

# Introduction

Dear Readers,

We are pleased to present you with the latest volume of “Public Health and Governance,” which, this time, is devoted to the evaluation of the burden of disease. The costs generated by disease are understood as the consequences experienced by any person in connection with a given disease, as well as by their family and friends, but also employers, governments, local governments and entire societies. The more severe the disease (requiring an intensive, long-term treatment or causing more deaths) or the larger the affected share of the population, the more the population’s potential (general activity and the ability to work) is weakened and the higher the costs of the disease are.

The analyses of the burden of disease require an appropriate epidemiological assessment and the evaluation of the costs incurred in connection with the prevention and treatment of given diseases and with the social losses incurred as a result of these diseases. The objective of these analyses is to create an evidence-based health policy, consisting in taking decisions on the basis of evidence and on the needs of a given society and the values shared within it. The process of creating healthcare policy begins with the identification of the health problems of a given population, prioritising diseases with regards to the severity of their outcomes, determined and measured in such a way that allows for grasping the diversity of these outcomes. Therefore, analyses provide data on the health condition of a population, with respect to various countries, regions, age groups and sexes.

The results of the analyses of the burden of disease are used for processes which help develop the healthcare system, determine investment priorities and allocate limited resources. In order to guarantee the creation of a national healthcare system which is adequate to the real challenges of the population’s health, decision makers must have the possibility to compare various consequences of these diseases; comparing those diseases which cause premature death with those that lead to disability. The designers of the Global Burden of Disease (GBD) study created a synthetic indicator: the DALY measure (Disability-Adjusted Life Years) in order to determine the number of years lost both as a result of premature deaths and disability. One DALY reflects one year of good health that was lost. Decision makers may use the DALY indicator in order to evaluate and compare the consequences of such diseases as cancer or depression with the use of one system. The DALY measure provides a more accurate picture of the main causes of the deterioration of the population’s health. Thanks to the use of the GBD methodology – a tool whose objective is to monitor public health status, experts have observed that in the last 25 years, in the majority of countries, a decrease of mortality was paralleled with a significant increase of disability (years lived with disability).

The structure of the presented volume reflects the main approaches and tools measuring the burden of disease, which can be divided into three groups: (i) non-monetary units, (ii) monetary units (iii), others (including the direct losses of wellbeing at all stages of the lifecycle, intergenerational and social outcomes).

The non-monetary measures comprise:

- a) epidemiological indicators (connected with mortality and morbidity – the number of deaths, new cases of a diseases or the number of people with a given disease during a year, the mortality, prevalence or incidence rates);
- b) the number of the life years lost:
  - without taking into consideration the quality of life, with the assumption that deaths are not equal in different periods of life. Death at a younger age is a greater burden than death at a later stage of life;
  - taking into consideration the reduction of the quality of life due to the disease in the years preceding death.

The first two items of the presented volume show the results of the calculations of the burden on Polish society expressed in the units of lost time. The first paper presents two indicators: Potential Years of Life Lost (PYLL) and Period Expected Years of Life Lost (PEYLL), without taking into account health-related quality of life; whilst in the case of the latter paper– analyses are based on the DALY indicator (Disability-Adjusted Life Years), which reflects the burden, and, in its construction, comprises also the disability caused by the disease.

The main approaches which express the burden of disease in monetary units in societies globally include the following:

- a) the capital approach related to human capital and physical capital (measuring lost economic growth) – Value of Lost Output;
- b) the approach based on the concept of the Willingness-to-Pay (WTP), which measures the burden by means of the value of statistical life (VSL);
- c) the approach of the cost of illness, which measures the direct and indirect costs of an illness.

Two of the papers presented in this volume discuss the results of the analyses of the costs of two out of five chronic non-communicable diseases: diabetes mellitus (DM), illustrated with the example of Poland, and dementia as seen in the case of Romania. These studies also demonstrate various tools for collecting data concerning costs: one of them uses the available information on the use of resources by people with DM (data from the National Health Fund and the Social Insurance Institution – ZUS), whereas the latter applies the information from the prospective questionnaire carried out among people with dementia in Bucharest. These are exceptionally important and interesting issues. In the contemporary world, chron-

ic non-communicable diseases such as cardiovascular disease, malignant neoplasms, diabetes mellitus, chronic respiratory diseases and mental illnesses pose the largest burden for societies. This is also confirmed by other studies presented in this volume of Scientific Issues.

The comprehensive evaluation and measurement of the burden of disease also require accommodating the mutual effect of diseases and their influence on meeting the objectives of the healthcare policy. This poses a great challenge for researchers, practitioners and politicians

involved in public health. Yet, this challenge must be undertaken, attempting to assess the real burden of each disease. As the authors of the most recent GBD study, carried out by the Institute of Health Metrics and Evaluation (IHME) at the University of Washington, wrote in their introduction to the publication of the results of the 2015 study, we must do this “Because what you don’t measure you don’t know, and what you don’t know you can’t act on.”

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