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Using Cost-effectiveness Analysis to Improve Health Care CRC Press

Much evidence suggests that the US does not achieve good value for its health care spending. This book provides a unique perspective on this problem by considering the economic, social, political, and ethical factors that contribute to it, and by seeking to show how experience can guide better policy making in the future.

Statistical Analysis of Cost-Effectiveness Data Oxford University Press

Promoting human health and safety by reducing exposures to risks and harms through regulatory interventions is among the most important responsibilities of the government. Such efforts encompass a wide array of activities in many different contexts: improving air and water quality; safeguarding the food supply; reducing the risk of injury on the job, in transportation, and from consumer products; and minimizing exposure to toxic chemicals. Estimating the magnitude of the expected health and longevity benefits and reductions in mortality, morbidity, and injury risks helps policy makers decide whether particular interventions merit the expected costs associated with achieving these benefits and inform their choices among alternative strategies. Valuing Health for Regulatory Cost-Effectiveness Analysis provides useful recommendations for how to measure health-related quality of- life impacts for diverse public health, safety, and environmental regulations. Public decision makers, regulatory analysts, scholars, and students in the field will find this an essential review text. It will become a standard reference for all government agencies and those consultants and contractors who support the work of regulatory programs.

Cost Effectiveness Modelling for Health Technology Assessment Routledge

There are not enough resources in health care systems around the world to fund all technically feasible and potentially beneficial health care interventions. Difficult choices have to be made, and economic evaluation offers a systematic and transparent process for informing such choices. A key component of economic evaluation is how to value the benefits of health care in a way that permits comparison between health care interventions, such as through costs per quality-adjusted life years (QALY). Measuring and Valuing Health Benefits for Economic Evaluation examines the measurement and valuation of health benefits, reviews the explosion of theoretical and empirical work in the field, and explores an area of research that continues to be a major source of debate. It addresses the key questions in the field including: the definition of health, the techniques of valuation, who should provide the values, techniques for modelling health state values, the appropriateness of tools in children and vulnerable groups, cross cultural issues, and the problem of choosing the right instrument. This new edition contains updated empirical examples and practical applications, which help to clarify the readers understanding of real world contexts. It features a glossary containing the common terms used by practitioners, and has been updated to cover new measures of health and wellbeing, such as ICECAP, ASCOT and AQOL. It takes into account new research into the social

weighting of a QALY, the rising use of ordinal valuation techniques, use of the internet to collect data, and the use of health state utility values in cost effectiveness models. This is an ideal resource for anyone wishing to gain a specialised understanding of health benefit measurement in economic evaluation, especially those working in the fields of health economics, public sector economics, pharmacoeconomics, health services research, public health, and quality of life research.

The Implications of Cost-effectiveness Analysis of Medical Technology Oxford University Press

This book contains a collection of works showcasing the latest research into global health economics conducted by leading experts in the field from the Centre for Health Economics (CHE) at the University of York and other partner research institutions. Each chapter focuses upon an important topic in global health economics and a number of separate research projects. The discussion delves into health care policy evaluation; economic evaluation; econometric and other analytic methods; health equity and universal health coverage; consideration of cost-effectiveness thresholds and opportunity costs in the health sector; health system challenges and possible solutions; and others. Case study examples from a variety of low- and middle-income countries (LMIC) settings are also showcased in the final part of this volume. The research presented seeks to contribute toward increasing understanding on how health policy can be enhanced to improve the welfare of LMIC populations. It is strongly recommended for public health policymakers and analysts in low- and middle-income country settings and those affiliated to international health organizations and donor organizations.

Cost-Effectiveness in Health and Medicine CRC Press

This book provides the reader with a comprehensive set of instructions and examples of how to perform an economic evaluation of a health intervention, focusing solely on cost-effectiveness analysis in healthcare.

Applied Methods of Cost-Benefit Analysis in Health Care CRC Press

This second edition of Cost Effectiveness Analysis in Health reviews issues and methods of assessing health care technologies and related programs. It emphasizes methods to perform economic evaluations, such as cost-effectiveness and cost-benefit analysis; methods to assess efficacy, effectiveness, and safety of health care technologies; effectiveness research; and applications to clinical and public policy. The book provides in-depth discussion of the uses and conducting of cost-effectiveness analyses (CEAs) as decision-making aids in public health, health services, and medicine. It explores cost-effectiveness in the context of societal decision making for resource allocation purposes. Chapter topics include: Defining and explaining cost-effectiveness, principles of cost-effectiveness analysis, how to develop a research project, working with costs, probabilities and models, calculating life expectancy, working with health-related quality of life measures, calculating quality-adjusted life years, conducting a sensitivity analysis, preparing your study for publication, working with data, and finding the data you need. "For instructors, data sets and other ancillary materials are freely available at <http://www.pceo.org/>."

Cost-Effectiveness Modelling Using Patient-Level Simulation OUP Oxford

Cost-effectiveness analysis is becoming an increasingly important tool for decision making in the health systems. Cost-Effectiveness of Medical Treatments formulates the cost-effectiveness analysis as a statistical decision problem, identifies the sources of uncertainty of the problem, and gives an overview of the frequentist and Bayesian statistical approaches for decision making. Basic notions on decision theory such as space of decisions, space of nature, utility function of a decision and optimal decisions, are explained in detail using easy to read mathematics. Features Focuses on cost-effectiveness analysis as a statistical decision problem and applies the well-established optimal statistical decision methodology. Discusses utility functions for cost-effectiveness analysis. Enlarges the class of models typically used in cost-effectiveness analysis with the incorporation of linear models to account for covariates of the patients. This permits the formulation of the group (or subgroup) theory. Provides Bayesian procedures to account for model uncertainty in variable selection for linear models and in clustering for models for heterogeneous data. Model uncertainty in cost-effectiveness analysis has not been considered in the literature. Illustrates examples with real data. In order to facilitate the practical implementation of real datasets, provides the codes in Mathematica for the proposed methodology. The motivation for the book is to make the achievements in cost-effectiveness analysis accessible to health providers, who need to make optimal decisions, to the practitioners and to the students of health sciences. Elías Moreno is Professor of Statistics and Operational Research at the University of Granada, Spain, Corresponding Member of the Royal Academy of Sciences of Spain, and elect member of ISI. Francisco José Vázquez-Polo is Professor of Mathematics and Bayesian Methods at the University of Las Palmas de Gran Canaria, and Head of the Department of Quantitative Methods. Miguel Ángel Negrín is Senior Lecturer in the Department of Quantitative Methods at the ULPGC. His main research topics are Bayesian methods applied to Health Economics, economic evaluation and cost-effectiveness analysis, meta-analysis and equity in the provision of healthcare services.

Measuring and Valuing Health Benefits for Economic Evaluation Jossey-Bass

The book is intended for users of health care cost-effectiveness analysis--health care policy authorities, researchers, students, and others--who wish to know and understand the discipline's theoretical foundations. The decision rules by which public health care agencies can choose the most socially beneficial--here called absolutely cost-effective--treatments to provide to or insure for their patient communities are stated in the book. The rules are derived algebraically from standard utilitarian welfare premises and two different models of an agency's optimizing behavior. They are presented equivalently with incremental cost-effectiveness ratios and net benefits defined as decision variables. The methods and problems of probabilistic cost-effectiveness analysis are discussed, and simple statistical tests on net benefits variables are proposed for making probabilistic assessments of the absolute cost-effectiveness of new treatments.

Bayesian Cost-Effectiveness Analysis of Medical Treatments Handbooks in Health Economic E This book trains the next generation of scientists representing different disciplines to leverage the data generated during routine patient care. It formulates a more complete lexicon of evidence-based recommendations and support shared, ethical decision making by doctors with their patients. Diagnostic and therapeutic technologies continue to evolve rapidly, and both individual practitioners and clinical teams face increasingly complex ethical decisions. Unfortunately, the current state of

medical knowledge does not provide the guidance to make the majority of clinical decisions on the basis of evidence. The present research infrastructure is inefficient and frequently produces unreliable results that cannot be replicated. Even randomized controlled trials (RCTs), the traditional gold standards of the research reliability hierarchy, are not without limitations. They can be costly, labor intensive, and slow, and can return results that are seldom generalizable to every patient population. Furthermore, many pertinent but unresolved clinical and medical systems issues do not seem to have attracted the interest of the research enterprise, which has come to focus instead on cellular and molecular investigations and single-agent (e.g., a drug or device) effects. For clinicians, the end result is a bit of a "data desert" when it comes to making decisions. The new research infrastructure proposed in this book will help the medical profession to make ethically sound and well informed decisions for their patients.

Cost-benefit and Cost-effectiveness Analysis in Health Care Health Policy

This book provides an introduction to decision analytic cost-effectiveness modelling, giving the theoretical and practical knowledge required to design and implement analyses that meet the methodological standards of health technology assessment organisations. The book guides you through building a decision tree and Markov model and, importantly, shows how the results of cost-effectiveness analyses are interpreted. Given the complex nature of cost-effectiveness modelling and the often unfamiliar language that runs alongside it, we wanted to make this book as accessible as possible whilst still providing a comprehensive, in-depth, practical guide that reflects the state of the art - that includes the most recent developments in cost-effectiveness modelling. Although the nature of cost effectiveness modelling means that some parts are inevitably quite technical, across the 13 chapters we have broken down explanations of theory and methods into bite-sized pieces that you can work through at your own pace; we have provided explanations of terms and methods as we use them. Importantly, the exercises and online workbooks allow you to test your skills and understanding as you go along.

Global Health Economics: Shaping Health Policy In Low- And Middle-income Countries

National Academies Press

Cost-effectiveness analysis (CEA) is increasingly utilized as a tool for decision makers to efficiently allocate scarce resources in health care. Cost-effectiveness analyses use data from a variety of sources to simulate what the cost, benefits and harms will be of choosing between different interventions for a given clinical scenario. In the last 20 years cost-effectiveness has become increasingly more quantitative, relying heavily on theory and methods from many fields including statistics, engineering, economics, psychology and of course, medicine. As models become more realistic, complex and relevant to health decisions, the methodological rigor and principles underling their findings are paramount. This dissertation presents work on three methodologic improvements to compute inputs to future cost-effectiveness studies. Each paper presents a problem frequently encountered when conducting a CEA, and proposes a novel solution. The first is a methodology for estimating the cost of pharmaceuticals when conducting a CEA from the health sector or societal payer's perspective. This method, which relies on publicly available data should improve transparency and consistency between studies when costing a difficult to estimate parameter. The next paper presents an approach to control for unobserved sources of variation in longitudinal

estimates of cost of care of a population, adapting a statistical methodology popular in other disciplines, latent class growth mixture models, to a CEA context. Having unobserved sources of variation is often ignored by models informing CEA, and the acknowledgment that this is a problem, and in certain circumstance can be controlled for, benefits future CEAs. The final paper improves on a recent methodologic development in CEA, network meta-analysis of survival curves, and proposes how to best utilize this methodology in CEA. It provides a tutorial on the method offering recommendations for how to derive base case and uncertainty estimates from the complex statistical procedure. All three papers make a marginal improvement to an area in CEA; their adoption into standard practice can move the field forward and inform better value based decision making in health care.

Making Choices in Health John Wiley & Sons

A unique, in-depth discussion of the uses and conduct of cost-effectiveness analyses (CEAs) as decision-making aids in the health and medical fields, this volume is the product of over two years of comprehensive research and deliberation by a multi-disciplinary panel of economists, ethicists, psychometricians, and clinicians. Exploring cost-effectiveness in the context of societal decision-making for resource allocation purposes, this volume proposes that analysts include a "reference-case" analysis in all CEAs designed to inform resource allocation and puts forth the most explicit set of guidelines (together with their rationale) ever defined on the conduct of CEAs. Important theoretical and practical issues encountered in measuring costs and effectiveness, evaluating outcomes, discounting, and dealing with uncertainty are examined in separate chapters. Additional chapters on framing and reporting of CEAs elucidate the purpose of the analysis and the effective communication of its findings. Cost-Effectiveness in Health and Medicine differs from the available literature in several key aspects. Most importantly, it represents a consensus on standard methods--a feature integral to a CEA, whose principal goal is to permit comparisons of the costs and health outcomes of alternative ways of improving health. The detailed level at which the discussion is offered is another major distinction of this book, since guidelines in journal literature and in CEA-related books tend to be rather general--to the extent that the analyst is left with little guidance on specific matters. The focused overview of the theoretical background underlying areas of controversy and of methodological alternatives, and, finally, the accessible writing style make this volume a top choice on the reading lists of analysts in medicine and public health who wish to improve practice and comparability of CEAs. The book will also appeal to decision-makers in government, managed care, and industry who wish to consider the uses and limitations of CEAs.

Cost-Effectiveness in Health and Medicine Oxford University Press

The statistical analysis of cost-effectiveness data is becoming increasingly important within health and medical research. Statistical Analysis of Cost-Effectiveness Data provides a practical book that synthesises the huge amount of research that has taken place in the area over the last two decades. Comprising an up-to-date overview of the statistical analysis of cost-effectiveness data, the book is supported by numerous worked examples from the author's own experience. It has been written in a style suitable for medical statisticians and health care professionals alike. Key features include: an overview of statistical methods used in the analysis of cost-effectiveness data. coverage of Bayesian methodology. illustrated throughout by worked examples using real data. suitability for health care

professionals with limited statistical knowledge. discussion of software used for data analysis. An essential reference for biostatisticians and health economists engaged in cost-effectiveness analysis of health-care interventions, both in academia and industry. Also of interest to graduate students of biostatistics, public health and economics.

Designing and Conducting Cost-Effectiveness Analyses in Medicine and Health Care Handbooks in Health Economic Evaluation

Professor Brent's book is a superb and much-needed text in the field of health care evaluation. The economic approaches for appraisal of health care programs are presented with greater clarity than any other available text. A comprehensive review of cost-minimization, cost-effectiveness analysis, cost utility analysis, and cost benefit analysis is given in a simple and yet very insightful manner that pointedly demonstrates their fundamental principles, methodological requirements, and common linkages for evaluation research. The book skilfully merges theory and application of the economic analyses of health care, combining the latest literature with adroit illustrations of required methodologies and easily understandable examples that inform the reader of how empirical evaluation research should be conducted. Major evaluation concerns about the appropriateness of discounting health benefits, the appropriate discount (interest) rate, and intangible benefits and costs are critically appraised. Not only is the criterion of economic efficiency of health care programs explored directly and with lucidity, but the important social question of the equity of health interventions is also assessed straightforwardly. Students of health care as well as health policy analysts and administrators are provided with a considerable solid foundation for undertaking evaluation of complex health care issues. In short, Professor Brent has even made the economics of health care evaluation accessible to non-economists in the health care field. Paul L. Solano, University of Delaware, US Cost benefit analysis is the only method of economic evaluation which can effectively indicate whether a health care treatment or intervention is worthwhile. This book attempts to build a bridge between cost benefit analysis, as developed by economists, and the health care evaluation literature which relies on other evaluation approaches such as cost-minimization, cost-effectiveness analysis and cost utility analysis. Robert Brent explains the many different ways in which these other valuation techniques can be converted into cost benefit analysis and examines both the traditional (human capital) and modern (willingness to pay) approaches. Case studies are used throughout to explain and illustrate the various methodologies being examined. The author follows an applied economics approach, in which methods and ideas are evaluated according to practicability and not according to their theoretical purity. Ultimately, he resolves a number of disputes and makes some new, but subtle, contributions by reinterpreting, correcting and extending existing work. The book covers the topic in an accessible manner, from the foundations to the frontiers of the field, and clearly explains all the necessary economic principles along the way. Cost Benefit Analysis and Health Care Evaluations will be invaluable to students and researchers of economics, public policy and health care policy, as well as policymakers and health care practitioners. It can also be used as a comprehensive introductory text by anyone with an interest in cost benefit analysis.

Distributional Cost-Effectiveness Analysis World Scientific

It is becoming increasingly important to examine the relationship between the outcomes of a clinical

trial and the costs of the medical therapy under study. The results of such analysis can affect reimbursement decisions for new medical technologies, drugs, devices or diagnostics. It can aid companies seeking to make claims about the cost-effectiveness of their product, as well as allowing early consideration of the economic value of therapies which may be important to improving initial adoption decisions. It is also vital for addressing the requirements of regulatory bodies. *Economic Evaluation in Clinical Trials* provides practical advice on how to conduct cost-effectiveness analyses in controlled trials of medical therapies. This new edition has been extensively rewritten and revised; topics discussed range from design issues such as the types of services that should be measured and price weights, to assessment of quality-adjusted life years. Illustrative materials, case histories and worked examples are included to encourage the reader to apply the methods discussed. These exercises are supported with datasets, programmes and solutions made available online.

Cost-Effectiveness Analysis in Health Oxford University Press

With ever-rising healthcare costs, evidence generation through Health Economics and Outcomes Research (HEOR) plays an increasingly important role in decision-making about the allocation of resources. Accordingly, it is now customary for health technology assessment and reimbursement agencies to request for HEOR evidence, in addition to data from clinical trials, to inform decisions about patient access to new treatment options. While there is a great deal of literature on HEOR, there is a need for a volume that presents a coherent and unified review of the major issues that arise in application, especially from a statistical perspective. *Statistical Topics in Health Economics and Outcomes Research* fulfils that need by presenting an overview of the key analytical issues and best practice. Special attention is paid to key assumptions and other salient features of statistical methods customarily used in the area, and appropriate and relatively comprehensive references are made to emerging trends. The content of the book is purposefully designed to be accessible to

readers with basic quantitative backgrounds, while providing an in-depth coverage of relatively complex statistical issues. The book will make a very useful reference for researchers in the pharmaceutical industry, academia, and research institutions involved with HEOR studies. The targeted readers may include statisticians, data scientists, epidemiologists, outcomes researchers, health economists, and healthcare policy and decision-makers.

The Implications of Cost-effectiveness Analysis of Medical Technology Oxford University Press

"This book provides the reader with an up-to-date guide to performing a cost-benefit analysis (CBA) of a health care intervention"--Quatrième de couverture.

The Implications of Cost-effectiveness Analysis of Medical Technology Oxford University Press, USA

"IEA, International Epidemiological Association, Wellcome Trust."

THEORIES OF HEALTH CARE COST-E Oxford University Press, USA

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.

Health System Efficiency Jossey-Bass

In this book the authors explore the state of the art on efficiency measurement in health systems and international experts offer insights into the pitfalls and potential associated with various measurement techniques. The authors show that: - The core idea of efficiency is easy to understand in principle - maximizing valued outputs relative to inputs, but is often difficult to make operational in real-life situations - There have been numerous advances in data collection and availability, as well as innovative methodological approaches that give valuable insights into how efficiently health care is delivered - Our simple analytical framework can facilitate the development and interpretation of efficiency indicators.