What Are the Challenges in Conducting Cost-of-Illness Studies?

Two important transitions occurred in Value in Health Regional Issues (ViHRI) in 2014: the first is shifting the journal to being an online publication, and the second is the transition toward an article-based publishing approach. This new policy allows an article to be published online soon after its acceptance for publication, with final, citable pagination, speeding up the publication and dissemination process. Indeed, the number of ViHRI page views and article downloads has substantially increased in 2014. Several articles from our first issue of ViHRI devoted to Central and Eastern Europe, Western Asia and Africa (CEEWAA) published in 2013 have gained interest from other scholars and are already among the top cited articles in the journal. These articles focused on capacity building for health technology assessment (HTA) in Hungary [1], the state and challenges in implementing HTA in Cyprus [2], and an editorial addressing further steps needed for the development of HTA, pharmacoconomics, and outcomes research in the CEEWAA region [3]. This present volume features 19 high-quality articles and editorials from 12 countries and includes economic evaluations and cost-of-illness (COI) studies pertaining to various disease areas such as cardiovascular disease, AIDS, and cancer; patient-reported outcomes and quality-of-life assessments; and health policy analyses of pharmaceutical policies, adherence to medications, and HTAs.

Several articles in this volume report on COI studies for various health conditions. Two of the studies are population based [4,5], providing the first information on the economic burden of substance abuse and several types of cancers in the Russian Federation. Other studies estimated the COI in a sample of patients with rheumatoid arthritis and its relation to disease severity [6]; the cost related to work productivity of patients with ankylosing spondylitis, rheumatoid arthritis, and psoriasis in the Czech Republic [7]; the direct cost of HIV-infected patients in Greece [8]; and a single-center study from Ghana assessing the health facility cost of Buruli ulcer wound infection [9]. Although all these studies present a cost analysis, some may not be considered traditional COI analyses because of their narrow scope.

The aim of COI studies is to assess the economic burden that a specific health problem (e.g., colorectal cancer) or groups of health conditions (e.g., all cancer types) impose on a society in terms of utilization of health care services, and productivity losses [10]. This research has the potential of informing policymakers and decision-makers on the relative impact of diseases at the population level, assisting them in making projections of future health care costs and in resource allocation decisions.

Although the first COI analysis was published more than 60 years ago [11], it was only in the mid-1960s that Dorothy Rice [12,13] formalized the methodology for costing illness. Since then, several taxonomies and guidelines for conducting and reporting COI studies have been published in the health policy and health economics literature [10,14–17]. At the same time, several scholars have criticized COI analyses, suggesting that they may lack credibility, consistency, and relevance for decision makers [17].

Performing a COI analysis, as any other economic evaluation, may be very challenging. The choice of cost methodology (i.e., top-down vs. bottom-up), for assessing both direct costs and losses in productivity, is largely driven by data availability, which varies among countries. This is also the case when epidemiological data (i.e., disease prevalence, incidence, and associated mortality) need to be used. Ideally, COI estimates should use a database linking epidemiological data, resource utilization of health services, and their actual cost (rather than list prices), and demographic data. Big data and patient registries are rarely available in CEEWAA countries. Nevertheless, even if these data sources were available, valuation of important cost components, such as patient out-of-pocket expenses and lost productivity of informal caregivers, is rather difficult, and therefore may be excluded, thus underestimating the true COI.

The accuracy of methods used for assessing losses of productivity due to an illness is even more complex and is also contingent on data availability. Two main issues may arise here: 1) What method should be used: the human capital approach (HCA) or the friction cost method (FCM)? The HCA values the potential lost production because of an illness, whereas the FCM may provide a more accurate estimate of the actual lost production. Therefore, the findings of Potapchiik and Popovich [4] suggesting that the costs associated with substance abuse in Russia are almost threefold higher when the HCA rather the FCM was used are not surprising. Although very appealing, using the FCM requires a tremendous amount of information that is both not available and may change over time because the friction time is heavily dependent, for example, on the unemployment rate in the country. Indeed, Ignatyeva et al. [5] in their assessment of the cost of selected cancers in Russia suggest that because accurate data on the length of friction period were not available, they had to rely on experts’ opinion in their calculations. 2) Should analyses include losses due to absenteeism or also due to presenteeism? Although the assessment of productivity losses resulting from absenteeism may be relatively easy, this is not the case when presenteeism is concerned, and these costs are frequently omitted.

Although the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) has initiated task forces dealing with various aspects of cost-effectiveness and budget-impact analyses and published widely used recommendations, an effort to improve the methodology of conducting and reporting COI analyses...
studies is warranted. These guidelines, together with the improvement in data availability and quality, may make these studies credible and valid and increase their use among policy-makers.

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