

# Chapter V

## Health Technology Assessment and Health Economics

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### ABSTRACT

*This chapter introduces health technology assessment and health economics as tools for decision makers to allocate scarce resources in the healthcare sector. It argues that information about the safety, efficacy and effectiveness, organizational implications, social and ethical consequences, legal considerations, and health economic aspects of the application of a health technology needs to be taken into account with a view to informing decisions about the registration and reimbursement of a health technology. Also, the author hopes that understanding the methodology and use of health technology assessment and health economics will persuade the reader of the added value of such studies and promote the application of health technologies that support further health improvements, whilst containing health expenditure.*

### INTRODUCTION

Over the past decades, health technology has made a major contribution to improving the health status of populations. At the same time, countries of the Organisation for Economic Co-operation and Development (OECD) witnessed an annual average growth in health expenditure per capita of 4% during the 1995-2005 period. Growth in health expenditure outpaced economic growth of 2.2% during the same period. Health expenditure growth can be attributed to a number of factors,

including ageing populations, the increasing prevalence of chronic conditions, healthcare resource use price inflation, technological advances, and increased expenditure on drugs. With respect to the latter, annual average growth in pharmaceutical expenditure per capita of 4.6% during the 1995-2005 period exceeded the annual rise in health expenditure (Organisation for Economic Co-operation and Development, 2007).

In response to this, Governments seek instruments that can aid the implementation of safe and effective health technologies that support

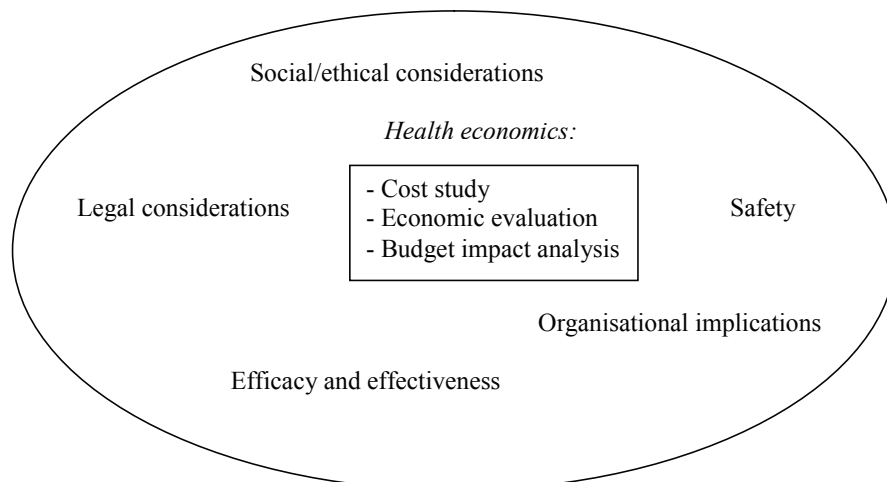
further health improvements, whilst containing health expenditure. Health technology assessment and health economics provide such tools (Carlsson, 2004). Evidence derived from health technology assessments and health economics is used to inform decisions about the registration and reimbursement of health technologies in an increasing number of countries. The requirement for health technology assessment and health economics fits within an overall trend towards evidence-based decision making in healthcare (Perleth et al., 2001).

By carrying out a health technology assessment and a health economic evaluation, companies can demonstrate the value of their health technologies with a view to obtaining registration and reimbursement. For instance, in order to obtain registration and reimbursement, drugs need to overcome a number of so-called hurdles. A new drug needs to demonstrate its quality (first hurdle), safety (second hurdle) and efficacy (third hurdle) with a view to obtaining a registration. Reimbursement may depend on the value for money of the drug at the time of the reimbursement application (fourth hurdle) and after a number of years following the admission to the reimbursement system (fifth hurdle).

The aim of this chapter is to provide an introduction to the science underlying the assessment of a health technology. This chapter serves as a resource for readers who want a succinct overview of the methodology and use of health technology assessment and health economics. Particular attention is paid to defining the fundamental concepts and terms that are relevant to health technology assessment and health economics. Key references are added for those readers who wish a more advanced understanding of these topics. The chapter concludes with providing some additional resources (suggested readings, scientific journals, international societies and databases) related to health technology assessment and health economics.

Figure 1 presents the conceptual framework for this chapter. In its broadest form, a health technology assessment evaluates a health technology in terms of multiple criteria, one of which consists of a health economic assessment. The different criteria of a health technology assessment and the different forms of a health economic assessment are described in detail in the remainder of this chapter.

Figure 1. Health technology assessment and health economics



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