

Economic Evaluation and Mental Health: Sparse Past . . . Fertile Future?

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Abstract

Background: Demands for economic inputs to mental health policy-making, practice decisions and research evaluations have grown considerably in recent years, but the overall supply response has been modest and uneven.

Aims: This paper examines the key historical phases in the development of mental health economics research, and what they imply for the way economics is received and employed. Focusing on the quest for cost-effectiveness, the paper considers challenges for mental health economics.

Methods: An informal review of the growing demand for mental health economics (and how that demand has been expressed), and how economists have responded.

Results: Five historical development phases characterize this growth. Initially, the dominant feature is innocence or neglect of scarcity. Cost measures are rarely calculated, cost-effectiveness is not part of the decision-making lexicon and the potential for inefficiency is huge.

In the second phase, innocence turns to criticism of attempts to introduce resource rationality, and many clinicians actively reject economics. Health is seen as priceless, and not to be compromised by the pursuit of efficiency.

After a period of reluctance there follows impetuosity as the need for economic insights is recognized, but the search for data is desperate and indiscriminating. Poor quality research is conducted, with the risk that decisions are misinformed and perhaps damaging. Once again, resources are inappropriately used.

Next follows the constructive development phase: previous mistakes are appreciated and the standards of evaluation improve markedly. Studies are better designed, more likely to be integrated into clinical or policy evaluations, carefully conducted and sensibly interpreted. Inefficiency should be reduced, along with inequity.

Finally, there is perhaps a nirvana-like fifth phase in which sophisticated economic studies are widely undertaken, where systematic reviews and meta-analyses help to reveal the wider picture and where findings are readily available to clinicians, managers and providers. Whether such a stage is attainable is open to question.

Discussion: Although the number and sophistication of economic evaluations have both increased noticeably over recent years, there remain imbalances. There is little economics evidence on care arrangements or treatments for dementia, most of the neuroses and the disorders of childhood and adolescence. There are many fewer good evaluations of psychological interventions than of drug treatments. Geographically, few economic evaluations are conducted outside Western Europe, North America or Australasia.

Implications for decision-makers and research: Many challenges

consequently face the next generation of mental health economics evaluations, both for research economists and for those health care decision-makers who find themselves increasingly having to draw on economics evidence. One challenge is to be fully aware that the information that economists can currently offer may fall short of what decision-makers need. The gap between the two must be fully appreciated. Building more comprehensive pictures of the cost and outcome consequences of different care policies and treatment interventions is one way to bridge this gap.

At the same time a sense of perspective must be maintained and promoted. For example, there is growing concern across the world about the high prices of new drugs, yet drug acquisition costs usually represent only a small proportion of total costs. Decisions sometimes appear to be disproportionately focused on small parts of the overall mental health care picture. A similar tendency prompts another challenge, which is to undertake and interpret research so as to overcome, or at least not to exacerbate, the boundary problems that characterize the multi-service, multi-agency reality of many mental health care systems.

The adequacy of short-term evaluations—which dominate our field—must be questioned in light of the chronicity of many mental health problems, and of their externality effects (including inter-generational transmission of problems). Although funding will always be a problem, longer-term evidence is needed. So, too, is research that looks at the reasons for inter-individual cost and outcome variations. Economic evaluations should also pay more attention to equity as well as efficiency as a criterion of improved resource allocation. Finally, more economic data should be gathered alongside and not after clinical data, particularly as economic assumptions often appear to drive key practice and policy changes. Copyright © 1999 John Wiley & Sons, Ltd.

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Introduction

The World Psychiatric Association holds its world congress every three years, most recently in Hamburg (1999) and Madrid (1996). A search through the congress abstracts on CD ROM revealed that 48 oral or poster presentations in Hamburg (47 in Madrid) included some discussion of 'costs' and 13 (1) of 'cost-effectiveness'. Comparable data for previous congresses are not readily accessible but, small though these recent numbers may look, they are probably somewhat larger than ever before. Looking at the abstracts for Hamburg and Madrid suggests that economics is now being deployed quite widely in patient-level evaluations of treatment modalities, care practices or broader policies. Sadly, the standard of work also varies quite widely.

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The growth of interest in, and demand for economic evaluations of mental health care arrangements can be illustrated in many ways, a set of conference abstracts being just one of them. Notwithstanding the quality variations, the growth is welcome, but raises questions and presents challenges. In this paper I want to identify some of these future challenges for people working in the field, but first I shall discuss the *past*, suggesting a brief history of how economic evaluations have been received and perceived, and the *present*, reflecting on current achievements and gaps.

The Past: A Brief History of Economics and Mental Health

There are perhaps five phases of historical development through which economics has travelled or is currently travelling as it gains in informed acceptance. (This very personal perspective on historical development was first presented at a conference in Verona, Italy.¹) Although this phasing may occur at different speeds, the order set out below appears to be common to many systems and countries. Some countries will still be at an early developmental stage, while others will have moved some distance.

Blissful Ignorance

The first phase is *the age of innocence*: scarcity is not recognized. The dominant assumption is that year-on-year budgetary growth will deal with perceived shortages and frictions within the care system. Although expenditure data are collected for the purposes of accounting and probity, they are not turned into cost measures of the kind recognized by economists, and certainly not into cost-effectiveness ratios. Outcome data might also be sparse. Although not recognized at the time, the consequences of this benign neglect of such key evaluative dimensions will be inefficiency and waste.

Evidence of such innocent optimism is not hard to find. A particularly good indication comes from the Cochrane Schizophrenia Group's Controlled Trials Register, used as the basis of their systematic reviewing. The first 2000 entries have been analysed by Adams *et al.*,² and trials with economics components identified by my colleague Adelina Comas. In fact, only 3% of these trials have an economics element (and in many cases the quality is dreadfully poor). The number and proportion of trials with an economic element has grown from 0 in the 1950s, to 1 (0.4%) in the 1960s, 11 (2.1%) in the 1970s, 15 (2.5%) in the 1980s and 35 (4.9%) in the 1990s.

Unbridled Criticism

In the second phase, the dominant behaviour is no longer innocence but aggression, but the outcome is the same: rejection of economics. Health is seen as priceless, and should be kept beyond the tainted reach of economists. Economic perspectives, and indeed also economists, are

(deliberately?) excluded from the evaluative endeavour. Again, obviously, few cost data are collected or scrutinized. Instead, either decisions are made on the basis of outcome (only) evaluations, or—more commonly—resources are allocated to those who shout loudest or who indulge in the most vigorous 'shroud waving'. Efficiency and health are again the victims.

The managed care debate in the US provides legion examples of this rejection of economic perspectives, with many clinicians and other decision-makers seeking to deny the relevance of cost-effectiveness criteria. Britain's health care system in the early years of Mrs. Thatcher's UK government of 1979 was similarly characterized by anti-economics sentiments as many health care professionals confused the pursuit of cost-effectiveness with the politics of monetarism-inspired public expenditure cutbacks.

Undiscriminating Utilization

If the second phase is the age of reluctance, then this third phase—which represents an improvement, but perhaps not much of one—could be called the age of impetuosity. The need for economics is at last recognized, but there is a desperate and seemingly indiscriminating search for cost information. Poor quality research is commissioned and conducted, and often inappropriate decisions are taken on the basis of dangerously partial, misleading conclusions. The flawed studies that characterize this third phase are, however, often beautifully presented as management consultancy companies discover new profit-making opportunities. There is a danger of misguided decision-making and inappropriately utilized resources.

Methodological imprecision, analytical naivety and terminological inexactitude are rampant. For example, one familiar terminological feature of this age of impetuosity is the high prevalence of 'cost-benefit analysis' labels to describe studies which are merely (incomplete) cost-offset calculations. More worryingly, the Cochrane register of schizophrenia trials reveals that few of the trials with economic components in the 1960s and 1970s employed methods which would be seen as satisfactory today. Indeed, few should have been accepted as satisfactory at the time.

Constructive Development

In the next phase—constructive development—many of the mistakes of previous years are now appreciated. There is appreciation of what economics can achieve, and also (importantly) of what it *cannot* achieve. Not surprisingly, therefore, this is the age in which the standards of economic evaluation improve to a level sufficient to generate widespread confidence in the findings. A greater proportion of those (greater number of) economic evaluations are well designed: they are more likely to be integrated into clinical or policy evaluations at an early design stage, carefully conducted and their results interpreted so as to be appropriately implemented. Inefficiency should be less. So, too, should inequity, which previous analyses purportedly addressing

economic questions have tended to neglect. In an 'age of enlightenment'—which is how this phase might grandly be characterized—equity and efficiency are more likely to be recognized as inter-connected.

In this fourth phase, the data-sparse modelling of earlier years (whose funders often had a vested interest in getting the 'right' results) is a thing of the past. Simulation models shift the balance towards real-world observational data and away from small Delphi panels or armchair assumptions. This fourth phase will also see more randomized controlled trials with good economics components, as well as naturalistic studies to complement them. Cost measures tend to be more comprehensive, whereas in earlier phases they were often confined to in-patient hospital admissions or health service costs. Outcome dimensions will also have improved to include health-related quality of life, patterns of employment and their productivity consequences and effects on caregivers and the wider society. Benefits might be measured in valid monetary terms, and sensible utility measures deployed.

Sublime Sophistication

The phase of constructive development is usually long and the path through it is usually challenging both to those undertaking economic evaluations and those seeking to use them. Some distance away, at the end of the research rainbow, is the fifth and final historical phase—an age of sublime expertise, erudition and wholeness. In this nirvana-like state, sophisticated economic studies are undertaken wherever they are appropriate, systematic reviews and meta-analyses reveal the wider picture, and all relevant findings are available to clinicians, managers and providers. Most importantly the findings of these are acted upon, and much of the seemingly endemic inefficiency and inequity are banished for ever. Well, one can dream . . .

The Present: The Search for Cost-Effectiveness

The present day clearly finds different health care systems, societies and countries at different development stages. Encouragingly, as noted earlier, the relevance of economics in health care decision-making is being appreciated more widely and from a position of 'informed consent'. This appreciation stems in part from recognition of what economics has to offer, but is more commonly a reaction to the high costs of mental disorders to the health care system, and the often higher costs to other parts of society. What frequently focuses the individual or corporate mind on the need for economic insights is not a philosophical awakening as to the permanence of scarcity and the pervasiveness of its consequences, but the more prosaic realization that many new and apparently effective treatments look rather more expensive than those they are intended to replace. (But, as discussed below, those doing the looking do not always take in the full picture.) In the context of perennial pressures on resources, which are now perhaps also more widely acknowledged, more and more stakeholders in mental health

care systems want economic evidence to guide their arguments, decisions and behaviours.

It would require a Herculean effort to summarize the state of economic evaluations in the mental health field, but a few comments might be pertinent. First, it is to the benefit of all concerned that economics has developed a *range* of evaluative tools, and also that there is a gradual move to attach labels *consistently* to them. Many methodological challenges remain, of course (see below), but it would be a pity to downplay the significant processual and methodological progress of recent years. Welcome improvements include early integration of economic evaluations into the design of trials, recognition that sample sizes may need to be larger to power tests of economic hypotheses compared to tests of clinical hypotheses, development of manageable tools for the monetary valuation of benefits, better understanding of how utility measures function in mental health evaluations (or maybe the development of mental health-sensitive utility scales) and improvements in statistical testing.

From the user's perspective there may be fewer grounds for congratulation since there remains a huge excess demand for economic insights. For example, there is very little economic evaluative evidence on alternative care arrangements or treatments in diagnostic areas such as dementia, most of the neuroses and the disorders of childhood and adolescence. Other relatively neglected topics are most psychological interventions in contrast to the rapidly growing number of drug studies.³ In contrast, schizophrenia and depression treatment have been relatively well provided for by economic evaluations.^{4,5} Looking at the situation geographically, very few economic evaluations are conducted outside Western Europe, North America or Australasia.

The Future: Issues and Challenges

Many challenges face the next generation of economic evaluations in mental health. In turning to the future, therefore, I want to focus on those challenges that, were they to be met, would be most likely to help us to move through the constructive development phase to approach sublime sophistication.

Mind the Gap

One challenge is to 'mind the gap'. In one sense, 'mind' is synonymous with 'beware': the unwary should beware the sometimes wide gap between the ideal and the feasible evaluative design. 'Mind' also is synonymous with 'guard', and it is the role of the economist to guard against unjustified conclusions being drawn from poorly conducted studies. People familiar with economic evaluations and evidence can more easily bridge the gap between the ideal and the feasible, and make sensible extrapolations from the evidence that is available to that which is wanted. A further gap is between the conceptual and the actual: for example: when economists' calculations of cost savings *in principle* have no real world equivalent *in practice*. In a phase of indiscriminating utilization, which is what many countries

of the world have now reached, minding the gap is an important job for economists.

Incomplete Pictures

A second challenge is to obtain more comprehensive pictures of the consequences of alternative care policies or treatment interventions. A common error, noted earlier, has been the incomplete measurement of the resource consequences of an illness or its treatment. Many early studies focused simply on in-patient admissions. Later studies looked at a wider range of health care costs, such as in-patient admissions, out-patient attendances and medication utilization. But mental health problems tend to impact upon many aspects of life and welfare, and not just for the person with the illness but also for their families and others. Evaluations should endeavour to address *all* of those dimensions, or to exclude them advisedly and transparently. Multi-dimensional outcome measures, comprehensive costs and patient satisfaction ratings are the logical corollaries.

There is a growing tendency in empirical evaluations to use preference-weighted, health-related quality of life measures as the primary—and sometimes the only—outcome indicator. The assessment of quality of life changes is a welcome development—not so many years ago almost no clinical evaluation in psychiatry included this dimension—and preference-weighted scales (such as the EuroQol or other QALY) have contributed greatly to our understanding of health outcomes in some clinical areas. But the tendency to rely *solely* on this indicator is worrying, especially if it is not particularly sensitive to the types and sizes of health status change observed in most mental health treatment areas.

A Sense of Perspective

A third challenge is to maintain a sense of perspective. In one respect this contradicts the previous invocation of comprehensiveness, for the research effort expended in tracking down every last penny of cost will usually be disproportionate to the value of the research. Moreover, stakeholders in mental health care systems may not need fully comprehensive cost pictures (for example) in order to make informed and appropriate decisions.

But there is another domain in which a sense of perspective must be sought—or urged upon others—which is in relation to new treatment modalities. There is growing concern about the high prices of new drugs, for example for schizophrenia, depression and Alzheimer's disease, yet drug acquisition costs usually represent only a small proportion of the total costs of treatment, and there is evidence that some of the newer drugs can generate expenditure savings in other parts of the health care system that more than outweigh the higher acquisition costs. Even then, maintaining a sense of perspective demands that the *cost-effectiveness* of treatment needs to be examined, not merely the costs or cost-offsets.

Boundary Problems

The multi-service, multi-agency reality of mental health care requires an understanding of the incentives and disincentives that operate at and across care system boundaries. Among the pertinent boundaries are those between primary and specialist care; between hospital and community settings; between psychiatry and other medical specialties; between health services and social (welfare) services; between the care and criminal justice systems; between (formal) organizations and (informal) family caregivers and between the public and private sectors. Among the difficulties that can occur are that:

- boundaries are sometimes disputed;
- they are blurred;
- they shift with organizational change;
- they represent barriers in the way of information sharing or joint decision-making;
- or changes in circumstances on one side of the boundary cause resources and people to move across it to the detriment of some stakeholders.

The challenge is to ensure that economic evaluations are not designed or conducted so as to exacerbate these already quite major difficulties, and especially not to produce partial evidence that might create more perverse incentives than already characterize many decision-making structures.

Long-term Consequences

Questions about the adequacy of the standard short-term evaluation are raised by the chronicity of many mental health problems, together with their externality effects and their inter-generational transmission potential. Mental health problems are rarely short-term, one-off events, and economic and other evaluations should be designed with this in mind. Obtaining the funding to evaluate from a long-term perspective is far easier said than done, but research strategies should aim to facilitate and not obstruct longer-term examinations, once the resource environment is right for them. Adding an economics dimension to long-term follow-up studies (themselves increasingly common) is one further option.

Inherent Variations

Costs and outcomes are not the same for everyone, even when they are provided with the same type and amount of service or treatment. Treatments are—in part—responses to individual needs. Because needs vary, so too will costs, and because individual circumstances and service responses vary, so too—usually—will outcomes. The mathematician (and eugenicist) Francis Galton once remarked that

it is difficult to understand why statisticians commonly limit their enquiries to Averages, and do not revel in more comprehensive views. Their souls seem as dull to the charm of variety as that of the native of one

of our flat English counties, whose retrospect of Switzerland was that, if its mountains could be thrown into its lakes, two nuisances would be got rid of at once.

This would not be a fair commentary on today's medical statisticians, but the inherent cost and outcome variations in any real-world situation have nevertheless been ignored by researchers (including economists) more often than they have been explored. Economists might consider more cost and production function exploration of their data.

Access and Equity

The distributional consequences of different treatments or policies have not been as regularly researched as the efficiency consequences, and there is arguably a need for economic (and other) evaluations to redress the balance. It is important to ask not just whether a particular treatment is cost-effective, but also which individuals obtain access to it, and whether there are systematic variations in access because of region, income, socio-economic status, ethnic group, insurance coverage or other factors.

Getting Ahead of the Curve

Most economic data are gathered and presented *after* clinical or other data, yet often it is the economic questions—or at least the economic assumptions—that are driving key changes within health care systems. Can health services researchers begin to anticipate better what is needed and plan to collect it *early*? For example, economic evidence on new generations of drugs has followed some years after product launches, and most of it has come from the pharmaceutical industry itself. Economists should not necessarily obtain an inside track when competing with their clinical colleagues for research funding, but they should be looking to get ahead of the curve, not following some years behind.

Conclusion

This paper started with a brief look at the historical development of mental health economics, which in many systems has been painfully slow, and sadly littered with too many studies of dubious quality. Yet surely the relevance of economics in the evaluation of care arrangements and treatments has now been established beyond most doubt. Today many well honed evaluative methods are being introduced and employed responsibly—albeit in a limited range of countries and care contexts—and growing numbers of key decision-makers are looking to economic as well as clinical evidence to guide their actions. Yet many methodological gaps remain, and there are consequently many challenges for the future.

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References

1. Knapp MRJ. Economics and mental health: a concise European history of demand and supply. In: Tansella M, ed. *Making mental health services rational*. Rome: Pensiero Scientifico, 1997; 157–166.
2. Adams C, Anderson J, De Jesus Mari J, eds. *Cochrane database of systematic reviews: schizophrenia module*. London: BMJ, 1998.
3. Miller NE, Magruder KM, ed. *Cost-effectiveness of psychotherapy*. Oxford University Press, Oxford, 1999.
4. Knapp MRJ, Almond S, Percudani M. Costs of schizophrenia. In: Maj M, Sartorius N, eds. *WPA Series in Evidence-Based Psychiatry: schizophrenia*. Chichester: Wiley, 1999; 407–454.
5. Rosenbaum JF, Hylan TR. Costs of depressive disorders. In: Maj M, Sartorius N, eds. *WPA series in evidence-based psychiatry: depressive disorders*. Chichester: Wiley, 1999.