

Methods For The Economic Evaluation Of Health Care Programmes Book

As public accountability has increased and resources have become scarcer, public health, like clinical medicine, has been forced to re-examine the benefits and costs of its activities. Decision and economic analysis are basic tools in carrying out that mission. These methods have become standard practice in clinical medicine and health services research. This book, now in its second edition, was written in an effort to apply and adapt that experience with public health situations. The book was originally written to introduce Centers for Disease Control and Prevention staff to the concepts of decision and economic analysis, to provide guidance on methods to maximize comparability of studies, and to provide access to frequently used reference information. It has been adapted to meet the needs of scientists and managers in state and local health departments and managed care organizations as well as students in schools of public health and clinicians for an introductory text -- a text that shows how these methods can be applied in population-based practice, to facilitate better comparability of studies, and to solidify understanding of the scientific basis for use of these tools in decision making. Decision makers will learn how these studies are conducted so they can be critical consumers-- understanding the strengths and limitations- and apply findings to policy and practice. The second edition updates and expands upon the standard methodology for conducting prevention effectiveness analyses. Each chapter has been revised or re-written. The chapters on measuring effectiveness, decision analysis, and making information useful for decision makers as well as several appendices are entirely new. The report has two purposes. The first is to describe in depth various techniques for treating uncertainty and risk in project evaluation. The second is to describe advantages and disadvantages of each technique to help the decision maker choose an appropriate one for a given problem. Although the focus is on buildings and building components, the techniques described in this report are equally applicable to non-building investments. These same principles apply in the evaluation of any capital budget expenditure whose future stream of benefits, revenues, savings, or costs is uncertain. Investments in long-lived projects such as buildings are characterized by uncertainties regarding project life, operation and maintenance costs, revenues, and other factors that affect project economics. Since future values of these variable factors are generally not known, it is difficult to make reliable economic evaluations. The traditional approach to project investment analysis is to apply economic methods of project evaluation to "best estimates" of project input variables as if they were certain estimates and then to present results in single-value, deterministic terms. When projects are evaluated without regard to uncertainty of inputs to the analysis, decision makers have insufficient information to measure and evaluate the risk of investing in a project having a different outcome from what is expected. Although the technical literature treats uncertainty and risk analysis extensively, a recent survey shows that applications are still far behind theoretical capabilities. Several reasons might be hypothesized for this lag in implementation. First, practicing analysts anticipate high costs and time-consuming analyses in evaluating risk. Yet computers reduce considerably the costs and time for risk analysis. Second, analysts are concerned about the lack of data. The more uncertain the input data, however, the more helpful it would be to account for the uncertainty and to evaluate the associated risk. Third, decision makers, particularly top managers in corporations or government agencies, are reluctant to accept these techniques because they are not confident that the techniques will help them make better decisions. This reluctance may stem in part from a lack of understanding of the techniques. A comprehensive examination of the different approaches to treating uncertainty and risk in project evaluation would show how the application of risk analysis techniques to uncertain data can improve management decision making. This report is intended as the basis for a new ASTM standard on how to account for uncertainty and risk in economic evaluations of buildings and building components. The approach is tutorial and relatively comprehensive to build understanding of the appropriate concepts and techniques among engineers, architects, and economists of the American Society for Testing and Materials (ASTM) Subcommittee who will develop the new standard. The report is also intended for professionals, educators, students, and managers who are interested in applying these techniques to the economic evaluation of buildings.

Many health care policymakers in the U.S. would like to make more use of economic data in reviewing new and existing medical interventions. Although much work is being done to evaluate the comparative effectiveness of medical interventions even this technique is not used extensively in policymaking. The U.S. has fallen behind international best practices in using economic data in the comparison of medical interventions for the purposes of policymaking. Systematic reviews of evidence offer opportunities to increase the use of economic data in the health policy process. Among the systematic reviews that have been conducted recently, there is great inconsistency in whether economic evidence is collected alongside clinical research data, the quality of the data collected, and the methods used to collect the data. In many cases, clinical research data may be sufficient for making decisions about adopting interventions. However, we need to explore and define better the information that is needed to guide those who are in charge of making requests for systematic reviews of evidence. More information is needed about: (a) when economic data might add to decisionmaking on top of the efficacy/effectiveness data presented in typical systematic reviews, and (b) if economic data are helpful, what methods should be used to include this information. Such information could guide future calls for systematic reviews of evidence. More information on best approaches for the inclusion of economic data alongside systematic reviews of clinical evidence will also benefit those responsible for producing systematic reviews. At present, many systematic reviews of evidence do not include economic evidence. Even if efforts are made to review the economic evidence, economic evidence often is insufficient to treat it in the same way that meta-analytic techniques can be applied to other pieces of evidence. Further, some economic evidence concerns primary data while other economic evidence is derived from more or less standardized and protocol-based approaches based on mathematical modeling. Investigators involved in performing systematic reviews need better guidance for making requests for economic evidence alongside other systematic reviews of evidence, with careful definitions of terms. This report has two aims. The first aim is to develop a conceptual framework for deciding when economic outcomes could provide policy-relevant information when included in systematic reviews of clinical outcomes. In the last of a series of works on grading of recommendations, the authors began a discussion about including resource use (a key input into costs and other economic considerations) in the grading of recommendations. When deciding on what to include in an economic evaluation component of a systematic review, the analyst needs a frame of reference. This report provides a conceptual framework that can guide the choice of perspective, the target or reference populations, and the assessment of generalizability. The framework also demonstrates how the interaction of these choices has important implications for the conduct of the analysis. The framework was developed by a multidisciplinary team that developed a draft framework and shared that framework with experts in cost-effectiveness analysis and public policy who reviewed

and provided feedback before the framework was finalized. The second aim of this report is to define tradeoffs between incorporating previously completed “off-the-shelf” evaluations from the published or grey literature into systematic reviews, versus performing an explicit independent economic evaluation as part of a systematic review. The evaluation of the tradeoffs between the choices is based on theoretical and conceptual arguments, the availability of data, and nature of expected results.

This highly successful textbook is now in its fourth edition, and has been extensively updated in order to keep pace with the considerable advances in theory and practice in recent years. Most economic evaluations of health care programmes at the moment are cost effectiveness and cost-utility analyses. The problem with these methods is that their theoretical foundations are unclear. This has led to confusion about how to define the costs and health effects and how to interpret the results of these studies. In the environmental and traffic safety fields it is instead common to carry out traditional cost-benefit analyses of health improving programmes. This striking difference in how health programmes are assessed in different fields was the original motivation for writing this book. The aim of the book is to try and provide a coherent framework within cost-benefit analysis and welfare economics for the different methods of economic evaluation in the health care field. The book is written in an easily accessible manner and several examples of applications of the different methods are provided. It is my hope that it will be useful both for teaching purposes and as a guide for practitioners in the field. Glenn C. Blomquist, John D. Graham, Rich O'Connor and four anonymous referees provided helpful comments on previous versions of the manuscript. I would also like to express my gratitude to the following persons for helping me to prepare the manuscript: Carl-Magnus Berglund, Carin Blanksvard, Ann Brown, and Ziad Obeid.

'This handbook is an excellent reflection of the growing maturity and methodological sophistication of the field of Health Technology Assessment. The Handbook covers a spectrum of issues, from primary evidence (clinical trials) through reviews and meta-analysis, to identifying and filling gaps in the evidence. Up-to-date, clearly written, and well-edited, the handbook is a needed addition to any personal or professional library dealing with Health Technology Assessment.' Professor David Banta, TNO Prevention and Health, The Netherlands 'This text presents the most advanced knowledge on methodology in health care research, and will form the backbone of many future studies' - Paula Roberts, Nurse Researcher The 'effectiveness revolution' both in research and clinical practice, has tested available methods for health services research to the extreme. How far can observational methods, routine data and qualitative methods be used in health care evaluation? What cost and outcome measures are appropriate, and how should data be gathered? With the support of over two million pounds from the British Health Technology Assessment Research Programme, the research project for this Handbook has led to both a synthesis of all of the existing knowledge in these areas and an agenda for future debate and research. The chapters and their authors have been selected through a careful process of peer review and provide a coherent and complete approach to the field. The handbook has been a unique collaboration between internationally regarded clinicians, statisticians, epidemiologists, social scientists, health economists and ethicists. It provides the most advanced thinking and the most authoritative resource for a state of the art review of methods of evaluating health care and will be required reading for anyone involved in health services research and management.

Guidelines exist for the conduct and review of economic evaluations. In the United States, the systematic review of economic outcomes and the inclusion of economic data in systematic reviews have not been standardized as much as is the case for clinical outcomes. The lack of standardization leads to large variation in the quality of economic evaluations and in the use of economic data in systematic reviews. This suggests a need to establish some standards in the United States. Systematic reviews play a critical role in determining the comparative effectiveness of medical interventions and are critical for developing clinical practice guidelines, efficacy-based coverage decisions, and general health policy. As such, the processes of searching for and summarizing studies illustrating clinical efficacy and effectiveness have been streamlined in the United States and elsewhere. While much work is being done to evaluate the comparative effectiveness of medical interventions, the United States has fallen behind international best practices in using economic data in the comparison of medical interventions for the purposes of policymaking. With increased awareness of the importance of evaluating value for money in health care, the number of published economic evaluations has increased in recent years. As more economic analyses are produced, researchers and policymakers need to have methods to synthesize and interpret the results of multiple analyses that address a single issue; systematic review offers a framework for doing this. However, systematic reviews of economic analyses pose special challenges for those who perform reviews and those who use them. Traditional techniques of meta-analysis are not appropriate for many economic analyses, which are often syntheses, as in the case of economic modeling studies, and hence should not be combined as one might combine the results of different randomized controlled trials. Instead, systematic reviews of economic modeling studies are most useful for comparing and contrasting how different investigators have chosen to structure their models and estimate key variables. They can also clarify how results differ between studies based on these different assumptions. Identifying sources of variation across studies can help individual decisionmakers determine which studies best apply to their particular settings and can guide future research by identifying areas of uncertainty. A little over a decade ago, health economists had “not yet developed a formal methodology for reviewing and summing up evidence from individual economic evaluations...or indeed for assessing whether systematic reviews are possible in this context.” Today, there are as yet no widely validated methodological criteria to be applied to screening economic studies for inclusion in systematic reviews. The difficulty with developing systems to evaluate best practices for conducting economic evaluations is that each economic evaluation faces a potentially unique set of constraints relative to gold standard sets of recommendations. Systems proposed to date have listed criteria for the assessment of economic evaluations, yet have hardly tested comparative rating and weighting of technical criteria. This comparative weighting and the need to determine whether strength in one area can offset a deficiency in another will be critical to the success of the system that is developed. However, it is not clear that systems that will result in

a relative ranking of studies that are not perfect can provide anything other than an approximate estimate of the comparative validity of differing results. Nevertheless, there is unquestionably an urgent need for improving the design, analysis and reporting of economic evaluations in health care. The aim of this paper is to review the strengths and weaknesses of checklists that have been used to evaluate best practices for conducting economic evaluations in health care.

Methods for the Economic Evaluation of Health Care Programmes Oxford University Press

Health economics is concerned with the study of the cost-effectiveness of health care interventions. This book provides an overview of Bayesian methods for the analysis of health economic data. After an introduction to the basic economic concepts and methods of evaluation, it presents Bayesian statistics using accessible mathematics. The next chapters describe the theory and practice of cost-effectiveness analysis from a statistical viewpoint, and Bayesian computation, notably MCMC. The final chapter presents three detailed case studies covering cost-effectiveness analyses using individual data from clinical trials, evidence synthesis and hierarchical models and Markov models. The text uses WinBUGS and JAGS with datasets and code available online.

Als Indiana Jones econoom zou zijn, zou hij Steven Levitt heten. Freakonomics leest als een detective. Wall Street Journal Wat is gevaarlijker: een pistool of een zwembad? Wat hebben sumoworstelaars en schoolmeesters gemeen? En waarom wonen drugsdealers bij hun moeder? Het zijn vragen die je niet gauw van een econoom zou verwachten. Maar Steven Levitt is geen typische econoom. In Freakonomics onderzoekt hij met co-auteur Stephen Dubner de verborgen kant van de dingen om ons heen. De geheimen van de Klu Klux Klan, bijvoorbeeld. Of de waarheid over vastgoedmakelaars. En, stelt hij, heeft het dalen van de misdaadcijfers in plaats van met een goed draaiende economie niet eigenlijk alles te maken met de legalisering van abortus? Freakonomics is het leukste en verhelderendste boek over economie dat je je kunt voorstellen. Een mix van essentiële feiten en een meeslepende vertelling, die onze blik op de moderne wereld voorgoed verandert en verscherpt. Een fascinerend en belangrijk boek, leesbaar, compact en barstensvol informatie over de wereld om ons heen. Wie dit boek over de raadsels van het alledaagse leven heeft gelezen moet wel concluderen: economie is belangrijk, interessant en erg leuk. de Volkskrant `Levitt stelt ongewone vragen en geeft provocatieve antwoorden. Slim, precies en tot in detail. New York Times

The highly successful textbook *Methods for the Economic Evaluation of Health Care* is now available in its third edition. Over the years it has become the standard textbook in the field world-wide. It mirrors the huge expansion of the field of economic evaluation in health care. This new edition builds on the strengths of previous editions being clearly written in a style accessible to a wide readership. Key methodological principles are outlined using a critical appraisal checklist that can be applied to any published study. The methodological features of the basic forms of analysis are then explained in more detail with special emphasis of the latest views on productivity costs, the characterization of uncertainty and the concept of net benefit. The book has been greatly revised and expanded especially concerning analyzing patient-level data and decision-analytic modeling. There is discussion of new methodological approaches, including cost effectiveness acceptability curves, net benefit regression, probabilistic sensitivity analysis and value of information analysis. There is an expanded chapter on the use of economic evaluation, including discussion of the use of cost-effectiveness thresholds, equity considerations and the transferability of economic data. This new edition is required for anyone commissioning, undertaking or using economic evaluations in health care, and will be popular with health service professionals, health economists, pharmacists and health care decision makers. It is especially relevant for those taking pharmacoeconomics courses.

In today's world of scarce resources, determining the optimal allocation of funds to preventive health care interventions (PHIs) is a challenge. The upfront investments needed must be viewed as long term projects, the benefits of which we will experience in the future. The long term positive change to PHIs from economic investment can be seen across multiple sectors such as health care, education, employment and beyond. *Applied Health Economics for Public Health Practice and Research* is the fifth in the series of *Handbooks in Health Economic Evaluation*. It presents new research on health economics methodology and application to the evaluation of public health interventions. Looking at traditional as well as novel methods of economic evaluation, the book covers the history of economics of public health and the economic rationale for government investment in prevention. In addition, it looks at principles of health economics, evidence synthesis, key methods of economic evaluation with accompanying case studies, and much more. Looking to the future, *Applied Health Economics for Public Health Practice and Research* presents priorities for research in the field of public health economics. It acknowledges the role played by natural environment in promoting better health, and the place of genetics, environment and socioeconomic status in determining population health. Ideal for health economists, public health researchers, local government workers, health care professionals, and those responsible for health policy development. *Applied Health Economics for Public Health Practice and Research* is an important contribution to the economic discussion of public health and resource allocation.

There are so many ways in which health might be improved today and, as technology improves, the opportunities will increase. However, there are limits to budgets as well as other resources so choices have to be made about what to spend money and time on. Economic evaluation can help set out the value of the costs and benefits from competing choices. This book examines how to undertake economic evaluation of health care interventions in low, middle and high income countries. It covers: Ways in which economic evaluations might be structured Approaches to measuring and valuing costs and effects Interpreting and presenting evidence Appraising the quality and usefulness of economic evaluations

Given the increased concern about value for money in the health care sector there is a growing literature in the economic evaluation of health care programmes. However, to date there are no texts that discuss in detail the methods used in cost-effectiveness, cost-benefit, and cost-utility studies for those who want to undertake such studies or to assess study results critically.

Methods for the economic evaluation of health care programmes provides the reader with a well equipped methodological tool-kit in order that he or she will be better prepared to tackle

aspects of economic evaluation methodology. This is accomplished by including discussions of many casestudies, clear illustrations, and a number of simple exercises.

To accompany the hugely successful 'Methods for Economic Evaluation of Health Care Programmes 2e', this book is a thorough and rigorous discussion of the methodological principles and recent advances in the rapidly advancing field of theory and practice of economic evaluation in health care. Written by an internationally acclaimed group of authors, the book provides an in-depth discussion of the latest theoretical economic evaluation, including the methods for measuring costs and outcomes, the collection of data alongside clinical studies, ways of handling uncertainty, discounting and issues relating to the transferability of economic data. It is an ideal book for those studying economic evaluation on postgraduate or professional courses in health economics of public health.

The purpose of economic evaluation is to inform decisions intended to improve healthcare. The new edition of Methods for the Economic Evaluation of Health Care Programmes equips the reader with the necessary tools and understanding required to undertake evaluations by providing an outline of key principles and a 'tool kit' based on the authors' own experiences of undertaking economic evaluations. Building on the strength of the previous edition, the accessible writing style ensures the text is key reading for the non-expert reader, as no prior knowledge of economics is required. The book employs a critical appraisal framework, which is useful both to researchers conducting studies and to decision-makers assessing them. Practical examples are provided throughout to aid learning and understanding. The book discusses the analytical and policy challenges that face health systems in seeking to allocate resources efficiently and fairly. New chapters include 'Principles of economic evaluation' and 'Making decisions in healthcare' which introduces the reader to core issues and questions about resource allocation, and provides an understanding of the fundamental principles which guide decision making. A key part of evidence-based decision making is the analysis of all the relevant evidence to make informed decisions and policy. The new chapter 'Identifying, synthesising and analysing evidence' highlights the importance of systematic review, and how and why these methods are used. As methods of analysis continue to develop, the chapter on 'Characterising, reporting and interpreting uncertainty' introduces the reader to recent methods of analysis and why characterizing uncertainty matters for health care decisions. The fourth edition of Methods for the Economic Evaluation of Health Care Programmes has been thoroughly revised and updated, making it essential reading for anyone commissioning, undertaking, or using economic evaluations in health care, including health service professionals, health economists, and health care decision makers.

The third volume in the Handbooks in Health Economic Evaluation series, this book provides the reader with a comprehensive set of instructions and examples of how to perform an economic evaluation of a health intervention. It focuses solely on cost-effectiveness analysis in health care. The book is developed out of the Advanced Methods of Cost-Effectiveness Analysis course taught at the University of Oxford and the four main sections mirror the four principal components of the course: Outcomes, Costs, Modelling using decision trees and Markov models, and Presenting cost-effectiveness results.&L ABOUT THE SERIES Series editors Alastair Gray and Andrew Briggs Economic evaluation of health intervention is a growing specialist field, and this series of practical handbooks tackles, in depth, topics superficially addressed in more general economics books. Each volume includes illustrative material, case histories and worked examples to encourage the reader to apply the methods discussed, with supporting material provided online. The series is for health economists in academia, the pharmaceutical industry and the health sector, those on advanced health economics courses, and health researchers in associated fields.

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