

**SNAPSHOT OF
HEALTH INEQUITIES IN HUNGARY**

**Small area-level and social
inequities in health care needs**



**HealthMonitor Research and Consulting
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This executive summary is based on the research study commissioned by the Health Insurance Supervisory Authority. The full research paper is available in Hungarian at these websites: www.healthmonitor.hu and www.ebf.hu. Contributors to the research were Jozsef Vitrai, Csilla Kaposvari, Dora Hermann, Sandor Kabos, Andras Low, Zoltan Varhalmi.

This snapshot focuses on the conceptual framework, methodology, main results of the mortality analysis and our recommendations from the main research.

1. Why are health inequities an important issue?

Significant differences are often observed in the health of people living in different geographical regions and among, different social groups. These health disparities are caused in part by social-economic inequalities and by biological factors. Health disparities that cannot be explained by biological factors were for the purposes of this research, termed health inequities. Health inequities can and – as a long list of scientific evidences supports – should be reduced in order to improve the overall health of a population.

In our research, we made an attempt to answer two main sets of questions: “How health is distributed geographically and among social groups in the country?” and “What factors lie behind the existing health disparities and inequities?”.

In our approach, health disparities mainly describe the geographic or social differences in health care needs, while health inequities can provide information for health development programs and initiatives. In other words, health disparities answer the questions of “where?” and “what?”, while inequities answer the question of “what to change?”. Therefore, identification and mapping of health disparities in Hungary is creating an opportunity to adapt the allocation of limited health care resources to the actual health care needs of the population. On the other hand, information on the existing health inequities in the country will allow for targeted policy measures that could significantly impact the health of the overall population, but especially the health of disadvantaged social groups.

It is long known that social-economic factors have a strong impact on health. Health inequity is defined by a complex system of simultaneously interacting social, economic, cultural factors

relating to both individuals and their environments. To reduce health inequity it is therefore essential to identify the effects of these broader determinants. Revealing this complex system, i.e. producing the facts and knowledge needed for taking effective health policy measures, is a serious methodological challenge for health information experts. Our research also aimed to develop a methodology for identifying health disparities and inequities, a methodology based on best international practice, and to publish the first outcomes of this work.

2. What is our new approach for analyzing health inequities in Hungary?

Our research used individual mortality data for 2001-2003 and disability data from the National Health Interview Surveys of 2000 and 2003¹. The analysis employed individual (not aggregated) biological and social-economic data together with socio-economic data on the individual's residence, aggregated at small area and county level. We have investigated how mortality is affected by the individual factors such as age, gender, education, and economic activity (does/does not have a job). In the case of environmental factors relating to the individuals' residence, our analysis focused on the effects of small area summary indexes for access to health care, demography, economic development, psycho-social characteristics and urbanization. Our analysis of the complex and interacting system of individual and environmental factors was carried out using a multi-level statistical model designed to handle the two sets of factors separately. This approach gave the opportunity to deconstruct the complex system of individual and environmental factors, i.e. spread light on the compositional and contextual effects, and to analyze the individual impact of these specific groups of determinants.

Geographical analysis of health disparities and inequities was carried out on the level of small areas and counties. Additionally,

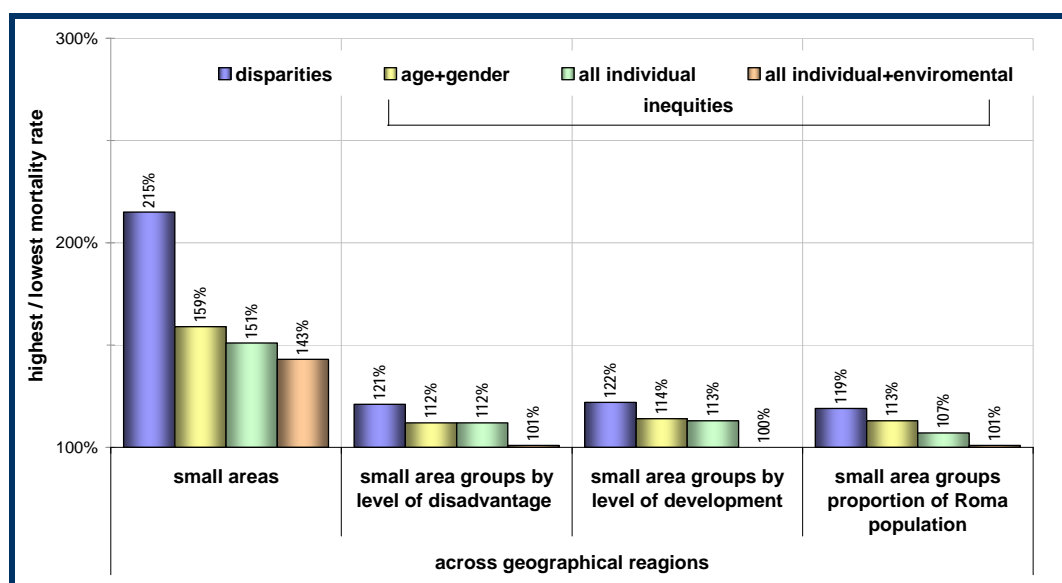
¹ This English language snapshot is limited to the presentation of the results on mortality disparities and inequalities.

geographical analysis was also used for small areas based on the official grouping of these areas by level of disadvantage, development and the proportion of the Roma population. The analyses relating to social groups were carried out on groups defined by gender, age, education, economic activity.

3. What are the main outcomes?

The results of our mortality analysis showed that in 2001-2003 there were significant disparities in mortality across geographical regions in Hungary. In the small area with the highest mortality rate, all-cause mortality was twice as high compared to the one with the lowest rate (Diagram 1). The image has drastically changed once we controlled for disparities caused by the different age and gender composition of the small areas. By controlling for disparities connected to biological factors, we have gained information on the geographical distribution of inequities that can be counteracted, and which can be deemed unacceptable if left unchanged.

Diagram 1: Extent of disparities and inequities in all- cause mortality across geographical regions, by determinants



By controlling for the different age and gender composition of the small areas, the disparities between the small areas with the

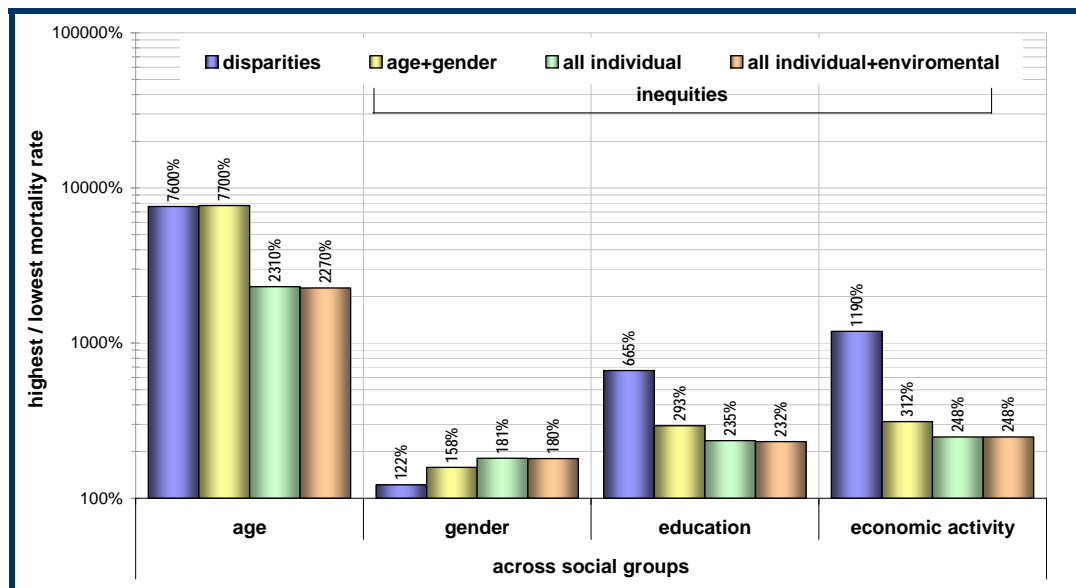
highest and lowest mortality rates were significantly reduced indicating that the different proportion of elderly people were behind the observed disparities.

By controlling for the composition of the population by all investigated individual factors (i.e. adding education and economic activity to age and gender) the inequities decreased further. Introducing the small area level environmental factors in addition to the individual factors, i.e. controlling for the disparities measured between the social-economic status of small areas, again produced a decrease in the observed inequities. After filtering out differences measured for all investigated factors, the all-cause mortality ratio between small areas with the highest and lowest mortality rates remained 1.5. After controlling for the individual and environmental factors, we can conclude that more factors will need to be involved in the study in order to clarify the reasons of such 50% excess mortality.

The observed disparities in all-cause mortality however disappeared after we have controlled for the differences in the studied individual and environmental factors between the small areas grouped based on the level of disadvantage, development and the proportion of Roma population. We can conclude that the inequities in mortality between these groups of small areas were caused -according to the outcomes of the analysis- by the disparities in the studied factors.

Analyzing the social groups defined by the individual factors being studied, the disparities and inequities found in all-cause mortality were several times larger than geographical disparities (Diagram 2). The diagram shows that not surprisingly disparity was nearly 1:80 for all-cause mortality between the young and the elderly population, 1:12 between the group of economically active and inactive, and 1:7 between people with primary and secondary education.

Diagram 2: Extent of disparities and inequities in all cause mortality across social groups, by determinants



After controlling for all individual and environmental factors, a significantly higher all-cause mortality rate remained among social groups in terms of education and economic activity. In the case of groups defined by age and gender, the remaining disparities in mortality are easily explained by biological determinants.

Concerning cardiovascular mortality, the pattern of disparities across groups defined by geographic and social characteristics were similar to all-cause mortality. There are however two notable differences: the disparity in mortality between the young and the elderly was 5 times higher for cardiovascular mortality, and twice as high for economically active and inactive, compared to the disparity measured for all-cause mortality.

Disparities and inequities experienced in cancer mortality are characteristically different from those measured for all-cause and cardiovascular mortality. One important difference is that disparities and inequities in cancer mortality were smaller between groups defined by education. The second characteristic is that the step controlling for the demographic composition of small areas increased mortality inequities from 1:1.5 to 1:2, while controlling for environmental factors decreased inequities back to their former

levels. This result supports the idea that environmental factors play a special role in cancer mortality. To further clarify the causes of Hungary's outstandingly high cancer mortality it would be justified to continue a multi-level analysis of mortality in small areas. Further research is also needed to clarify the underlying causes of high mortality among social groups with lower education and lower economic activity, seeing that controlling for the effects of the investigated individual and environmental factors failed to decrease these disparities.

4. What conclusions can we draw?

The most important conclusion of this research is that individual social-economic factors play a decisive role in health inequities. The effects of various social-economic environmental factors -including quality of health care- manifest primarily through these individual factors. The direct impact of environmental effects therefore proved secondary. Policy measures that fail to take into account the complex system of effects of individual and environmental factors will very probably miss their target, or achieve very low efficiency.

Using the data on geographic and social distribution of health inequities, it becomes possible to adjust in the future the allocation of health care resources to the needs of the population. Based on the information on geographical disparities by mortality, it is possible to estimate the quantity and composition of health care resources that need to be directed at a specific area or region, as well as to plan for an efficient patient management system.

Efficient use of resources and improved efficiency in meeting health needs can significantly increase the satisfaction of the population, without the need to commit additional funds. It not only increases the quality of health care, but also improves inequities relating to access to health care. Regular monitoring of inequities, and the publication of health inequity reports, are essential tools in this mission.

The perhaps unexpected nature of this study's outcomes is explained by the application of two relatively unused statistical approaches: the multi-variable multilevel method used for the simultaneous analysis of individual and environmental factors affecting health inequities and for analyzing the complex system of interactions between these levels.

The outcomes support the researchers' expectations that using complex statistical methods to "decompose" the complex system of factors that affect health may help understanding the peculiar causes of health inequities, and therefore, to answer the policy-makers' three questions: "where?", "what?" and "what to change?".

5. Recommendations to policy-makers based on the experiences of this analysis:

- Hungarian health policy should follow the example of other countries and concentrate on reducing health inequities as top priority. With the information available on health inequities in our country -and the experience we can draw from international initiatives- major opportunities exist today to reduce these inequities.
- Further targeted research is needed to reveal in greater details the nature of health inequities existing in Hungary, especially in terms of better understanding the special problems faced by cancer patients, and disadvantaged social groups and areas.
- It is urgent to change the legal environment regulating access to individual data, which currently represents a great obstacle for the research of health inequities.
- An expert base should be established to manage the monitoring of health inequities. Cooperation between policy-makers and scientists needs to be reinforced in order to ensure informed decision making.