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Economic evaluation and EBM

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Abstract
In the world of textbook economics, the "sovereign" consumer weighs up the (freely available) evidence on the costs, risks, harms and benefits before purchasing health care. The value that consumers then attach to the evidence and the expected outcomes is revealed through their purchasing decisions in the market. Ultimately, the consumer's decision represents the best or benefit maximising choice given the available information. The notion of this evidence-based market is however a long way from the reality of health care in Australia. Consumers (that is, patients) generally do not have current best evidence to hand. The same could be said of their agent (doctor) prior to worldwide interest in evidence-based medicine (especially through the Cochrane Collaboration). If the market is not capable of integrating external clinical evidence from systematic research and clinical expertise such that consumers (or their agents for that matter) can assess the quality of information easily then a mechanism is needed to perform that function. One such mechanism is economic evaluation. This approach describes a set of techniques, such as cost-effectiveness analysis and cost-benefit analysis, that require the systematic comparison of the costs and benefits of the full range of health care activities. Economic evaluation performs what individual consumers would otherwise do in a competitive market; it weighs up the costs and benefits of the available choices. That still leaves many questions about whose values count in the aggregation of costs and benefits and whether the value of the total is greater than the sum of individual values. Nonetheless, if one of the aims of a health care system is to be efficient, then choosing those programs that provide the greatest benefits for the resources available will delivery an efficient allocation of health care resources. Allocating health care resources is seldom simply a matter of choosing efficient programs; the 'fairness' or equity of resource allocation is also a desirable economic goal. The aim of this paper is to provide a brief account of what economic evaluation has achieved and could achieve in cancer control within an EBM environment. The first part looks at funding for health services based on evidence of economic evaluation. The following section of the paper highlights some innovative research into the use of EBM to elicit consumer preferences for colorectal cancer screening.

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ECONOMIC EVALUATION AND EBM

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Introduction

In the world of textbook economics, the "sovereign" consumer weighs up the costs and benefits before purchasing health care. The reality is that what happens in the real world is that the expected outcomes are revealed through their purchasing decisions. In the market, ultimately, the consumer's decisions are represented by the choices he or she achieves from the available information. The notion of this evidence-based market is however still very much an issue in health care in Australia. Consumers (that is, patients) generally do not have current best evidence to hand. The same could be said of their agents (that is, doctors). This is why the development of evidence-based medicine (especially through the Cochrane Collaboration). If the market is not capable of integrating external clinical evidence from systematic reviews, the expected outcomes of consumers (or their agents for that matter) can assess the quality of information easily then a mechanism is needed to perform that function. One such mechanism is economic evaluation.

This approach describes a set of techniques, such as cost-effectiveness analysis and cost-benefit analysis, that require the systematic integration of relevant evidence about all costs and outcomes of the full range of health care activities. Economic performance evaluates what individual consumers would otherwise do in a competitive market. In that market, economic evaluation tends to focus on the use of current best evidence for clinical guidelines. For example, in 1987, the Pharmaceutical Benefits Advisory Committee (PBAC) to 'take into account comparative effectiveness and cost in recommending drugs as pharmaceutical benefits...'.

In this example, the relationship has been tested that the government, in order to fund health services, would be much more cost-effective for the consumer, and then asked, "What would you prefer?" Program A or Program B or No Screening?

Using Evidence to elicit Consumer Preferences for Cancer Screening and Treatment

In December 1996, The Clinical Oncology Society of Australia (COSA) and the Australian Cancer Network (ACN) sponsored a process to develop evidence-based guidelines for the prevention, detection, and management of colorectal cancer (CRC). Guidelines are a necessary step in improving medical decision making. The question then arises, how do patients and citizens best use evidence-based information for their own treatment and screening choices? Interest in measuring patient preferences for cancer screening and treatment choices, the use of decision aids and communicative information between doctor and patient has grown with the worldwide interest in evidence-based medicine. With my colleagues Jeanette Ward, Michael Solomon and Leonie Short, I am conducting a study to elicit consumer preferences for colorectal cancer screening. A measurement technique, known as discrete choice modelling, is being used to provide a qualitative estimate of what consumers say a CRC screening and its outcomes matter most to citizens and by how much. The technique presents an individual with a series of pairwise choices, each of which contains two options, A and B, offering different combinations of harms and benefits. An example of a typical scenario is presented in Figure 1.

Q1. Could you please compare the two programs and tell me which would you prefer?

Example Scenario: Program A: 5% risk of colonoscopy every 2 years for 10 years. Blood test every second year for 10 years. In Figure 1, the subject is being asked to trade off extra 6 bowel cancer deaths averted for an extra 10,300 colonoscopies (due to a false positive) with having colonoscopies. Subjects are given a lay description of what is involved in the tradeoff process and in having a colonoscopy. By altering the level of harms and benefits in subsequent choice questions, a point is reached where the respondent is indifferent to a combination of harms and benefits. The process of trading involves weighing evidence presented in each of the scenarios.

The information contained in each of the scenarios is based on the mean value and 95% confidence limits for the harms and benefits for the CRC screening options. The information is presented in Table 1.

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PSYCHOSOCIAL CARE AND SUPPORT FOR CANCER PATIENTS

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The diagnosis and treatment of cancer can present a major challenge to patients in both the short and long-term, and anxiety and depression are not uncommon responses. Reported prevalence rates of psychological distress in cancer patients range from 50-60%, in comparison to a 5.8% prevalence rate of depression in the general population, estimated in the US. A considerable amount of research has focused on identifying concerning optimal methods to prevent and ameliorate this distress.

Studies on psychosocial care and support for cancer patients have tended to focus on either (i) the provision of support and counselling or (ii) the provision of information and facilitation of decision-making. Psychosocial clinical practice guidelines encompassing both these areas have recently been produced by the National Breast Cancer Centre, and are currently in use within the major public hospitals of New South Wales and the Hunter New England \( {\text{HNE}} \). While focusing on breast cancer, much of the content of these guidelines is generalisable to other cancer contexts.

Support by the both treatment team and specialist providers, such as psychiatrists, psychologists and social workers, has been widely studied. There are now a number of meta-analyses indicating the effects of support on both patients and families. For example, a meta-analysis of 45 RCTs with adults with cancer demonstrated that psychoeducational therapy had on average a significant improvement of 12% in emotional distress, 19% in treatment satisfaction and 15% in treatment- and disease-related symptoms and 14% in overall improvement in their quality of life, compared to those not receiving psychological therapy.

Greater effects have been observed when therapies were provided over longer periods, and conducted by more highly trained personnel, such as a specifically trained counsellor, nurse, psychologist or social worker. However, few differences have been observed between different types of therapy (such as cognitive therapy, interpersonal therapy or psycho-educational therapy) or formats of therapy (such as group or individual sessions), suggesting that features encompassing the therapeutic alliance, empathy and rapport, reassurance, and affirmative care, have the greatest impact.

More controversially, some naturalistic, prospective studies have evaluated the effects of coping style and length of survival, and a number of randomized controlled trials have produced a higher level of evidence for the beneficial effects of psychological interventions. Spiegel et al. reported that women with metastatic breast cancer randomised to a psychosocial intervention group survived for a significantly longer time than women in the control group. Fawzy et al. reported significant changes in immunological...