Effectiveness of health care system in countries in transition*

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Mortality is one of the basic elements of the demographic reproduction which significantly influences population age structure. In most cases, the determinants of mortality variation such as age, sex and causes of death are investigated. Mortality patterns are influenced also indirect by many factors for instance, housing, medical and public health, education or leisure time. These factors depend on the socio-economic, political and cultural environment of each population and may differ from country to country and change over time. Regarding medical progress, concept of avoidable mortality provides a basis for measurement of effectiveness of health care system.

History of the research in avoidable mortality goes back to the late 1970s when Rutstein and his colleagues in the USA developed concept to measure impact of medical science and health care on mortality level. They studied connection between health care and treatable diseases. Since Rutstein published the first list of causes of death that can be characterized as avoidable, many studies of avoidable mortality followed. The majority of the international studies of avoidable mortality has focused on Western Europe. Several investigations published in recent years analyzed situation in Australia, New Zealand or even Singapore. Only few analyses were concentrated on the Eastern part of Europe although this region provides interesting comparison due to political development in the recent decades. Two main periods can be distinguished – before and after the collapse of the communist regime.

Most of the Central and Eastern European countries experienced economic transition after the collapse of communism in the year 1989 that influenced mortality conditions. Fortunately, the Czech Republic avoided a dramatic increase in the number of deaths observed in most postcommunist countries after the year 1990 and called “the mortality crisis”. In other countries of postcommunist bloc such as Bulgaria, Hungary and especially Estonia, the death rates deteriorated strongly. Since the beginning of the 1990s the health situation in the Czech Republic has improved and new decline of mortality reappeared due to the huge investments in the health care system. Changes in mortality development are closely connected to the new social, political and economic perspectives that the end of the communist era brought. They reflect the opportunities created by the opening of borders to international trade and easier access to the modern medical equipment and highly effective drugs. The health care system has undergone several reforms and has also been transformed particularly in the area of prevention, diagnostics and therapy. To identify the quality of health care system and the effectiveness of the national health policy, the concept of avoidable mortality seems to be a propriate idea since it represents a theoretical measurement of the medical care quality.

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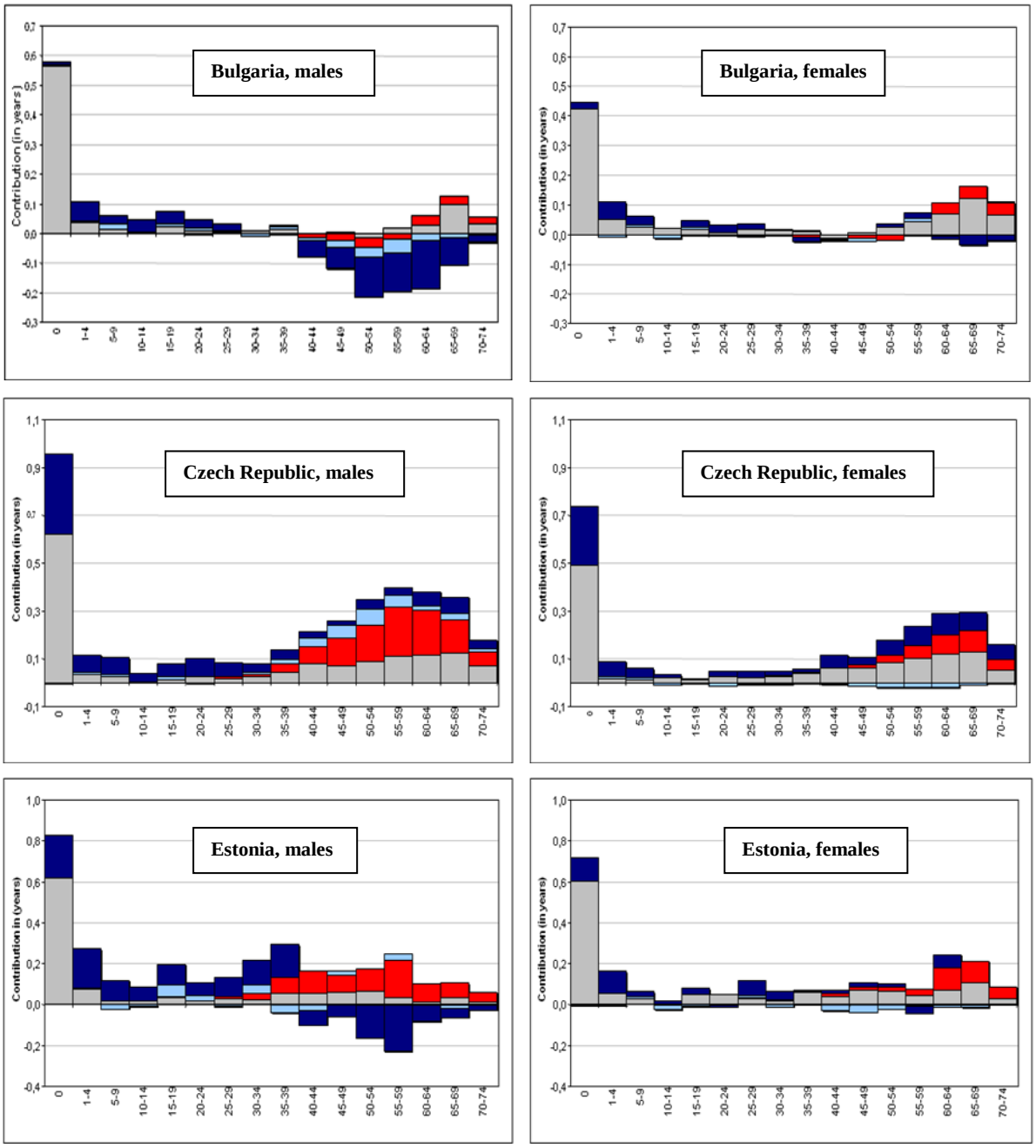
*Views or opinions expressed in this paper are attributable to the author and do not necessarily reflect those of Charles University in Prague, INED, European Doctoral School of Demography, or Lund University.

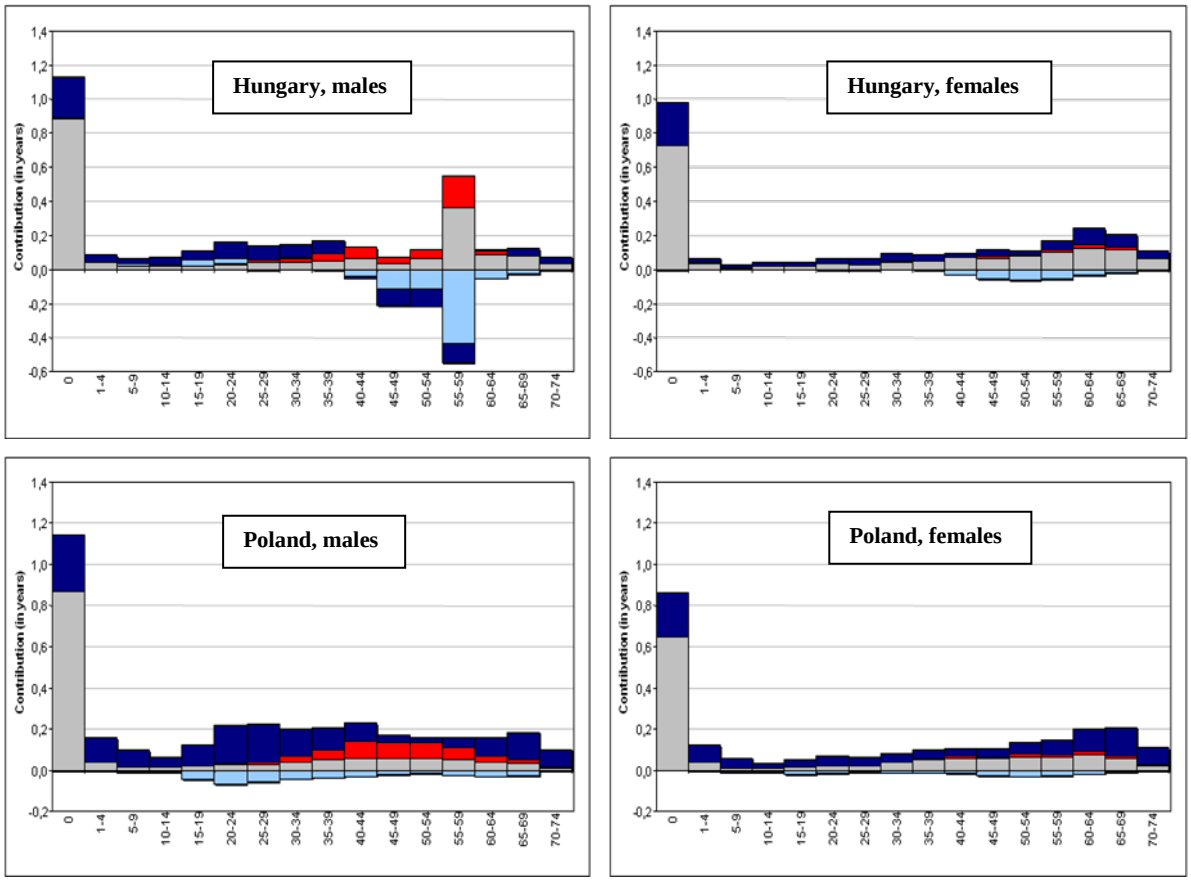
The aim of the following investigation is to analyze the trends in avoidable mortality in the selected Central and Eastern European countries since the year 1980. The authors applied classification of avoidable mortality differentiating three major groups of avoidable causes of death: treatable causes of death, preventable causes of death and ischemic heart disease that should be investigated separately due to its special position among causes of death. Since the probability of death increases with age and death cannot be avoidable forever and the probability of correct coding praxis declines at higher ages, the concept of avoidable mortality suggest age limit. In the first studies back to the 1980s, the age limit was fixed at 65 years. During time, the life expectancy strongly increased. Nowadays, the age limit for avoidable causes of death has increased to 75 years for both sexes. In many studies of avoidable mortality, the fact that female life expectancy at birth is continuously higher in comparison with males is mentioned. From this point of view, several authors have suggested to set up higher age limit for females when causes of death characterized as avoidable. But nobody has published such kind of studies yet. The aim of this contribution is to compare the results of avoidable mortality using the same age limit for both sexes to the results of study with different age bounds. Following tables illustrate the first results from the decomposition of the temprary life expectancy with the same age limit for both sexes.

Human Mortality Database, Mortality Database of the World Health Organization and the Czech Statistical Office served as main data sources for the analysis of avoidable mortality. The database of mortality according to the causes of death of the Czech Statistical Office was very important source due to lacking data until the year 1986 in the Mortality Database of the World Health Organization for the Czech Republic. For the analysis of avoidable mortality in Central and Eastern Europe, only Bulgaria, the Czech Republic, Estonia, Hungary and Poland were selected. In spite of the practical problems concerning deterioration of data reliability by mistakes in coding, filling a report about death or by the designation of diagnose or using different versions of the International Classfication of Diseases that can make the international comparison in causes of death more difficult, using broad categories of causes of death and the study of change within countries can eliminate such problems.

To analyze contributions of categories of causes of death to the temporary life expectancy between ages 0 and 75 years, method of decomposition was applied. Using decomposition, the surprisingly low level of avoidable mortality was observed in Poland. Even after the collapse of communism, the decline in mortality in Poland is mostly due to decrease of the number of causes of death characterized as non-avoidable. Changes of health care system during the transition did not play such important role in comparison to other factors having impact on mortality – economic, social, environmental determinants etc. On the contrary, the Czech Republic is a great example of the health care system improvements after the year 1990. The decline of avoidable mortality corresponds very well with increase of the quality in health care.

Figure 1: Contributions of categories of causes of death to the temporary life expectancy between ages 0 and 75 years from 1980 to 2005, selected Central and Eastern European countries





Legend:

- Non-avoidable causes of death
- Preventable causes of death
- Ischemic heart disease
- Treatable causes of death