WHO GUIDE TO IDENTIFYING THE ECONOMIC CONSEQUENCES OF DISEASE AND INJURY

Department of Health Systems Financing
Health Systems and Services

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EXECUTIVE SUMMARY

Introduction

Distinct from but complementary to clinical or epidemiological approaches to disease burden assessment, analysis of the economic impact of ill-health can address a number of policy questions concerning the consequences of disease or injury. Some of these questions relate to the microeconomic level of households, firms or government – such as the impact of ill-health on a household's income or a firm's profits – while others relate to the macroeconomic level, including the aggregate impact of a disease on a country's current gross domestic product or its future growth prospects. Resulting estimates - for a particular disease, injury type or for diminished health status in the population generally - can usefully inform decision makers about the overall magnitude of economic losses and their distribution across a number of key drivers or categories of cost. Although insufficient as a basis for setting priorities and allocating resources in health – for which data on effectiveness are also needed – economic burden studies may help to identify possible strategies for reducing the cost of disease or injury via appropriate preventive action or treatment strategies.

The number of economic impact studies in health has grown exponentially since the codification of a 'cost-of-illness' framework in the mid-1960s. Although most studies continue to use some variant of this methodology (which combines the 'direct' costs of medical care, travel costs etc. with the 'indirect' cost of lost production because of reduced working time), macroeconomic growth models have increasingly been used to better understand the dynamic and multifaceted nature of losses at the societal level. There has also been increasing policy and research interest in better understanding the microeconomic consequences of ill-health, particularly at the household level in lower-income countries.

Looking across the large body of existing literature, it is apparent that there is a considerable degree of methodological heterogeneity, and also that many studies suffer from a range of conceptual deficiencies. In light of these methodological shortcomings, as well as the strong continuing demand for economic impact studies in health, WHO is proposing a defined

conceptual framework within which the economic impact of disease or injury can be considered and appropriately estimated, with a view to enhancing the consistency and coherence of economic impact studies in health.

Conceptual foundations

Ill-health can contribute to losses in individual utility or social welfare in a number of defined ways, both directly (because people prefer to be more healthy than less healthy) and indirectly by reducing the enjoyment or utility associated with the consumption of goods and services unrelated to health, or by compromising other economic objectives such as producing income that allows people to consume market goods. Since the consumption of health goods and services in general does not yield utility or welfare directly - people would prefer not to incur these expenses in terms of money and time - the key direct determinants of economic welfare can be summarized as the consumption of *non-health* goods and services, leisure, and health itself. It is the impact of disease or injury on these domains of economic welfare that should form the basis of estimation.

In order to have a clear economic meaning, it is vitally important that economic impact studies be explicit and consistent about which of these domains of welfare are to be captured. Is it the impact on economic welfare in its entirety that is being assessed, or just some specified component(s) of it? At the macroeconomic level, for example, the impact of illness on gross domestic product (GDP) - both now and in the future - is something that is measurable and has a clear economic meaning. On the other hand, combining health expenditures with (market and some non-market) production losses and expressing this in relation to GDP – as cost-of-illness studies tend to do – does not have a clear economic meaning.

Economic impact studies also need to be clear as to the appropriate counterfactual being used (the comparator situation against which economic losses can be assessed). Is it being assumed that the disease or risk factor never existed, or just that no new cases are assumed to occur in the current period and/or in the future? Again, the decision to adopt a particular approach will be determined by the underlying question; for example, a prevalence-based approach (in which new

as well as pre-existing illness in a given year is assessed) is more suitable for ascertaining the total current economic burden of a disease, whereas an incidence-based approach (in which only new cases are included) is more useful for ascertaining the expected impact of a disease in the future (and its potential prevention). Traditional cost-of-illness studies to date have broadly employed a variant of the prevalence-based approach, in that they estimate disease-related intervention costs for a given year (but *not* future years), plus the present value of lost production in future years associated with deaths in the current period. This seems to be a peculiar and also inconsistent approach to cost estimation and counterfactual analysis.

Macroeconomic analysis of the consequences of disease and injury

A macroeconomic approach to assessing the impact of ill-health should be concerned with establishing the aggregate impact of disease and injury across different economic agents on three areas related to economic welfare (both now and in the future): non-health consumption possibilities, leisure time and health status.

Most economic impact studies at the societal level have focused on gross domestic product (GDP), which represents market consumption opportunities. While this has a clear meaning, it is important to note that GDP includes expenditure on health goods and services, so this component should be omitted and the focus of analysis be redirected towards establishing the present value of discounted aggregate flows of current and future consumption of non-health related goods and services linked to disease. Key channels through which disease or injury can impact on macroeconomic performance or output include increased health expenditures, labour and productivity losses, and reduced investment in human and physical capital formation