Pharmacoeconomics: principles, methods and applications

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Abstract

Defining the value of medicine is a common thread that unites today's healthcare practitioners. With serious concerns about rising medication costs and consistent pressure to decrease pharmacy expenditures and budgets, clinicians/prescribers, pharmacists, and other healthcare professionals must answer the question, “What is the value of the pharmaceutical goods and services I provide?” Pharmacoeconomics, or the discipline of placing a value on drug therapy, has evolved to answer that question.

More specifically, pharmacoeconomic research is the process of identifying, measuring, and comparing the costs, risks, and benefits of programs, services, or therapies in order to establish a set of objective criteria on which to base the decisions regarding resource investment.

As costs (the value of the resources consumed by a program or drug therapy of interest) and consequences (the effects, outputs, or outcomes of the program or drug therapy of interest) vary according to the stakeholder, clarification of the perspective is critical because the results of a pharmacoeconomic evaluation depend heavily on the perspective taken.

The conceptual path that links the clinical value to the economic value comprises the estimation of the efficacy and the effectiveness. The term efficacy refers to the treatment effect measured in experimental studies – often on a set of surrogate outcomes. Effectiveness indicates the treatment effect as observed in real life situations and focuses on “hard” endpoints, including quality of life. The relationship between the costs borne by the payer (in Italy, mainly the SSN) and the effectiveness defines the economic value of treatments.

In this seminar we will describe how to build a pharmacoeconomic model starting from published evidences:

1. Synthesis of the evidences (revision of the literature & meta-analysis)
2. Cost outcome analysis (a patient-level simulation model)
3. Cost analysis (interactive budget impact model)
4. How to present results (ICER, C/E plane, C/E acceptability curve, confidence ellipse)