Medicine Worth Paying for: Assessing Medical Innovations

Howard S. Frazier and Frederick Mosteller (Eds)

Cambridge, MA, Harvard University Press, 1995, xiv + 311 pp., US$39.95, ISBN 0-674-56362-X

Does immunization against measles work? Does treating depression with drugs work better than receiving counselling? Does surgery through a keyhole cut for removing gallstones work better than through a big open cut of the abdomen? How can one improve the health care system? These and other questions are carefully examined by this succinct and interesting book. It is well written, though the language is somewhat technical for a person not familiar with medical jargon.

Innovation

The word innovation has become a clich—meaning anything new. I feel that *assessing medical innovations* was inserted to jazz up the title of the book, which is really about medical technology assessment. Hence, this book is concerned with the assessment of not only new but also established medical technology, practice and service delivery. The assessment is not only whether medical technology is effective in improving the health of patients but also whether it is cost effective, and having a beneficial effect on the quality of life of patients. Certainly the book is not assessing the process of medical innovation in terms of transferring new technology to industry, nor the origin and commercial development of new ideas.

Medical Technology Assessment

The introduction refreshed my memory on different aspects of medical technology assessment. The overall aim of medical technology assessment is to maximize the good accomplished by the health care system, especially in the light of increasing restrictions in government funding of health care. They describe in detail one of the most important tools used in medical technology assessment, which is the randomized controlled trial. Once people with the same illness have been recruited to such trials, they are randomly assigned either to receive the new treatment or to a comparison group known as the control group. People in the control group commonly receive the current standard treatment or no treatment. The people in both groups are followed and an assessment is made at the end of the study as to whether the new treatment is better or worse than the treatment received by the control group. Such trials are often very costly as the benefit of most treatments is moderate and to prove that they are better often requires a large number of participants ranging from hundreds to thousands of people. For example, a 10 year trial described in the book was looking at laser treatment of eyes to prevent blindness for people with diabetes and cost US$10 million. As a consequence of the trial, people with diabetes are now encouraged to have a regular examination of their eyes by an ophthalmologist. It is estimated that this screening will save about a quarter of a billion US dollars in programs for the blind over the next 20 years.

The focus of the book reflects the background of the contributors, who mainly originate from the School of Public Health at Harvard University. They include academic epidemiologists, dentists, anaesthetists, ophthalmologists, biostatisticians, nurses, paediatricians, psychiatrists and psychologists. In other words, the authors tend

to have a medical and public health background. In addition, the book has a very US centric focus although it does touch on European, especially United Kingdom based research. Despite the US bias the discussion has general relevance. As the preface states, the book is meant for readers interested in health policy, scientists studying health services, health professionals and lay people wishing to improve or better understand the health care system.

Series of Case Studies

The book covers 14 topics or chapters from different authors bound together by a background section and a conclusion section written by the editors. Each chapter begins and ends with a note from the editors, which acts as a summary and helps the reader to pick out topics of personal interest. To facilitate understanding for non-medical readers each chapter starts by explaining the area of medicine with which it is concerned. The topics are combined into a number of themes exploring:

- methods of improving physician performance;
- perverse financial incentives; for example, in the US, where the federal government will cover the high cost of kidney transplants for everyone. Perversely, however, the government does not cover the cost of preventive medical care in uninsured people with diabetes or high blood pressure which are the main causes of kidney failure leading to kidney transplants in the first place;
- patient empowerment, which reveals that educating patients about post-operative pain before surgery and allowing them to control the treatment of their pain after surgery, gives better pain control and reduces the length of their stay in hospital;
- monitoring and delivering care, examines how to improve the delivery of care to people who are less likely to access health care, such as people from lower socio-economic groups, through multi-pronged social interventions;
- improving the delivery of routine care, in a cost effective manner, such as routine dental care which has dramatically reduced the number of people who have no teeth;
- issues of quality of life and cost effectiveness were examined by looking at joint replacements for osteoarthritis, which have been shown to improve quality of life. As these people are older they are unlikely to re-enter the workforce and hence their rehabilitation is largely of individual rather than societal benefit. Given that these operations cost about the same as an open-heart operation and are largely publicly funded in Australia, it raises issues of equity, particularly intergenerational equity;
- the importance of looking for unanticipated effects of treatment through post-marketing surveillance of drugs once they have been released onto the market; and,
- administrative innovations which highlight the value of assessing not only new treatments but also changes in health administration on the health of patients. An example used is the threefold reduction in deaths from anaesthesia during surgery in the 1980s due to the issuing of *mandatory* standards for patient monitoring during an anaesthetic, rather than the more typical *guidelines* or *recommended practices.*

I particularly enjoyed reading the final part 'Conclusions and Recommendations' written by the two editors. It examined among other things the current trend to evidence-based medicine, especially the Cochrane Collaboration, which has grown exponentially in the last decade. The Collaboration supports researchers who are coming together in groups to assess all the medical evidence on a particular topic, such as obstetrics. They are gathering all the clinical trials carried out in medicine and analysing the results in a systematic manner and summarizing them in a readily usable form. Their

aim is to expedite the transfer of results of research into clinical practice. Among other issues, this section also focused on improving the efficiency and reducing the cost of conducting medical trials, including the idea of incorporating trials as part of routine clinical practice.

Overall, this book is well presented. The tables, graphs and illustrations are clear, relevant and aid in understanding the text. In order to broaden the readership it may have been worthwhile to include summary tables, diagrams and photos. However, this would have greatly increased the cost of producing this book. The indexing was somewhat brief but relevant. The number of references are limited ranging from 3 to 25 per chapter (average 14) but they tend to be core and fairly current references. Thus, this book provides a starting point for any review of the literature in medical technology assessment. The review of the scientific literature in the book is critical of studies and certainly not given to uncritical quoting of their results and conclusions, which tends to occur in medical textbooks. The writing in the book is concise and clear. The authors try to avoid jargon and explain concepts in plain English, however the complexity of the area makes this almost impossible. A person not familiar with medical terminology will probably find it a little hard going.

This book is not comprehensive enough to be a textbook on medical technology assessment. It certainly is a good read for anyone, with some knowledge of the health area, wishing to have an overview of medical technology assessment or wishing to explore some of the current issues in health care.

Eugen Mattes
University of Western Australia
Perth, Australia

Technology and Privacy: The New Landscape

Philip E. Agre and Marc Rotenberg (Eds)

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Privacy on the Line: The Politics of Wiretapping and Encryption

Whitfield Diffie and Susan Landau

Cambridge, MA, MIT Press, 1998, ix + 342 pp., US $25.00, ISBN 0-262- 04167-7 (hbk)

Technology and Privacy: The New Landscape defines a landscape of privacy and technology that is both daunting and inspiring. Ten well-chosen essays explore the issues and opportunities that confront policy-makers, professionals and privacy advocates in new technologies.

Some of these issues are in well-trodden territory. Privacy advocates are familiar with the real-time privacy risks associated with increased bandwidth and computer processing power and the growth of global information networks. Privacy advocates are also confronted by increased commodification of personal information, a lack of consumer awareness of the economic value of their personal data and disempowerment of individuals in controlling their personal information.

A theme of the volume is the observation that there is a global trend for minimum privacy protection standards. While encouraging, we should be sceptical that this will result in a satisfactory global framework. One contributor, Mayer Schönberger describes