

The application of health economics methods to social care

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Introduction

Beyond health care, the economic evaluation of social welfare programmes is rare (McDaid et al, 2003), but the demand for such evaluation is rising. Economic evaluation provides evidence to support decisions relating to the allocation of scarce resources and such scarcity is as much a feature of social care as health care. To encourage greater use of economic evaluation, social care researchers need to gain a better understanding of the philosophy behind such evaluation and the methodologies necessary to carry out economic analyses in practice. However, there is also a need for economists to better understand the nature of social care interventions in order to ensure that economic evaluation methods are appropriate and feasible in practice.

Nature of interventions

The success of any evaluation is influenced by the nature of the intervention under investigation. Interventions vary considerably along a spectrum of complexity and the more complex the intervention, the harder the evaluation will be. This section examines characteristics of interventions that have particular implications for evaluation, in order to build up a picture of the nature of social care interventions.

Degree of user involvement

Interventions differ in the extent to which service users are 'active' or 'passive' in the delivery of the intervention. The more actively involved, the more likely it is that outcomes will be affected by individual values, culture, attitudes and circumstances. These confounding factors need to be taken into account in an evaluation, but can be harder to categorise or quantify in the same way as, say, age or sex. Many medical and surgical interventions require some patient involvement (e.g. participation or compliance), but it is probably fair to say that this is not generally of the same order of magnitude as for more diverse community interventions, such as mental health or social care services. The success of a social work service, for example, will be influenced by whether the intervention is seen as helpful or as interference, how much support is received from friends and family, the quality of the relationship with the social worker etc.

Complexity of intervention

Some health care interventions, particularly drugs, are highly standardised. Some ought to be fairly uniform, but vary in practice because of differences in clinical practice or provider skills (e.g. surgery). Other interventions, such as community mental health, are more complex or purposively flexible, involving a variable package of care, provided by multiple agencies, to match the varying needs of individuals (Taylor & Thornicroft, 1996). Most social care interventions fall into this latter category. The more complex an intervention, the more difficult it becomes to determine what elements of care are driving good or bad outcomes.

Complexity of outcomes

For some health care interventions, outcomes are relatively easy to quantify. This is particularly true for conditions that are localised, physical and readily treatable, such as broken bones. Other health care interventions seek to make a more 'holistic' impact on conditions that influence many aspects of a person's life, such as mental health problems. Such impacts can be harder to measure and compare with accuracy, since they are less amenable to objective measurement and can be multiple in nature, affecting psychological, social, family and physical functioning. The social care field is similar – aims and outcomes are often multiple and subjective in nature. Accurate representation of changes in outcome can, therefore, be difficult.

Nature of social care interventions

Social care interventions, like health care interventions, cover the whole spectrum from simple to complex. However, most have more in common with the treatment of chronic and enduring health problems than with the acute health care field. Social care problems are often long-term in nature and impact upon many areas of a person's life and the lives of their families. Interventions are characterised by a high degree of user involvement, significant variability across interventions and recipients, multiple and complex outcomes and multiple agency involvement. Although none of these complexities preclude the achievement of a good quality evaluation, they do add significant difficulties and evaluations often fall short of the 'ideal'.

Requirements for an economic evaluation

Economic evaluation is underpinned by a number of fundamental principles derived from welfare economics – the analysis of conditions under which policies may be said to have improved societal well being relative to alternative courses of action. The key words here are 'relative', 'societal', and 'well being'. Economic evaluations should be comparative in nature, societal in scope and concerned with the resulting well being of the individuals involved. This section explores the difficulties that may be encountered when attempting to fulfil these requirements when evaluating complex interventions, such as social care services.

Comparison group

Since economics is concerned with resource scarcity, economic analysis, by definition, must involve the comparative analysis of alternative courses of action (Drummond et al, 1997). The most appropriate comparator should be the 'next best' alternative (Siegal et al, 1997), but this may not always be clear-cut. In the social care field, few evaluations exist to suggest which service is the 'next best'. In addition, universally imposed interventions, such as the new arrangements for all young people leaving local authority care or accommodation (Department of Health, 1999), are not uncommon in the social care field, making a prospective, comparative evaluation impossible (although before and after comparisons would be feasible).

Perspective and scope

The principles of welfare economics require an economic evaluation to adopt a societal perspective that includes all the possible costs and benefits of an intervention to all sectors in society (Johannesson, 1995). The effects of many health care interventions are experienced by a limited and known number of groups in society and thus a societal perspective can be achieved with the inclusion of relatively few viewpoints. In comparing the treatment of ingrowing toenails by podiatrists or surgeons, for example, it would be reasonable to focus on the health service and the patient perspectives only. A comparison of community and hospital-based care for elderly people, however, would need to be broader, perhaps including the health service, social services, voluntary services, informal care and costs borne by the patient and family. In addition, these effects may be felt over a longer period of time, requiring relatively long follow-up periods to capture all significant impacts. Similarly, social care services can be multi-sectoral in nature and have wide-ranging and long-term impacts on patients and their families.

Outcome measurement

The aim of welfare economics is to maximise societal well being, given existing resource constraints. Thus the focus of an economic evaluation will often be on final outcomes, such as quality of life, rather than intermediate outcomes (e.g. cholesterol level) or process measures (e.g. days in hospital). There are two main difficulties in the evaluation of overall well being in social care. First, social care researchers are often more familiar with qualitative assessment of outcomes and intermediate/process measures, than standardised, quantitative measurement

tools. Secondly, as discussed above, the aims and outcomes of social care are often multiple and subjective in nature and it is debatable whether existing generic outcome measures are able to adequately capture the full range of impacts that social care interventions may have on an individual's life. The majority of scales available that fulfil the needs of an economic evaluation (single index utility measures) have been developed to measure health-related quality of life and tend to focus more on physical than psychological or social functioning. Thus, such scales may not be sensitive enough to measure change in broad social care contexts.

Internal validity

An economic evaluation should be based on accurate and unbiased evidence of costs and effects. Such evidence can be obtained using a range of study designs including RCTs, quasi-experiments, observational data, and qualitative research. Whilst social welfare researchers tend to rely on the richness of qualitative research, health economists tend to prefer scientifically rigorous experimental designs, such as the RCT, which are strong on internal validity. Such validity, however, can be damaged by the presence of confounding factors, which, as discussed above, are a common feature of complex social care services. Statistical analysis is often used to control for such confounding factors but the ability of statistical techniques to control for the scale of variability found in more complex areas of social care may be limited and may have significant sample size and data burden implications.

There are, in addition, some genuine obstacles to RCTs in the social care field that may on occasion preclude such designs. Randomisation may at times be considered unethical for reasons of safety. For example, it would be unethical to randomly allocate a young person to return home to their birth parents if that young person had been removed from the home due to serious neglect or abuse. There can also be significant practical problems. Evaluators will not always have the level of control over interventions necessary for randomisation. For example, young people can only be fostered or adopted if suitable families exist. Similarly, evaluators have little control over nationally implemented policies, discussed above. The large number of service access points in social care can make the practicalities of allocation particularly difficult, with various social workers (key workers, duty social workers, support workers etc) contained in various teams across an authority, for example. Cost is a further constraint. A well-conducted RCT can be expensive and the resources required may not be available. Social care research, being more focused on qualitative sampling and without the push for sample sizes capable of producing statistical significance, may be less expensive than RCTs. Thus, to encourage RCT designs requires the understanding of research funding bodies perhaps more familiar with less resource intensive designs, as well as the understanding of the evaluators themselves.

External validity

The external validity (generalisability) of study results may be limited when evaluating social care interventions that are often highly context-dependent. If a particular drug is shown to work for a representative sample of adult men in the south of England, then it may be reasonable to assume that it will be similarly effective for adult men in the South, assuming similar rates of compliance. If, on the other hand, a specific regeneration initiative has been shown to work in one area, it is not safe to assume that it will automatically work elsewhere. The success of the scheme will depend upon the socio-demographic characteristics of residents and the underlying causes of problems, which will vary between regions. For many social care services, it may not be the results that are transferable, but knowledge about why certain services work under certain conditions and for certain people (Pawson and Tilley, 1997). The focus is not so much on the estimation of the overall effects of a service, but on identifying successful mechanisms within the service and the conditions necessary to trigger them.

Evaluation question

Conventional approaches to economic evaluation in the health care field are generally designed to answer one particular question: 'Is the intervention an efficient use of resources compared with alternative uses?' and the guidelines for economic evaluation tend to be centred around this one, albeit important, question. This approach is most suited to the evaluation of established interventions where the only question decision-makers are concerned with is whether the intervention is effective and, if so, whether it is cost-effective. Some health care and many social care interventions evolve over time or are purposely flexible to meet the changing needs of service users. Thus, other evaluation questions may be more relevant. In particular, evaluation has an important role to play in the learning process, by looking at how a scheme might be improved over time. For an economist, this means identifying ways in which a scheme could be made more efficient, requiring a more dynamic approach to evaluation.

Possible solutions

The obstacles discussed above do not preclude the use of traditional economic evaluation techniques but evaluators should be aware of the potential pitfalls and be open to the additional benefits of pragmatism and extensions to the model. There is no one solution to the problems that may be encountered when evaluating complex interventions. Each new evaluation should be considered in relation to the obstacles discussed and solutions sought where necessary. Possible solutions, many of which have significant funding implications, include the following:

Qualitative methods

Qualitative research covers a wide range of techniques, including in-depth interviews, focus and consensus groups, and case studies. The aim is not to provide quantified answers or generate statistically significant results, but to focus on the meanings, experiences, views and motivations of participants and to explore themes, patterns and associations. There are a number of ways in which qualitative methods can be used to complement quantitative approaches to evaluation:

- To explore the aims of a service in order to help determine the evaluation question
- To explore what outcomes are important to services users
- To explore the range of likely costs and effects to be included in the analysis
- To determine the best methods of collecting data on costs and effects
- In the design and testing of appropriate outcome measurement tools
- To explore how and why a service works
- To explore what types of individuals benefit from a service and why
- To help interpret the results of the quantitative analyses

Alternative study designs

In situations where an experimental RCT is not possible, alternative study designs should be considered. In particular, non-randomised experiments may be necessary when randomisation is not possible. For nationally implemented interventions, before and after studies or cohort/longitudinal designs may be necessary. Within these alternative designs, it may also be necessary to ensure a sample size large enough to allow statistical analysis of the quantitative data and to control for relevant confounding factors.

Additional data

Additional data requirements, over and above that traditionally collected in health economic evaluations, may include cost and effect data for a broader range of key participants and agencies, detailed information on the quantity of each component of a service provided to each individual and information on key confounding factors, such as contextual, socio-demographic

data and information on service users preferences, culture and beliefs. In addition, direct valuation of outcomes within an evaluation, using perhaps conjoint analysis or willingness to pay/accept techniques, may be required where appropriate outcome scales do not exist.

Additional phases to evaluation

Whilst the RCT is accepted as the most reliable method of determining effectiveness in clinical studies, its limitations in the evaluation of complex interventions are recognised and the need for a phased approach has been advocated (Campbell et al, 2000). The first step is to review the theoretical basis for an intervention in order to understand and develop hypotheses relating to the potentially beneficial components. Second, modelling techniques and qualitative research should be used to help build up an understanding of the interrelationships between different components of the intervention and the ways in which the intervention works. Thirdly, it is recommended that the intervention is tested for feasibility and acceptability and modified, as appropriate. Such exploratory analysis can additionally be used to help design an appropriate evaluation by exploring, for example, the feasibility of randomisation and recruitment, the effect size for sample size calculations and the appropriate costs and outcomes to measure.

Alternative evaluation approaches

Health economists tend to have a relatively positivist and static view of the world, preferring quantitative and summative experimental approaches to the evaluation of well-defined and stable interventions. The overarching aim is to find the 'right answer' to the question of relative effectiveness or cost-effectiveness. The evaluation of complex interventions, however, may require a more formative approach, such as action research, that allows the intervention to evolve over time in response to changing circumstances and the experience of the provider (Greenwood, 1998). Rather than assuming the existence of a single answer, a constructivist approach could be taken that seeks a negotiated consensus between different perspectives (Kushner, 1996). Theory-based approaches, which place a greater emphasis on understanding the mechanisms by which interventions work, could also prove useful for the evaluation of more complex interventions (Pawson & Tilley, 1997). The health economist's individualistic grounding in utilitarianism has also been criticised for ignoring changes to the broader socio-economic environment and thus biasing evaluations against interventions that seek to influence community values and behaviour (Shiell & Hawe, 1996).

Conclusion

Social care interventions, like health care interventions, cover the whole spectrum from simple to complex. However, most have more in common with the treatment of chronic health problems than with the acute health care field. Social care problems are often long-term in nature and impact upon many areas of a person's life and the lives of their families. Interventions are characterised by a high degree of user involvement, significant variability across interventions and recipients, multiple and complex outcomes and multiple agency involvement. Although none of these complexities preclude the achievement of a good quality economic evaluation, they do add significant difficulties and evaluations often fall short of the 'ideal'.

The problems that may be encountered when applying traditional evaluation techniques favoured by health economists to complex interventions are by no means exclusive to social care. Indeed, within health care, rigid reliance on randomised designs, quantitative data and statistical validity is noticeably more common in relatively standardised and homogeneous areas of health care, such as surgery and pharmaceuticals, demonstrating the relative ease of scientific evaluation in some areas as compared to others. Nor are the difficulties mentioned, exclusive to economic evaluations. In fact, most relate to issues of trial design and outcome

measurement which are relevant to all evaluations, not just economic ones. They tend, however, to be the methods most commonly preferred by economists working in the evaluation of health technologies, and indeed those commonly stressed in health economics courses.

The lesson to be drawn from this paper is that efforts need to be made to ensure greater scientific validity of evaluations in the social care field, whilst recognising that the complexity of many social care interventions may require greater attention to the details of study design and modifications or additions to the 'conventional' model. Although movements away from the 'ideal' may have a negative impact upon the internal validity of results, this must be balanced against the likelihood of meaningless results from the imposition of rigid scientific techniques that may be inappropriate, given the nature of the interventions under evaluation.

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