another key factor is the type of work and how closely levels of compensation match the effort made at work (Pikhart et al., 2001). Lack of professional activity increases the

probability of poor health status. Inactivity often indicates inability to work due to disability or reaching retirement age.

Results of analysis for the five countries indicate that poorer health status is related to sex as women tend to evaluate their health status as worse than males do. This holds for most of the countries under analysis and is contrary to mortality and longevity trends, where females have lower mortality and live longer. In Eastern countries, the difference between male and female longevity is still large although the gap is closing.

The hypothesis of a correlation between being single and poor health status assessment is confirmed only in Poland and Slovakia. In Poland, inhabitants of bigger households give a better evaluation of their health status. The correlation between being in good health and living in a bigger household is also confirmed in Estonia.

In rural countries, i.e. Poland, living in rural areas is a significant factor explaining poorer health status. Rural populations are poorer than urban ones, so health behaviour is different. The health status of rural populations in Poland is poor due to deficiencies in health care,⁸ alcohol abuse and disabilities often caused by accidents at work.

Comparison 1. Results of econometric analysis of health status correlates

	Health status self assessment				
	<i>Bulgaria</i>	<i>Estonia</i>	<i>Hungary</i>	<i>Poland</i>	<i>Slovakia</i>
Sex	<i>Hypothesis: women are less likely to have a good health status</i>				
	Not significant	Not significant	Confirmed	Confirmed	Not significant
Age	<i>Hypothesis: probability of good health status decreases with age</i>				
	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Place of living	<i>Hypothesis: probability of good health status lower for rural population</i>				
	N/a	Not significant	N/a	Confirmed	Not significant
Marital status	<i>Hypothesis: single people are less likely to be in poor health</i>				
	Not confirmed	Not significant	N/a	Confirmed	Confirmed
Number of persons in household	<i>Hypothesis: probability of being in good health is higher for bigger households</i>				
	N/a	Confirmed	N/a	Confirmed	N/a
Education level	<i>Hypothesis: persons with higher education levels are more likely in good health</i>				
	N/a	Confirmed	Confirmed	Confirmed	Confirmed
Labour market activity	<i>Hypothesis: the inactive are more likely to be in poor health</i>				
	N/a	Confirmed	Confirmed	Confirmed	Confirmed
Income in categories	<i>Hypothesis: probability of being in good health increases with income</i>				
	N/a	Confirmed	Confirmed	Confirmed	N/a

Source: Own comparison based on AHEAD country reports.

⁸ Polish farmers were covered by national health insurance in the 1970s. In the first period, access to medical consultations was payable; thus farmers tended to use medical services only when it was a necessity. This behaviour has continued.

2.6 Comparison of Health Status: Conclusions

The analysed countries (Bulgaria, Estonia, Hungary, Poland and Slovakia) reflect varying levels of health status in the region. Even though developmental tendencies at the end of the 1990s follow the same course, as improvements in the majority of health status indicators can be seen, significant discrepancies between the countries remain a fact. In extreme cases, those discrepancies are as big as or even bigger than between the old EU member states and the average CEEC rates.

With regard to life expectancy (LE), it can be stated that Central European countries, represented in this study by Poland and Slovakia, are clearly getting closer to Western European levels. Today the LE rate is lower by only four years. Progress is predominantly brought about by a decrease in mortality indicators: the infant mortality rate and the death rate related to circulatory diseases and external causes. Yet, the improvement is quite extensive in nature. The gap between the HALE indicator and the LE rate in Poland and Slovakia amounts to about 12 years, whereas in the EU it comes to eight years.

In the group of countries included in the research, there are some with poorer health indicators. A special case in point is Hungary, where the material aspect of living standards is relatively advanced (higher than in Poland) and expenditure on health care is also relatively higher, yet Hungarian health indicators lag behind those recorded by their northern neighbours from the CEEC region. The underlying reasons remain unclear. Factors related to lifestyle and health-damaging behaviour come under the spotlight: drinking alcohol, smoking, unhealthy diets and social discrepancies related to much poorer indicators among the Roma community. The latter are not entirely convincing, though, as Hungarian neighbours present similar hazardous behaviour and have a significant share of the Roma population, e.g. in Slovakia. Poor health indicators in Hungary might hypothetically be interpreted as a result of earlier demographic changes (ageing and entering the second phase of demographic transition as early as towards the end of the 1950s), which took place in the context of intensive industrialisation under the communist era and low expenditure on health care.⁹

Surprisingly poor health indicators can be observed in Estonia, a country which has had a successful transition experience in terms of the implementation of the market economy, favourable institutional changes and improved standards of living. The mortality and morbidity profile in Estonia is an extreme case among the Baltics. It is more similar to the group of CIS countries, Russia in particular, than to Central European countries. In Estonia, the transition is still accompanied by a health-damaging lifestyle: tobacco and alcohol abuse, poor diets, growing drug abuse, hazardous sexual behaviour and fast driving. Health promotion is a challenge Estonia has to face, not only as part of its health care system but also as a major value of society.

Bulgaria represents the southern region of Central and Eastern European countries and, as such, exhibits health indicators typical of that group of countries; in some cases Bulgarian indicators are better. Still, when compared to Central European countries, they are worse. Statistically, a high infant mortality rate and a leap in the female mortality rate in the 1990s, which remains high, are the most conspicuous problems. To explain these factors, more detailed analysis would be required.

The analysis of health status self-assessment matches the comparative analysis carried out on the basis of objective epidemiological data. Thus, health status self-assessment is a close

⁹ Such a line of argument was suggested by the late Rudolf Andorka, a renowned Hungarian demographer and economist, who died at the end of 1990.

approximation of the actual health status of the population (Mossey & Shapiro, 1982), although this correlation would be difficult to prove with the analysis of individual indicators. For the sake of such a comparison, an index-type indicator would be useful to describe the objective health status of the population. Under such circumstances, its ranked values could be compared to various levels of self-assessment.

The results of subjective research have shown that Slovak people assess their health status in the most positive way. In the course of the last decade, there has been considerable improvement in self-assessed health status in Poland. Both countries are leaders in terms of objective improvement in epidemiological indicators, as has been illustrated in all the figures included in the study.

In all Central and Eastern European countries included in the analysis, there has been a correlation between self-assessed health status and the factors pertaining to demography (gender, age) and socio-economics (education, professional activity status and income). Particular emphasis must be put on the strong correlation between the lowest self-assessed health status on the one hand, and age and absence of professional activity on the other. In view of the rapid ageing process in the society and the presence of disability on a considerable scale, especially in Poland, there will need to be significant improvement in the epidemiological status of the elderly for there to be an improvement in the self-assessed health status.

For several years now, there has been an improving trend in epidemiological indicators in Central and Eastern European countries. One must not forget that this is just the beginning of a positive trend, although the gap between CEECs and Western Europe is still significant. In post-communist countries, where populations have a poorer health status, this status rapidly worsens with age. As a result, CEECs are entering a phase of increased incidence of neoplastic, mental and chronic diseases. The burden of those diseases is particularly large in terms of the overall cost of diseases (WHO, 2002). As a result, the current rate of demographic changes and the overlap of subsequent phases of epidemiological transition are a serious challenge in sustainable development, both from the economic standpoint and from the viewpoint of increased quality of life.

3. Health care system

In communist countries, the health care system was an integral part of the centrally planned state economic system. It was put under the category of socio-cultural facilities (later referred to as social services). Decisions concerning investments, resource allocation and health policy priorities were contained within the framework of five-year plans while decisions concerning current functioning and financial issues came within the framework of annual material and budgeting plans. Failure to meet targets in the field of social services was a feature of the central planning system. After each five-year period, it emerged that investment and productivity indicators in the industry and construction business had been exceeded while at the same time targets set for education, health care and culture had not been met. Due to the economic ineffectiveness of the system, more and more resources were allocated to the manufacturing sector in order to achieve the desired effect. In consequence, fewer and fewer resources were channelled to the areas defined as non-productive – including, among other things, the area of health care. Extreme disparities between the so-called productive and non-productive sectors were particularly conspicuous in Poland. Financing of some social services, first and foremost health care, was ‘shifted’ to the private sector, which had been allowed to continue in Poland due to the needs of the population living off private farming, as that part of the population had no access to the so-called ‘social’ health care until the end of the 1980s. It must also be added that as far as political decisions were concerned, financial benefits always received priority over social services (Golinowska, 1990).

The health care organisational system, referred to as the Siemaszko model¹⁰, was quite similar in all the countries in terms of structural approach, albeit not totally homogenous. There were discrepancies in the level of systemic integration. In many countries primary health care was totally merged with specialised care (the concept of ‘poly-clinics’) and referral to in-patient care was subject to a decision by a physician from the clinic. In other countries, one could access in-patient care through a decision made by a physician from outside the clinic system, for instance in Poland it could have been a doctor from the so-called ‘medical cooperative’ (in fact, it was a system of private practices) or from the system of industrial health care. The latter was better developed and better equipped than the generally available sector of health care. Over time, industrial health care (selected branches of industry) has also developed its own hospital care, as well as rehabilitation centres and sanatoria. Furthermore, such closed sub-systems of health care were established not only by particular industries, but also by some service branches, e.g. railways, the military, the police and central administration.

One could get access to the hospital of choice, other than through geographical jurisdiction, by a ‘connection’ with the ward head or by an illegal payment. This kind of corruption in the medical environment had been present before and it still continues, although its scale in the past used to be adjusted to the modest means of the patients as well as the much lower consumer aspirations of the medical personnel.

Another point of difference in the health care sector regards the role of regional and local administration. It was two fold – on the one hand, general, on the other, industry-related. Particular public service sectors had their own, separate local and regional administration systems. The same was true of health care. In some of the countries, the sector structure dominated over the geographical structure of general administration, whereas in others it was subordinate to general regional administration (Mihalyi, 2004).

By and large, the health care system was regarded as accessible and quite acceptable from a medical point of view. Still, a lack of sufficient funding and growing corruption were becoming more and more visible, and medical circles demanded reform. Work towards the effort to bring about change started as early as the 1980s, especially in Hungary (Gaal, 2004) and in Poland (Włodarczyk, 1998).

During the transition, reforms were prepared in all CEECs. They all went in a similar direction but were implemented with varying emphasis and over different time spans. The reforms can be summarised under four target headings:

- separation of the health sector from the integrated system of budget planning;
- more autonomy for the health sector at the regional level and more autonomy for health care units within the public system;
- privatisation of isolated segments of health care; and
- introduction of financing mechanisms that provide medical personnel with at least the same level of compensation as the average in the national economy.

¹⁰ Named after the Russian physician and politician (1874-1949) who designed a vision of health care operations within the framework of a centrally planned system (provision of universal, free-of-charge and quality service).

3.1 Health Insurance and Other Sources of Health Care Financing

All CEECs, including those analysed in this study, implemented the first course of action. Namely, they introduced health insurance with an earmarked fund established from pay roll tax, instead of integrated budgetary funding financed from general taxation. Health insurance was introduced gradually. In Hungary in 1990, a social insurance fund, including health care, was separated from budgetary funding, and then (in 1992) a health insurance fund was further isolated from the social insurance fund.¹¹ Over the same period of time, the Baltics designed a health insurance approach within the framework of reforms prepared for the new independent states (1991). In Slovakia, health insurance was introduced in 1994, and in Bulgaria and Poland only at the end of the 1990s.

According to the findings of health care financing analyses, in their early years health insurance systems brought about relative growth in health care financing. It is estimated that the share of expenditure on health care as a percentage of GDP went up by 1-2 points in the case of those countries that implemented health insurance at the beginning of the 1990s (Goldstein et al., 1996). At the same time, it must be remembered that the increase in the share of expenditure took place during the period of transition crisis, when GDP was falling by as much as 20%. What that means, in fact, is that the actual expenditure fell, especially with reference to public spending.

As a consequence of health insurance implementation, access to health care services was restricted to the insured (employed and entitled to financial social benefits replacing labour income – and their families). Thus, contrary to the situation in the past, not all residents of a given country could access health care services free of charge. Health insurance systems did not include, first and foremost, the categories permanently outside the labour market, which sometimes referred to the Roma ethnic minority, for example in Bulgaria (Koulaksazov et al., 2003), among whom permanent employment was rather uncommon. Residents who had problems entering the labour market, such as graduates, also found it hard to obtain health insurance. Youth unemployment is a very serious social issue in transition countries.

The introduction of social insurance was not universally perceived as positive. Each time a patient wanted access to health care, he or she had to present a record to prove that he or she actually owned insurance. Unaccustomed to this, older people saw this as a restriction and did not perceive health insurance as a step in the right direction. Such a view was prevalent especially in Poland and led to the stipulation that a general taxation funding system would be implemented (MZ, 2004), which was grasped by opposition politicians and is a part of their election programmes in 2005. Medical circles, in contrast, saw health insurance as a prerequisite for transparency in health care financing, and at the same time as a first step to the rationing efforts in access to health care (defining the package of insurance services) and introducing additional insurance (for the benefits outside the package).

Tough labour markets in transition countries, which were undergoing major economic restructuring, became a major cause for a fall in the amount of money in health insurance funds. Regional authorities became involved in health care financing, but first and foremost the level of individual payments began to rise. Governments of CEECs have been trying to avoid increases in health insurance premiums on grounds that this step would have an impact on labour costs. In some of the countries, e.g. in Hungary, those concerns resulted in a drop in premiums, but there are also cases of rising 'insurance tax' (payroll tax), e.g. in Poland

¹¹ In Hungary, a health insurance premium was earmarked as late as 1996. Before that, one premium for all insurable social benefits was calculated. The total premium equalled 52.5% of gross compensation, and the health insurance premium was isolated therein at 22% (Gaal, 2004, p. 37).

premiums have been gradually going up by 0.25 points. To a large extent, the situation depends on the premium calculated at the outset. In Hungary in 1996, the premium was very high – 22%, whereas in Poland it was set at a much lower rate – 7% (see the table below), which brought about a permanent financial imbalance in the system. In Hungary, the premium went down as the contribution ceiling was reduced.

Table 8. Health insurance premium - % of gross salary

Country	Health insurance premium at the outset	Health insurance premium at present
Bulgaria	6.0	n/a
Estonia	13.0	n/a
Poland	7.0	8.5 (2005)
Slovakia	13.7	14.0
Hungary	22.0	14.0 (2002)

Source: WHO HIT, AHEAD, WPII country reports.

It is interesting to look at the structural evolution of health insurance. In the majority of CEECs – following the German pattern – many regional and/or industrial funds with significant autonomy were established. Over time, however, independence and/or autonomy were more limited, and payer functions were centralised again. In Estonia as early as 1994, a Central Sickness Fund was put in place, reporting to the Ministry of Social Affairs, and in the course of the 1990s other system management functions were also shifted to the national level (planning and programming, sanitary inspection, health promotion, etc.). In 1998 in Hungary, the self-governing nature of health insurance, in place since 1993, was discontinued. Authorities used to be appointed by social partner organisations (trade unions and employer associations). At present, there is a National Health Fund supervised by the Ministry of Health and the Ministry of Finance. In Slovakia, initially there were 13 health insurance companies, but then their number was reduced to five. In Poland, 17 sickness funds were established, but they ran for only four years. Since 2003, there has been one fund – the National Health Fund – with its regional branches. In 1999 in Bulgaria, a central fund was created right away, with 28 regional funds and 120 local branches.

Due to the presence of many payers with significant autonomy, health care system coordination was hindered, if not ruined altogether. Furthermore, the concept of competition between the payers, which was the driving force behind the establishment of many funds, turned out to be totally unrealistic in practice. The current return to centralisation, however, is not the same as the centralisation from the era of the centrally planned economy. In the present situation, the point is to create an environment conducive to the application of uniform rules, increased capacity for rational resource management and overall supervisory functions, rather than to exercise direct central planning.

Health insurance is not the only source of funds for the health care system. Some money comes from budgetary financing (from general taxes), both at the central budget and regional self-government levels. As can be inferred from the data presented in the table below, the share of financing from general taxation is quite varied. It is low in Slovakia, where the lion's share of funding comes from health insurance. It is also quite low in Poland, where we see an extremely high share of contributions from the personal resources of the population.

Table 9. Health care financing sources and levels in analysed CEECs in 2002

Country	Total expenditure per capita (\$)	Share of health care expenditure in GDP (%)	Share of health insurance in total health care funding (%)	Share of budgetary resources (from general taxation) in health care funding	Share of personal income in health care funding
Bulgaria	214	4.7	10.0 (2000)	70.0	20.0
Estonia	559	5.5	65,6	10.7	23.7
Poland	558	6.2	57.0 (2003)	8.0	35.0
Slovakia	698	5.8	85.9	3.2	10.9
Węgry	911 (2001)	6.8	71.6 (2000)	12.2	16.2
CEE	539	5.6	n/a	n/a	n/a
EU	2323	9.0	n/a	n/a	n/a

Source: WHO Health Care Systems in Transition for relevant countries and for Poland, MZ (2004).

In all CEECs, there has been systematic growth in the share of personal financing, which mostly consists of out-of-pocket payments. Private, voluntary health insurance has not been developed. Hungary was the first country to establish a legal framework for the functioning of such insurance (1993), but still it covers only approximately 1% of health care expenditure (Gaal, 2004). This kind of insurance is mostly related to financial benefits for the coverage of costs incurred by a disease. Private health insurance is also present in the Baltics, where it encompasses therapy-related travel and transportation costs (travel insurance) (GVG, 2003). In 1999, Bulgaria adopted a statute with provisions for private health insurance. Its objective scope is relatively extensive, but the demand for health services offered by insurance companies remains very limited (Koulaksazov et al., 2003). So far in Poland there have been no regulations with provisions for the establishment of private insurance companies. On the other hand, the so-called ‘subscription’ has emerged, whereby companies purchase a package of health care services for their employees with private health care units.

There will be no private insurance on a greater scale in the CEECs as long as the scope of services provided by the state from public funds has not been defined and limited. The launch of openservice rationing is one the most serious challenges facing not only the CEECs, but also many Western European countries.

CEECs have also officially introduced patient co-payments for health services that are a part of the public benefits package. In recent years, statutory decisions in that field were taken in Bulgaria and in Slovakia.

3.2 Decentralisation

Decentralisation in health care takes several different forms, which are being implemented with difficulty. Also, there has been a partial shift away from decentralising trends.

First of, decentralisation meant that governing functions in the sector would be shifted to the regional level. A shift to the regional level was a response to a tight monopoly of central authorities. Even before the regions could enjoy the mandate of authority in their jurisdiction (regional self-government), government administration had been some governing functions in the health care sector delegating to the regional level. In many CEECs there was a position known as the ‘regional medical officer’ (in Poland that function was referred to as the ‘voivodeship medical officer’). This person was responsible, on behalf of the government, for

supervising the whole set of issues related to the functioning of health care units in a given region. Delegation of authority was supposed to be replaced by autonomy, and regional self-government was to be held accountable for health care management. This tendency went hand in hand with the overall trend to bestow significant decision-making powers upon regions in each country, although it carried particular weight in bigger countries. The pressure for a complete takeover of health care issues by self-governing regions is currently opposed by the tendency towards a return to centralisation, given the need for stricter financial supervision in the sector. So far, regions have been performing predominantly planning and programming functions.

Secondly, as a result of decentralisation, municipality and county units became the owners of public assets, unlike in the previous system, where this prerogative rested exclusively with the state at the central level of governance. Consequently, regional and local self-government territorial units became the owners of health care facilities and were responsible for the development of those facilities. Transfer of ownership functions with regard to health care facilities to the regional level took place before a national network of health care facilities was established – its purpose would be to guarantee equal access and rational geographical layout. In practice, that fact became a barrier to the geographical planning exercise. Local and regional self-government territorial units did not have the same interest in mind as central authorities with regard to the future of many health care facilities, and thus rationalisation of the health care facilities network turned out to be a very difficult issue to solve. It must be remembered that geographical layout and the number of health care facilities (most importantly, hospitals) in former communist countries had been affected by the military doctrine of the Warsaw Treaty and, as such, required adjustments and significant improvement in the equality of access. In the years 1995-96, Hungary made an attempt to introduce, for that purpose, minimum statutory requirements in terms of equipment, employment and quality, side by side with service provision standards a hospital located in a given community would have to meet in order to win a contract with a health insurance fund (Capacity Act). This has become a long ‘struggle’ with local authorities. In the end a certain reduction in the number of hospital beds was achieved, followed by stabilisation (Gaal, 2004). In 1999, Bulgaria adopted the Law on Health Care Establishments, which presented a national map of key hospitals and outpatient primary and specialist health care facilities, as well as regional maps (National Health Map and Regional Health Map). In 2001, Slovakia drafted a document called ‘Optimum network of health care facilities in the Slovak Republic’, which has served as a basis for regulations and decisions with regard to local health care units and the equal distribution of those units across the regions. In 1999, a similar project was launched in Poland, but so far the suggested version of a national hospital network has failed to earn widespread political backing.

Table 10. Hospital beds and medical personnel, indicator per 100,000 inhabitants, 2002

Country	Hospital beds	Doctors	Dentists	Nurses
Bulgaria	650	352	78	363
Estonia	595	314	79	642
Hungary	783	319	48	855
Poland	557	230	28	486
Slovakia	768	322	44	713
CEE (average)	679	250	41	656
UE-15 (average)	599	356	66	818

Source: WHO 2004 *Health Care Systems in Transition for relevant countries*, OECD 2004.

Thirdly, decentralisation implied autonomy with regard to health care financing across regions. As a consequence, regional health insurance funds (sickness funds) were established, with total or partial autonomy, but this trend is currently going into reverse. The problems encountered in that area were related to coordination impeded by the central level, as mentioned before, side by side with the difficulty in arriving at rational decisions with regard to cooperation with local and regional self-government. Payer and self-government units relate to each other on two platforms: 1) self-government is a constitutive organ (owner) for the majority of health care units and has the responsibility for investment financing, and 2) in some countries it is not directly health care units but self-government itself that concludes contracts for the provision of services for the population with a health insurance fund (e.g. in Hungary).

Shortcomings in local and regional territorial self-government emerged in the health care sectors of the analysed countries in the years following decentralisation. These consist of decisions of questionable quality or a lack of necessary decisions due to the low professional quality of the administration and a high level of political influence with regard to its staffing. Self-government is more of a base reservoir for political parties than a reflection of grass roots local democracy. It is a consequence of the fact that in former communist countries' civic society is still very poorly developed, as for decades those countries had been deprived of the possibility for growth in that area. It must also be remembered that territorial self-government units operate in the context of a significant shortage of funding. They were assigned many tasks, yet adequate funding did not follow. In Poland, the lack of resources for financing hospital investment is a huge problem. Local and regional self-government is unable to perform this task and the National Health Fund has no mandate to carry it out. As a result, as hospitals purchase the equipment and renovate their wards, they incur ever-increasing debts (MZ, 2004). In Hungary there is double funding (both self-government and the health insurance fund have an obligation in that field), which incurs high costs in the sector (Gaal, 2004).

3.3 Health sector structure

After a series of reforms and changes, the health sector, which was much more integrated under the previous organisational structure, became clearly divided according to the services it provided and from a financial point of view. Sometimes, it is even said that at present this system is both de-integrated and disintegrated (Mihalyi, 2004).

In all CEECs, primary care has been separated and to a large extent privatised. Primary health care (PHC) physicians work in private units: as self-employed in their own surgeries within the framework of group practices or in bigger primary care units, which are also largely privatised. For example, in Slovakia the share of 'private physicians' in PHC amounts to 94% (Hlavacka et al., 2004), and in Poland it is more than 80% (MZ, 2004).

Unlike the previous system, patients are entitled to choose their PHC physician under present solutions. There is no geographical jurisdiction any more, i.e. the assignment to a given outpatient clinic is not contingent upon the address of residence.

More and more frequently, PHC doctors are family physicians. CEECs have launched and developed medical education in the field of family medicine. At the beginning, a special 'fast path' was designed to that end, but now it is a part of the regular medical college curriculum. Family physicians are not yet a dominant medical specialty in PHC in all CEECs under analysis. The process of educating and hiring family physicians in PHC has gone furthest in Hungary and in Poland. Family physicians in Hungary operate together with pediatricians, whereas in Poland they also cooperate with internal medicine doctors. In Estonia, financial incentives were put in place to promote post-graduate family medicine education (1998). In Slovakia, there is a concept of a general practitioner in PHC, which also employs pediatricians

and gynaecologists. In Bulgaria, the reforming effort has started only recently and at this stage PHC is being isolated and freedom of choice for patients is being introduced.

It would be rather difficult to assess whether the function of PHC general practitioner and family physician, borrowed by the CEECs from Great Britain, will actually meet expectations: on the one hand, the role of a guide through the therapeutic process (integration function), and on the other the role of a gate keeper. At present, it is believed that physicians from privatised PHC, financed under capitation and, partially, by a fee for service method, have financially benefited from the course of reform more than other categories of medical personnel so far.

The function of a community nurse, who can individually or collectively conclude separate contracts with the payer, is a novelty in PHC operations. In CEECs, the process of separating nursing care has barely begun. There are many arguments in favour of that solution, first and foremost the increase in nursing care needs due to dynamic population ageing, but it would be very difficult to predict what it will look like in practice. In former communist countries it is still believed that health care institutions are more trustworthy than an individual physician or nurse. Among other things, that is the reason behind the growing pressure (in spite of the reform) on the use of in-patient health care services (see the next section.)

Out-patient specialist care has also gained independence as a separate institution. Previously, it used to be a part of a clinic or a hospital. The share of private units in that group has been on the rise. In some countries, the prerogatives of specialist doctors have been defined in statutory terms. It also refers, for example, to the authority to prescribe drugs needed in the treatment of a disease requiring specialist care (e.g. in Slovakia). In other words, a PHC physician cannot prescribe each and every drug.

Hospitals, in a vast majority of cases, remain in the hands of the government, either local and regional or central. To a small extent, they are run by churches, monastic orders and NGOs. Some private hospitals have emerged. They do not provide therapy in the traditional scope of medical specialties but rather fill in certain gaps, or niches, in the supply of in-patient care services. As far as hospitals are concerned, one big novelty is their significant independence – they have been operating as institutions with so-called ‘legal personality’. In each of the countries included in the analysis, this independence has been specified in statutory terms.

Typically, hospitals vary according to the scope of medical activities they offer. In Poland, for instance, there are three reference levels: *poviat* hospitals with a basic scope of specialties (internal medicine, obstetrics and gynaecology, surgery), regional ones – with extended specialties, and highly specialised national hospitals. In other countries, similar levels of hospital activity are in place. In practice, however, this is not always the reality on the ground. Due to the principle of hospital independence, the development of medical specialties in a given hospital is often made following the decision of ward heads, who give preference to their own specialties, or as a result of the arrival of highly sophisticated equipment, frequently obtained as a free donation.

Traditionally, hospitals used to be run by medical doctors. At present, it has become more and more common to hire specialists – health care managers – for that purpose. The process of replacing medical doctors with managers is a difficult one, prone to many conflicts. On the one hand, medical doctors do not want to give their authority away to other professional groups. On the other, CEECs are still experiencing a shortage of hospital management specialists. What we mean here, though, are high calibre specialists who could act as respectable partners for medical professionals.

Rehabilitation centres and sanatoria, widely developed in communist countries, are no longer perceived as health care units that naturally require support from public authorities. Even though there have been no official statements in that field so far, practice has shown that those centres

are slowly disappearing from the area of health care. They are privatised and turned into some kind of fitness club or, simply, recreation centres. It is true that in many cases rehabilitation is an indispensable element for re-integrating people who lose their health or the disabled, but it would require very effective multi-sector cooperation to solve that issue, and at this point in former communist countries such cooperation is extremely scarce.

Another significant change in the functioning of the health care sector is the establishment of separate institutions for socio-therapeutic care and palliative care. Those institutions are targeted at people who are chronically ill and those older in age, who need nursing and care-giving services rather than therapeutic ones. For many years, such people were kept in hospitals due to the pressure of their families, but also ethical pressure. After all, they could not just be shown the door and thrown into the street! There has been slow development in the sector of public in-patient services for that category of patients. Development of private units in that area is much faster, frequently without any medical supervision at all. In Poland, this group of patients still finds shelter in monastic and church units. Long-term care (LTC) requires a separate approach in each of the CEECs, drawing on positive traditions of family and community cooperation in that field. Yet, one must build awareness of growing needs and attach greater weight to that area as far as financing is concerned.

Public health has also been isolated within the framework of the health care sector. To begin with, public health is a new idea in former communist countries. While it is true that in each of the countries in question the health care sector included the so-called 'sanitary and epidemiological inspection' with its regional administration, it must be remembered that sanitary and epidemiology inspectorate institutions were not involved in health promotion, various preventive activities or population screening tests. Thus, under the new circumstances, sanitary and epidemiological inspectorate either had to expand its range of activities, or new institutions were launched whose mandate includes tasks related to public health. In Hungary, Poland and Bulgaria the sanitary and epidemiological inspectorate is the institution which performs major functions in the field of public health, including new tasks. In Bulgaria, for example, within the framework of the sanitary and epidemiological inspectorate, a special centre for public health was created in order to perform the function of health promotion (1991). The sanitary and epidemiological inspectorate cooperates with self-government units with regard to the tasks commissioned with primary health care (inoculations and other programmes for infectious disease prevention). In Hungary and Bulgaria it is also responsible for mother and child care, school hygiene and has a supervisory function over occupational medicine.

In Slovakia, on top of that, centres for the implementation of the national health promotion plan, which was adopted by the parliament in 1992, were established. Health advisory centres were also appointed to support residents in the area of non-infectious disease prevention. Since 2000, dispersed efforts in the field of health promotion have been closely coordinated at the national level within the framework of the State Health Institute of the Slovak Republic. By the same token, in 2003, Estonia established a new institution: the National Institute for Health Development, whose task is to monitor the health situation in the country and report the findings, including issues related to environmental health, to implement national public health programmes at the local and regional level, and to provide relevant training.

All in all, the health care sector is clearly divided at present: on the one hand, along the lines of primary care, specialised hospital care, rehabilitation care and sanatoria, socio-therapeutic care and public health and on the other hand, according to ownership structure and types of constitutive organs. Due to problems regulating this modified system and coordinating it properly, it is almost impossible in the current environment to foresee its integration from a medical and organisational standpoint. This represents a challenge for another phase of

reforming effort. The challenge has already been taken up by some of the countries, e.g. Hungary, where a new initiative originated under the name of ‘care coordination pilot’.

3.4 Provider payment mechanisms

In the process of health care system reform, much attention is given to provider payment mechanisms. Policy-makers are hopeful that, thanks to new financing methods, resource management will become more rational, while medical circles expect that with new mechanisms their compensation will improve. In many CEECs the official compensation of medical personnel, and especially remuneration for nurses, is low lower than the average compensation in the national economy. The Czech Republic, Slovakia and recently Bulgaria are an exception to that rule, as doctors’ pay in those countries is relatively high.

Irrespective of low salaries, the income situation of many groups of physicians can be very good. Physicians hold several jobs, frequently working in private units as well. It is not uncommon for physicians to take informal payments for medical services from patients, first and foremost for surgery. This phenomenon, more and more often condemned by the general public and openly referred to as corruption, despite voices from medical circles in favour of the patient’s right to express their gratitude, exerts pressure on official pay rises for medical personnel. An additional source of that pressure is the current emigration of doctors and nurses to find or take up jobs in the EU.

Two mechanisms provide medical personnel with an opportunity for better compensation: capitation and fees for service. Fees for service were implemented together with the reform of 1993 in the Czech Republic and in Slovakia, and a year later it was replaced by capitation with regard to primary care physicians. As a result, health care sector operating costs went up considerably. Since then, payment mechanisms have been changed quite frequently, especially in Slovakia and mostly with respect to hospital financing. To simplify, it could be said that the direction of changes has been as follows: from fee for service, to bed-day fee, to global budget, to some version of diagnosis-related groups (DRG) method.

As far as the analysis of provider payment mechanisms in CEECs is concerned, one cannot overlook the long-lasting (since 1987) original studies in Hungary, which led to the implementation of the DRG method for in-patient care as early as the first half of the 1990s (1993). Hungarian experience has shown that in the case of the DRG method there is a tendency to manipulate diagnoses (‘DRG creep’). It is difficult to verify the diagnosis and the justifiability of procedures applied. Inspectors would have to exhibit roughly the same level of expertise as doctors in order to be able to assess it properly (Gaal, 2004). Furthermore, point valuation by health insurance institutions has always been rather low, which motivated physicians to create a multitude of points to obtain adequate resources. Notably, physician compensation in Hungary is about 20% lower than the average in national economy.

In Poland, provider payment mechanisms were changed to a great extent in 1999, at the time when sickness funds were introduced. Until then, the global budgeting approach had been applied, based on historic data with the specification of cost structure according to cost type. In 1999, when health sector insurance reform was implemented, autonomous sickness funds and independent hospitals were allowed to use the financing method of their choice. There was no uniformity in this area. Most hospitals selected admission fees (62%), followed by fees per procedure. It was even possible to apply several mechanisms in one hospital (MZ, 2004). As a result, application of those methods brought about significant increases in hospital admissions, but the length of hospital stays went down. In 2003, together with the centralisation of sickness funds, a uniform financing method according to diagnostic cases was introduced. Points per case were priced at a very low level, and costs incurred outside classified procedures did not

have sufficient financial coverage. Changes had to be made after just one year. They were implemented in an atmosphere of huge conflict between the hospital community and the National Health Fund. It must be emphasised that in the context of extremely low funding in the health care sector, with each of the methods described above, there was a way to find an opportunity for some increase in compensation levels. Physician remuneration in Poland is more than 20% lower than the national economy average and this ratio has been gradually getting worse throughout the 1990s and at the beginning of the new decade.

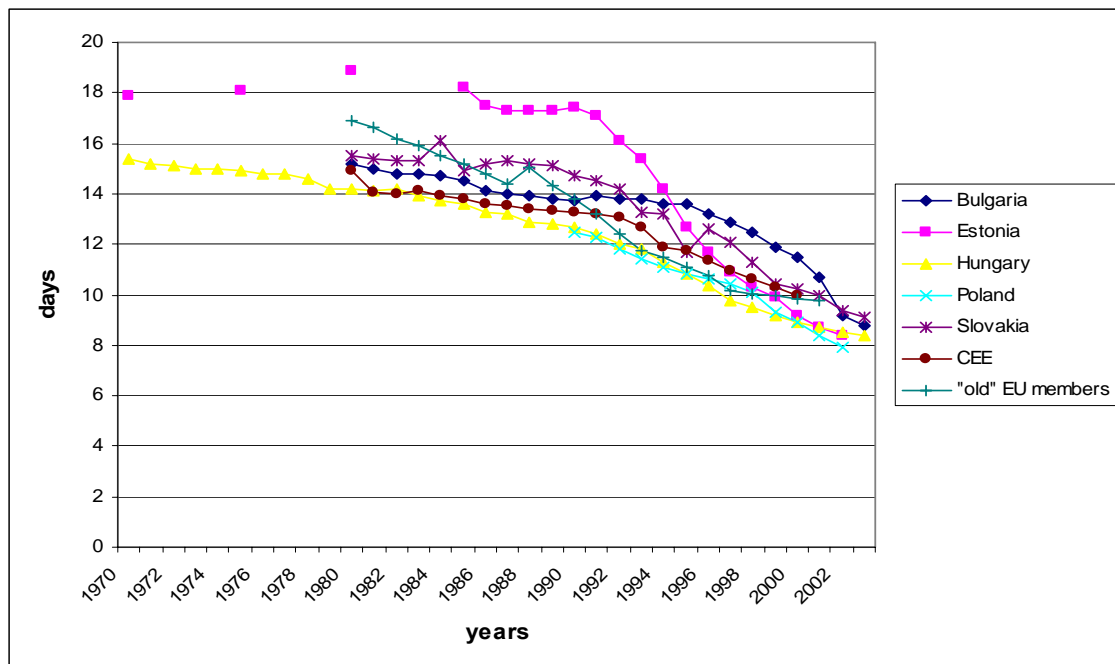
Table 11. Hospital efficiency indicators, 2002

Countries	Hospital beds – admission per 100 population	Average length of hospital stay in days	Occupancy rate (%)
Bulgaria	14.8	10.7	64.1
Estonia	17.2	6.9	64.6
Hungary	22.9	6.9	77.8
Poland	17.5	8.49	77.0
Slovakia	18.1	8.8	66.2
CEEC (average)	18.3	9.9	72.6
EU-15 (average)	18.4	9.7	77.6

Sources: WHO (2004) *Health Care Systems in Transition for relevant countries*, OECD 2004, WHO data 1999-2005 and OECD (2004).

The increasing frequency of hospital care use is accompanied by a shorter and shorter average length of stay in each of the analysed countries. These two factors indicate increasing technical efficiency of in-patient care as a shorter period of hospital treatment is correlated with acute care turnover. However, the process does not indicate whether, with more efficient hospital policy, quality of care is assured. In Estonia increasing acute care turnover and decreasing average length of stay are related to a decreasing number of beds in hospitals. At the same time, new health care institutions were introduced, such as one-day surgery based on new technologies and used in place of longer surgeries. In the period from 1990 to 2002, the number of available hospital beds declined almost by half (Jesse et al., 2004).

Figure 17. Average length of stay in hospitals



Source: WHO Health for All Database, 2002-2005.

In in-patient care, the Bulgarian health insurance system has introduced a clinical path payment method. In 2002, 450 diagnostic cases were specified with 40 clinical paths assigned to those cases. Health insurance sets the price for each medical procedure, for which various packages of specific services are set forth. Moreover, hospitals obtain a kind of statutory fund, calculated as 2% of minimum compensation for each bed-day in the case of hospitalisation not longer than 20 days. Hospitals also officially apply patient co-payments (since 1995) with the choice of hospital treatment attending physician and better conditions during hospital stay. Co-payments were regulated on statutory terms in 2001 and, surprisingly, each hospital can set its own tariffs (Koulaksazov et al., 2004). Physician compensation in Bulgaria is not lower than the average remuneration in the national economy. Physicians, just like employees in other sectors, negotiate their salaries during collective bargaining, and the outcome of those negotiations is taken into account by payers.

Common tendencies in the area of provider payment mechanisms consists in a gradual shift to DRG financing, followed by the application of such a method that will lead to the integration of a therapeutic process, which at present is divided in organisational and financial terms. Hungary, a leader in that field, has already introduced a pilot project on managed care (Mihalyi, 2004).

3.5 Challenges for health care reform

Having rejected the central planning approach also with respect to those sectors where market mechanisms have only marginal impact, former communist countries now find it difficult to govern those sectors. The difficulties seem to be the greatest in the health care sector.

On the one hand, the objectives the authorities have to face refer not only to economic prudence, but also positive health effects and medical effectiveness of the therapeutic process, and in the

two latter cases traditional tools of economic and administrative management turn out to be insufficient.

On the other hand, even though the health care sector is still public, it functions in the market environment, and numerous goods – drugs in particular – which are necessary for health service provision, are obtained from the market, according to marketplace regulations and prices. As a consumer of a huge, pharmaceutical market, the sector is having great difficulty in monitoring medical quality and cost-effectiveness of purchased products in the context of dispersed and much more autonomous provider structures. That helps to explain why drug expenditure growth dynamics, side by side with the dynamics of growth in its share in total health care spending, is so high in CEECs,¹² and drug policy directions are rather controversial: either too liberal or excessively restrictive, with limited access to good drugs of clinically proven effectiveness. In order to deal with that problem, it will take much more advanced information and analytical solutions (including regular exercise in pharmaco-economic analyses), as well as institutional ones. Such solutions are scarce not just because they are underrated, but also due to low funding in the health care sector, which means that every piece of ‘administrative’ expense has to compete against a therapeutic one, and so far the former has always been the loser. The severity of the allocation-related choices in the health care sector further aggravates its permanent debt. Governments of CEECs periodically cover the most serious debt items incurred by providers or payers.

4. Use of medical services

Use of medical services is a crucial factor in the assessment of current health care costs, as well as the projections of costs incurred in the future, driven by their increase. A description of health care use is based on two types of analyses: descriptive analysis, performed on the basis of international WHO and OECD reporting data, supplemented with country data, and logit analysis, based on country data from representative research devoted to living and/or health situation, carried out by statistical offices (see data sources). Logit analysis shows the variables correlated with higher use of medical services. The following variables were taken into consideration: gender, age, place of residence, marital status, number of individuals in the household, education, professional activity and self-assessment of one’s health status.

Certainly, the health situation (the need to contact a physician or a health care unit) and other patient-related variables are not the only elements that have an impact on the frequency of medical service use. There are other factors, strongly dependent on overall social variables, such as culture and tradition, as well as institutional factors, including availability of care driven by a set of legal regulations (e.g. gate-keeping function) and costs (e.g. one of the functions of co-payment is to constrain overuse of medical services), as well as the geographical spread of medical care institutions, especially hospitals. As a result, the frequency of service use is strongly differentiated across countries, both among the EU countries and the CEECs.

4.1 Use of out-patient services

On average, the level of out-patient (ambulatory) care services use in the EU15 is higher than in the EU25.

¹² The share of drugs in health insurance expenditures in the analysed countries equals 19% in Estonia, 40% in Slovakia, 25% in Poland and 28% in Hungary. And with regard to out-of-pocket payments, in Estonia it exceeds 50%, in Poland 60%, and in Hungary 70% (WHO, 2004 and MZ, 2004).

Table 12. Number of outpatient contacts per person, per year

Country	1980	1985	1990	1995	2000	2002
Bulgaria	6.5	7.3	6.6	5.5	N/a	N/a
Estonia	8.8	9.6	7.9	5.9	6.7	6.4
Hungary	10.5	11.0	13.2	10.4	11.1	12.0
Poland	6.5	6.4	5.8	5.4	5.4	5.6
Slovakia	n/a	14.2	13.6	n/a	16.3	14.5
CEE	8.5	8.7	8.2	7.7	7.5	n/a
EU-15	6.9	7.4	6.5	6.3	n/a	n/a

Source: WHO, Health for All Database, 2002-2005.

Among the countries analysed, Slovakia and Hungary have the highest level of out-patient care use, but over recent years there has been a decreasing trend in that respect in Slovakia, whereas in Hungary the trend has been on the rise. As was mentioned in section 3, Slovakia has introduced co-payment in primary health care and in out-patient specialist care, and PHC physicians are restricted in their prescribing practices. This must have had an effect in the fall in the rate of use in the last years of the first half of the current decade.

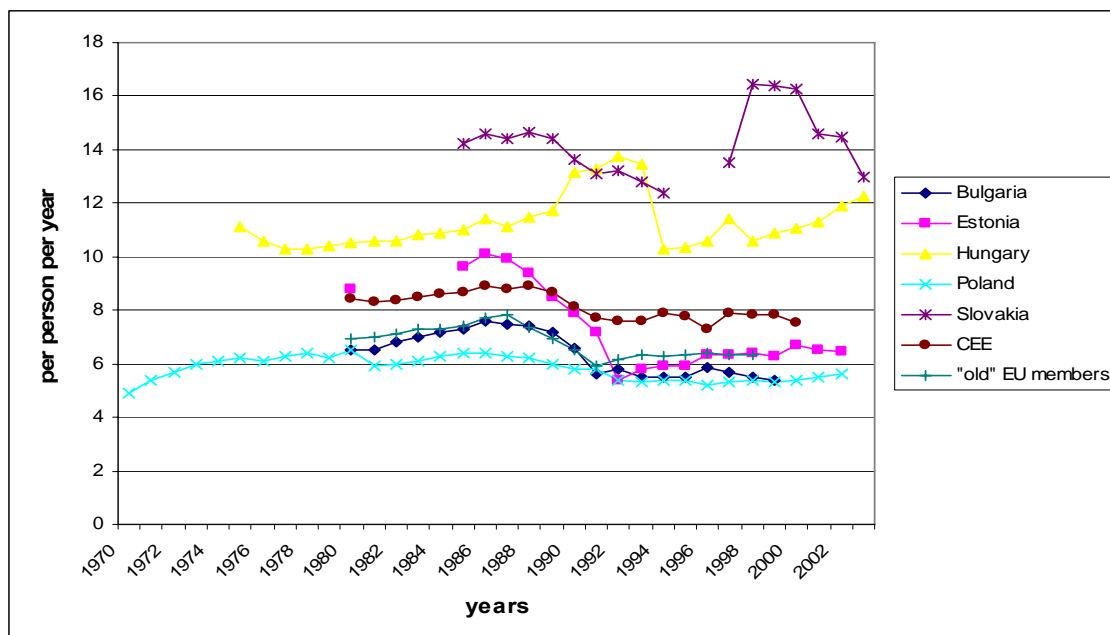
Poland and Bulgaria have the lowest frequency of out-patient service use, it is also the most stable in time. In both countries we are still witnessing the type of health behaviour that consists of the use of care in acute cases of disease that require intermediate hospitalisation. In Poland this is especially true of the farming population, which remains a high proportion of the population (about 1/5). Another factor which curbs the frequency of outpatient care visits in the two countries is the high cost of prescribed drugs, paid out of the patient's own pocket. Consequently, patients avoid outpatient care and urgently seek hospital care, where the price of drugs is included in the free service provided by the hospital. In recent years according to the Ministry of Health in Poland, this factor had a significant impact on the increased number of hospital admissions.

In Estonia a steep decrease in the frequency of outpatient care use was observed at the beginning of the 1990s. The decrease is related to introducing co-payment in primary care. In the last three countries, the level of service use is close to the EU-15 average.

The structure of doctor consultations reflects the morbidity pattern and prevalence of cardiovascular diseases. Naturally, the most common ones are the consultations with general practitioners (usually internal care specialists). This is often enforced by the health care system and the gate-keeping function of the GP. Secondly, consultations are related to cardiovascular system diseases and respiratory system diseases.

Higher use of primary care than specialist care is also related to the positioning of mother and child care within the PHC structure. In some countries, e.g. in Hungary, pediatricians are the most popular category of PHC physicians.

Figure 18. Number of outpatient visits per person per year, 1970-2003



Source: WHO, Health for All Database, 2005.

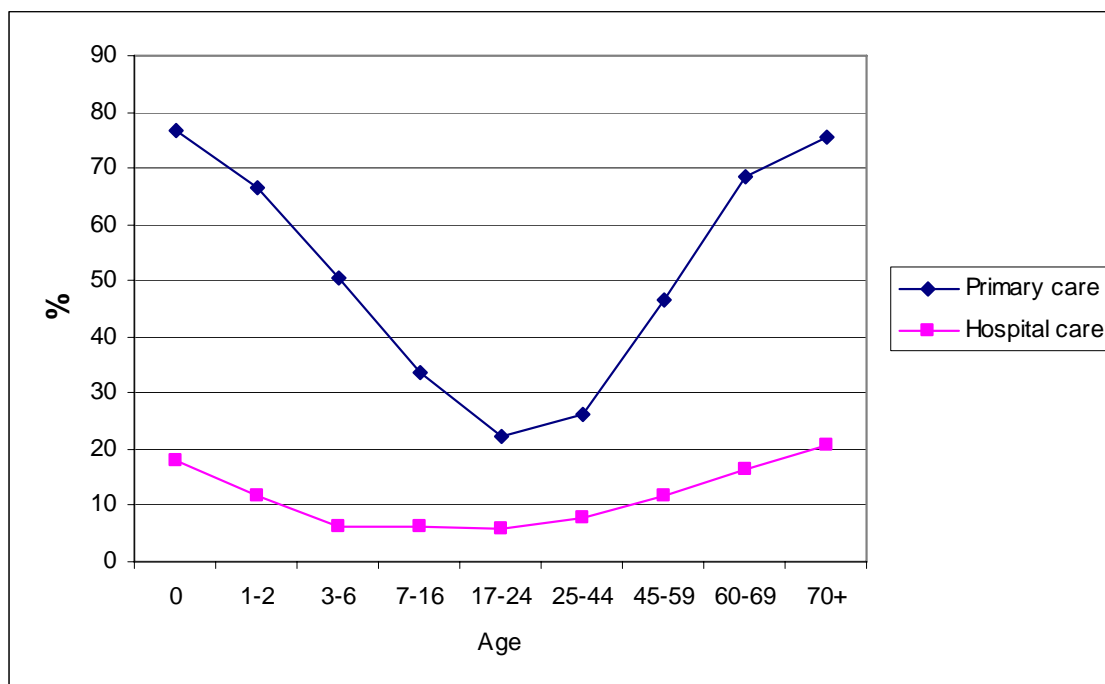
A descriptive analysis of explanatory factors behind the frequency of outpatient consultation use indicates that the elderly tend to visit ambulatory care doctors more frequently than other groups of adults. The typical use curve has a U shape, with a high level of medical services use by children and the elderly (see table and figure below). This relationship is rather confirmed for primary care and not confirmed when the frequency of specialist consultations, especially dentists, is analysed.

Table 13. Percent of adult population in Estonia that has used medical services during last 6 months (hospital care – during last 12 months) by age

Age	Medical consultation	Primary care	Specialist care	Dental care	Hospital care
18-24	53.1	38.9	26.7	30.1	11.5
25-49	49.8	38.3	26.9	34.1	9.1
50-64	56.9	46.3	29.6	31.4	14.1
65+	68.2	60.3	30.9	19.9	20.4

Source: Roovali (2005).

Figure 19. Primary care and hospital care use by age, Poland, 2003



Source: Central Statistical Office (GUS).

4.2 Primary Care

In the category of outpatient services, Primary Health Care (PHC) services have a unique role from the standpoint of further use of medical care. A competent, well-equipped and motivated PHC physician may keep the patient at a primary level which, relatively speaking, is the least costly of all organisational levels in health care.

Discrepancies in PHC use patterns in the countries analysed may be connected with the differences in behaviour correlated with population characteristics. To that purpose, several hypotheses were set forth, concerning the correlation between PHC use and the attributes of those who use it. The outcome of logit analysis, presented in the table below, has confirmed some of the hypotheses, the first and foremost being the one stating that primary care use is related to low self-assessment of health status, which seems to be quite obvious. Next, it corroborated another obvious thesis stating that the elderly tend to visit PHC physicians more frequently. By the same token, people who are not professionally active, such as the elderly and disabled pensioners, seek medical consultations more frequently. The well-known fact that women use the services of their physician more often than men was confirmed as well.

In contrast, it was not confirmed that there is a correlation between greater frequency of PHC consultations with variables such as: education, income, marital status, number of individuals in the household and place of residence. Yet, there are exceptions to that rule. For example, as far as education is concerned, in Poland the higher the educational attainments and financial status related thereto, the lower the rate of use of services offered by primary care. Other Polish studies (Czapiński, 2003) corroborate that people with higher education tend to overlook primary care and go directly to specialists operating on a private basis (referral is not required). In Estonia, however, a higher level of income and education is correlated with more frequent use of primary care. Another exception concerns the number of household members. Only in Hungary is that variable correlated with more frequent use of PHC services (see the position of

a pediatrician in Hungary!). As far as place of residence is concerned, results vary as well. In Poland, rural residents use less PHC services because they seek medical advice only when the disease is in an acute phase and typically go straight to hospital. In Estonia, in contrast, rural residents use PHC services more frequently than the people living in urban areas.

Table 14. Results of econometric analysis of primary medical services use

	Primary medical services use				
	Bulgaria	Estonia	Hungary	Poland	Slovakia
Sex	<i>Hypothesis: Women are more likely to use primary care services</i>				
	N/a	Confirmed	Confirmed	Confirmed	N/a
Age	<i>Hypothesis: Probability of primary care use increases with age</i>				
	N/a	Confirmed	Confirmed	Confirmed	N/a
Place of residence	<i>Hypothesis: rural Population is more likely to use primary care</i>				
	N/a	Confirmed	N/a	Not confirmed, rural population is less likely	N/a
Marital status	<i>Hypothesis: Single people are less likely to use primary care</i>				
	N/a	Not significant	N/a	Not confirmed, no differences	N/a
Number of persons in HH	<i>Hypothesis: Probability of primary care use is lower for bigger households</i>				
	N/a	Not significant	Confirmed	Not confirmed, no differences	N/a
Education level	<i>Hypothesis: Persons with higher education levels are less likely to use primary care</i>				
	N/a	Not significant	N/a	Confirmed	N/a
Labour market activity	<i>Hypothesis: Inactive people are more likely to use primary care</i>				
	N/a	Confirmed	N/a	Confirmed	N/a
Income in categories	<i>Hypothesis: probability of primary care use decreases with income</i>				
	N/a	Not confirmed, increases with income	N/a	Confirmed	N/a
Health status	<i>Hypothesis: Probability of primary care use increases with poorer health status</i>				
	N/a	Confirmed	Confirmed	Confirmed	N/a

Source: Own comparison based on AHEAD, WPII country reports.

4.3 Outpatient specialist care

The rate of use of specialist consultations, apart from the obvious factor of medical need, is also dependent upon the quality of PHC (family physician provides treatment rather than referring the person to a specialist right away) and financial incentives inherent in the primary care financing system, institutional variables concerning specialist care itself (organisational structure and access) as well as population-related variables.

In the countries included in the analysis, the most frequent consultations in the area of out-patient specialist care are held with cardiologists, neurologists, gynaecologists and respiratory system specialists (Golinowska & Sowa, 2005; Rangelova, 2005).

The level of dental service use is particularly low and there was a dynamically falling trend in that field in the 1990s. While in the 1980s the rate of dental consultations in Poland and in Hungary was similar to Western European rates, at present those two countries represent the lowest rates of all extended EU member states. In Poland, in 1990, the rate was 1.4, and in 2002 – 0.6 (OECD, 2004). A major factor behind that change is the discontinuation of free-of-charge dental services in schools and companies side by side with the almost complete privatisation of dental services.

Logit analysis, which demonstrates the correlation between population-related variables and the use of specialist services, yields similar results as in the case of PHC use. This is especially true of gender and age variables.

With regard to age, the results of the analysis show that the probability of specialist consultation increases in middle age. Specialist care use is also correlated with education and income (see Table 15), which could not be observed with respect to PHC. This is related to the high level of privatisation of the specialist care sector. In practice, specialist consultations in private clinics are payable and affordable for richer cohorts.

Table 15. Results of econometric analysis of specialist services use

	Specialist care use				
	Bulgaria	Estonia	Hungary	Poland	Slovakia
Sex	<i>Hypothesis: Women are more likely to use specialist care</i>				
	N/a	Confirmed	Confirmed	Confirmed	N/a
Age	<i>Hypothesis: Probability of specialist care use increases with age</i>				
	N/a	Not confirmed, middle aged are more likely	Not confirmed, middle aged are more likely	Not confirmed, younger are more likely	N/a
Place of residence	<i>Hypothesis: Rural population is more likely to use specialist care</i>				
	N/a	Confirmed	Not significant	Not confirmed, urban is more likely	N/a
Marital status	<i>Hypothesis: Single people are less likely to use specialist care</i>				
	N/a	Not confirmed, single are more likely	Confirmed	Confirmed	N/a
Number of persons in household	<i>Hypothesis: Probability of specialist care use is lower for bigger households</i>				
	N/a	Not significant	N/a	Confirmed	N/a
Education level	<i>Hypothesis: Persons with higher education levels are more likely to use specialist care</i>				
	N/a	Confirmed	Confirmed	Confirmed	N/a
Labour market activity	<i>Hypothesis: Inactive are more likely to use specialist care</i>				
	N/a	Confirmed	N/a	Confirmed	N/a
Income in categories	<i>Hypothesis: Probability of specialist care use increases with income</i>				
	N/a	Confirmed	N/a	Confirmed	N/a
Health status	<i>Hypothesis: Probability of specialist care use increases with poorer health status</i>				
	N/a	Confirmed	Confirmed	Confirmed	

Source: Own comparison based on AHEAD, WPII country reports.

The analysis of the marital status variable yields different results. In Poland and in Hungary marriage is correlated to more frequent use of specialist care services, while in Estonia it is just the opposite. Single people are the ones who more frequently go to see the specialists. This is difficult to explain. Sociological explanations would emphasise a generally greater probability of specialist care use among married people, who support, motivate and care for each other in sickness, stimulating medical appointments, in contrast to single people.

The correlation between specialist care use and the variable of a place of residence is quite blurred as well. Estonia is the only country where the hypothesis of more frequent use of specialist care by rural residents has been confirmed. In Hungary, place of residence is irrelevant in that respect, while in Poland there is an opposite trend: urban residents tend to use specialist services with higher frequency.

The correlation between the use of specialist care and the size of the household was borne out only in Poland. Yet, its direction – i.e. higher rate of use among smaller households – seems to escape simple interpretation.

4.4 In-patient care

In-patient care use has a direct impact on health care costs, as this segment of the health care sector is the most costly and any variable in that area requires careful analysis.

Table 16. In-patient care admissions per 100 population

Country	1980	1985	1990	1995	2000	2002
Bulgaria	17.6	19.3	19.0	17.7	15.4	16.4
Estonia	19.7	21.2	18.5	18.5	20.4	19.1
Hungary	18.8	20.5	21.8	21.7	23.6	24.6
Poland	12.2	12.3	12.1	13.3	15.5	17.5
Slovakia	16.0	17.3	16.4	19.1	19.9	19.0
CEE	16,7	17,2	16,4	17,2	18,3	n/a
EU-15	15.8	16.5	16.9	18.0	18.4	n/a

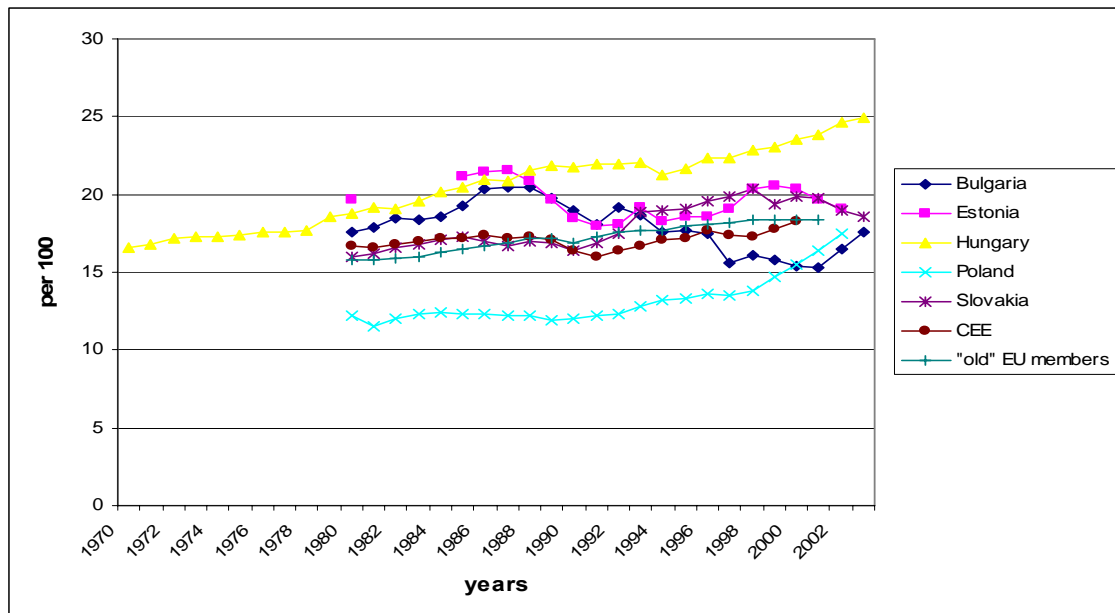
Source: WHO, Health for All Database, 2002-2005.

There are considerable discrepancies in hospital care use indicators in the countries under research. Poland has always had the lowest rate of use. Polish indicators are twice as low as Hungarian indicators. However, in recent years use of in-patient care in Poland has been increasing. The trend does not correspond to implemented reforms aimed at constraining hospital care use. The opposite trend can be observed in Estonia and Slovakia, where only in recent years has in-patient care use begun to slightly decrease. On average, the in-patient use rate in the old EU is lower than in most of the countries under analysis.

Overall, the number of patients treated in hospitals in Eastern European countries has been increasing in the last decade. The trend is stable, despite the reforms aimed at decreasing the use of in-patient services and introducing a gate-keeping function at the level of primary care (see section 3). A steep increase of in-patient care utilisation can be observed in Hungary and, at a lower level of use, in Poland and Bulgaria as well. There has been a drop in Slovakia and Estonia, but only over the recent period (see Figure 20). Reforms have probably contributed to that fact, with the introduction of co-payment in hospitals (in Slovakia) and the development of

outpatient specialist care and one-day surgery, which retains potential hospital patients (Estonia).

Figure 20. In-patient care admissions, 1970-2003



Source: WHO, Health for All Database, 2002-2005.

In the old EU member states, the increasing trend in hospital service use is less dynamic than in CEECs. At the turn of the decade, in the EU15, there has been practically no increase in the hospitalisation rate.

Descriptive analysis based on survey data shows an increasing frequency of hospital service use at older ages, but this relation is not strong (see Table 13 and Figure 18). More sophisticated research (Mayhew, 2000) indicates that the highest use of hospital services and higher costs related thereto are incurred in the last years and months before death. Thus, as mortality is higher at older ages, the frequency of hospital service use is also greater.

The outcome of logit analysis does not point to an unequivocal correlation with the variables, even with the old age variable (see the specification below). Higher use of hospital care is predominantly correlated with poorer health (sickness), here identified by means of a subjective indicator of self-assessed health status. Furthermore, in the case of Bulgaria and Poland the hypothesis on more frequent use of hospital care by women than by men has been confirmed. Marital status as a hospitalisation-related variable is present in two countries: Hungary and Poland. The direction of that correlation says that single people use hospital services to a lesser extent than people who are married.

The largest number of hypotheses stated with regard to the correlation between the variables in question and hospitalisation were confirmed in the case of Poland. Less populated household and rural residence are related to lower utilisation of hospital services in comparison to the urban population, whereas education, income and absence of professional activity entail more frequent utilisation of those services.

Table 17. Results of econometric analysis of hospital services use

	Hospital care use				
	<i>Bulgaria</i>	<i>Estonia</i>	<i>Hungary</i>	<i>Poland</i>	<i>Slovakia</i>
Sex	<i>Hypothesis: Women are more likely to use hospital care</i>				
	Confirmed	Not significant	N/a	Confirmed	N/a
Age	<i>Hypothesis: Probability of hospital care use increases with age</i>				
	Confirmed	Not confirmed, no differences	N/a	Not confirmed, younger are more likely	N/a
Place of residence	<i>Hypothesis: Rural population is more likely to use hospital care</i>				
	N/a	Not significant	N/a	Not confirmed, urban is more likely	N/a
Marital status	<i>Hypothesis: Single people are less likely to use hospital care</i>				
	Not confirmed	Not significant	Confirmed	Confirmed	N/a
Number of persons in household	<i>Hypothesis: Probability of hospital care use is lower for bigger households</i>				
	N/a	Not significant	N/a	Confirmed	N/a
Education level	<i>Hypothesis: Persons with higher education levels are less likely to use hospital care</i>				
	N/a	Not significant	N/a	Not confirmed	N/a
Labour market activity	<i>Hypothesis: Inactive are more likely to use hospital care</i>				
	N/a	Not significant	N/a	Confirmed	N/a
Income in categories	<i>Hypothesis: Probability of hospital care use increases with income</i>				
	N/a	Not confirmed, no differences	N/a	Confirmed	N/a
Health status	<i>Hypothesis: Probability of hospital care use increases with poorer health status</i>				
	N/a	Confirmed	Confirmed	Confirmed	

Source: Own comparison based on AHEAD country reports.

4.5 Use of medical services: Conclusions

The analysis of medical service use demonstrates that we are witnessing two levels among the countries included in the analysis: much higher use in Hungary and Slovakia and a lower one in Poland, Estonia and Bulgaria. As for trends, in recent years use has gone down in Slovakia and Estonia, which is probably related to the reforms carried out in those countries. In the case of Estonia, the low level of use, including PHC services, goes hand in hand with the low health status of the population (see Box 2).

As can be inferred from the analysis of the pattern of medical service use, the strongest determinant in the use of primary, specialist or hospital care is the self-assessed health status. Contrary to the expectations expressed in the hypothesis, while controlling for other factors, old age is a significant determinant of medical service use only for primary care. Despite its correlation with health status, old age is not an important factor for hospital visits and specialist care. This indicates that the ageing process will not lead to a steep increase in medical costs since the use of more expensive services is not significantly driven by age itself, but is more affected by health status. If ageing is accompanied by a further improvement in health status, a lid can be kept on the increase in health care costs.

According to the analysis of the breakdown of the use of health care services, such as PHC, specialist care and in-patient care, there was a significant rising trend in the use of the most

expensive services – i.e. hospital care – during the 1990s, and this tendency continues in the lower level countries (Poland, Bulgaria).

5. Summary and conclusion

Social transformation and institutional changes in Central and Eastern European countries have not alleviated the pressure on public finances, despite the hope that market mechanisms would bring about savings and efficiency in the social area, among other things. There have been numerous factors which require a new approach to the processes related to human capital, which calls for increased investment, including investment in health.

First and foremost, the quantitative development of human capital has been limited due to the sharp drop in fertility. Secondly, there have been rapid changes in the structure of the population. The share of the elderly over 65 years of age has been on the rise, reaching close to the level of the old EU member states. In the 1990s, the ageing dynamics in the Central and Eastern European region were higher than before in Western European countries.

An older population requires an adequate and stable pension system, has more health needs, and in the CEECs included in the analysis, this group has a markedly poorer health status. The desire to meet those needs in the context of a relatively lower stage of development is going to result in tension with regard to the structure of resource allocation for public and social purposes.

Furthermore, the countries analysed have experienced extremely dynamic epidemiological development. They have quickly entered the phase of epidemiological transition which is characterised by improved average life expectancy resulting from lower infant mortality rate and mortality caused by civilisation diseases, predominantly cardiovascular illnesses, which represent the major cause of death. There is a marked falling trend in that area, but so far none of the CEE countries under analysis has achieved the average rate of the old EU. As far as neoplastic diseases are concerned, a falling mortality trend has not been observed yet. Moreover, there are huge gaps between the countries, with record high results in Hungary and record lows in Bulgaria, lower than the average for the old EU countries. There has also been improvement in the third main cause of death, i.e. mortality related to external causes. A marked falling trend can be observed in that respect, although in two countries, Estonia and Hungary, mortality due to external causes is much higher, and in the 1990s those countries experienced a marked increase in the number of deaths related to external causes.

The outset of an improvement in mortality related to civilisation diseases, notwithstanding a continuously high incidence of those diseases, has coincided with an increased morbidity trend related to population ageing: growing incidence of chronic diseases, poly-morbidity and disability. Poland has a particularly high prevalence of old age diseases and disability.

Fluctuations in the objective health status indicators between countries are confirmed by health self-assessments. According to research in that field, carried out in the countries analysed, the best distribution of health status self-assessment opinions (the biggest number of very good indications and the smallest number of negative ones) can be observed in Slovakia and the worst one in Bulgaria. Assessment findings in the other countries are less extreme, especially in Estonia (half is 'fair'), followed by Hungary and Poland, with the shift towards good marks (fair and good together represent about 70%).

The analysis of factors correlated with health status, performed by means of logit methodology on the basis of representative research from country statistical offices, corroborates the correlation between self-assessed health status on the one hand and age, education, income and professional activity on the other. With age, self-assessed health status deteriorates to a

considerable extent in all the countries included in the research. In terms of education, economic status and professional activity, each of the countries has exhibited a correlation with a positive health status self-assessment. The cause of this correlation is obvious: the higher the income and education, and when the interviewee is professionally active, the greater the likelihood of a positive assessment of their health status.

Accelerated changes in the epidemiological profile of CEECs countries are being accompanied by radical institutional changes in the health care sector. Public funding principles have changed (from general taxation towards health insurance) and the range of medical benefits provided from public funds is being gradually reduced. Due to labour market difficulties, which are common in CEECs (the employment rate in the 1990s went down by at least 10 percentage points), health insurance premiums are not an effective source of funding for the sector. Furthermore, premium increases would affect the increase in non-wage labour costs. Consequently, in terms of sources of finance, health care funding tends to be mixed: a combination of budgetary and insurance funding. Moreover, in all the countries the share of individual, out-of-pocket financing by the patients has been on the rise. The introduction of official co-payments for medical services in the public sector is part of a recent wave of reform (in 2002 in Estonia and in 2004 in Slovakia).

By and large, service providers (medical service institutions) have been privatised, almost completely in terms of PHC and on a large scale with regard to out-patient specialist care, and the functioning of these institutions is largely subject to geographically de-centralised administration. There are big problems with health care coordination, and attempts are being made to streamline coordination. A national network of units is specified on statutory terms, with a precise definition of criteria required in order to obtain public financing, and in more and more cases the payer function is being consolidated and re-centralised. At the same time, defining the role of regional and local self-government remains a major challenge as far as provision of medical services for the population is concerned. In all the countries the role of regional self-government as an autonomous unit of administration has increased. Having said that, however, it must be noted that autonomous regional self-government does not contribute to consolidation and savings-oriented efforts in the health care sector. In Poland, which has as many as three levels of self-government, and the health care sector itself has been divided into various levels of self-government from the standpoint of subordination (municipality – PHC, *poviat* – *poviat* hospitals and basic specialist care, *voivodeship* – regional hospitals and comprehensive specialist care, and finally government level – highly specialised national centres), problems in coordinating numerous activities are especially cumbersome.

From an organisational standpoint, it must be said that the health care sector has rather disintegrated. PHC, specialist care, in-patient care, rehabilitation, and nursing and therapeutic services operate as separate modules, in many cases with diverse financing sources and methods. They are also subordinate to various constitutive bodies (e.g. particular levels of local and regional self-government, as has been mentioned above with respect to Poland).

Health care funding in the countries included in the research is low. At the same time, the gap in the level of resources per one inhabitant between the countries is quite significant. If we relate the size of per capita spending in US dollars according to purchasing power parity (PPP) to the country with the lowest funding (Bulgaria), Poland will have 3 times more, Hungary 5 times more, and the average for the old EU countries will be 10 times higher than in Bulgaria. In Poland, public funding remains extremely low, and despite economic growth it has not gone up. Health is not a priority, in spite of political declarations and social drive towards the reform. According to international studies, societies of new EU member states most frequently mention the need for reform, particularly in Hungary and Poland (Disney et al., 2005). Although it is not

quite clear which way such a reform should go, those opinions are a natural consequence of the negative evaluation of national health care systems.

In conclusion, health care systems in CEECs have been subject to significant changes during transition. Changes were made in order to adjust to the mainstream of transition: increased autonomy of institutions and professions, development of local and regional self-government, and greater impact of market mechanisms. As a consequence, we are currently facing serious problems with coordination, system disintegration and lack of control over the market environment (especially in the area of drugs). At the same time, in view of the increased health needs caused by the dynamic ageing of society and epidemiological patterns observed in the CEECs, these countries must improve funding as well as implement rationing reforms (introduction of official rationing and cost-effectiveness techniques), sector integration (managed care approach) and the development of an information and analysis base for better governing and supervision over new technology applications.

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