MHEEN II Policy Briefing **2**

Cost-effectiveness and mental health

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1. Why cost-effectiveness analysis?

Mental health systems aim primarily to improve mental health and treat mental illness; more recently attention has also turned towards promoting population wide mental well-being, both within and outside mental health systems. Pursuing these aims is always constrained by resources. For example, limitations on money, trained staff, inpatient beds, therapy sessions and medications mean that no mental health system, even if it is perfectly designed and efficiently managed, can meet all mental health needs. Scarcity is a permanent feature of all mental health systems. Difficult choices have to be made between alternative uses of the same resource or service or hour of staff time.

Economic evaluations can help decision makers to make those choices. They seek to provide evidence to inform both professional practice and strategic decisions (for example, at national or regional level) about how to allocate available resources. In fact, decision makers at these various levels are often looking for a range of evidence, including:

> *The costs of inaction*: What are the economic consequences of not addressing a need?
>
> *The costs of action*: What would it cost to intervene by providing treatment or a preventive measure?
>
> *The cost-effectiveness of action*: What is the balance between what it costs to intervene and what would be achieved in terms of better health and improved quality of life?
>
> *The levers for change*: What economic and other incentives can encourage more use of those interventions that are thought to be cost-effective and less use of those interventions which are not?

What has become increasingly clear in Europe over recent years is that the first of these – the costs of inaction – are high, spread widely across many parts of society (including across many government budgets) and enduring. But the second of these – the costs of action – can also be high, because skilled staff need to be trained, medications (especially new ones) look expensive to buy, and so on. Consequently, growing attention is being paid to the third and fourth elements in the above list – whether it is cost-effective to address a particular set of mental health needs with a particular prevention/treatment option or policy strategy, and if so, how to make sure that it is available and used.

In this Policy Briefing from the Mental Health Economics European Network (MHEEN), we set out the broad purposes and methods of economic evaluation. We also illustrate this by summarising what is known in three mental health areas – depression treatment, interventions for children and adolescents with mental health problems and the development of community care to replace psychiatric hospitals. These three areas highlight both the potential for informing decisions and the fact that robust evidence in Europe remains relatively limited. We then examine how well evidence of this kind reaches the people who could make use of it in their decision-making, and how things could be improved. We finish with some recommendations on how to strengthen the quality and capacity to undertake such evaluations in Europe.

2. Cost-effectiveness and other evaluations

Decision makers are looking for answers to two questions when considering whether to recommend, license, purchase or use a particular intervention, such as a new drug for

schizophrenia. The first is the 'does it work' question:

- Is it effective in alleviating psychotic symptoms and generally improving health-related quality of life?

If the answer to this effectiveness question is 'yes', then there is a second question:

- Is it worth it?

That is, does the drug achieve the improved outcomes at a cost that is worth paying? This the cost-effectiveness question. The meaning of the word 'worth' in this second question is not straightforward and is also not free from controversy, as we shall see in a moment.

These two questions define what an economic evaluation is concerned with: the outcomes – changes in symptoms and quality of life, for example – of each of the different treatments or interventions or policies that are being considered; and the costs of achieving them. Looking only at costs without regard for outcomes is not usually seen as an economic evaluation, because it would not usually be an adequate or sensible basis for building policy or deciding how to make best use of an available budget.

As noted earlier, there are different types of economic evaluation. They have a lot in common – for instance, they share a common approach to the conceptualisation, definition and measurement of costs. But there are some important differences between them in how they define and assess outcomes, primarily because they seek to answer slightly different questions. We can set out these differences by discussing, first, the questions that a study might address, and then looking at the measurement of costs and outcomes, how trade-offs often need to be made between them, and then turn to the slightly more technical issues of utility and benefit measurement.

Question and perspective

If the question to be addressed by an economic evaluation is essentially about improving health - what is the most appropriate treatment for someone with particular needs in particular circumstances - information will be needed on the comparative costs of the different treatments available (and also on the no-treatment option) and the comparative outcomes measured in terms of symptom alleviation, improved functioning and well-being and so on. A cost-effectiveness analysis would then be an appropriate type of economic evaluation (see the subsection on 'Effectiveness measurement' below). We should note here that the labels attached to different types of economic evaluation are not always consistently used, but the term 'cost-effectiveness' is the most widely used generic term in the health field as well as the description of an analysis that looks at mental health-specific measures of well-being.

But the question might be broader. It may be that the decision maker has to choose whether to treat depression rather than spending the funds elsewhere in the health system. In these circumstances, decision makers need to know the costs, but they also now need an outcome measure that uses a common metric across different health domains. It may be that depression treatment is one option and diabetes treatment is another, so that a measure of depressive symptoms is not going to be very useful when making such a comparison. The most common such metric is 'utility' and a cost-utility analysis would be undertaken, as we explain in the subsection below on 'Utility measurement'.

An even wider decision-making perspective would be to ask whether to increase expenditure

in the health system to allow more ill people to be treated or whether instead to spend more money to improving schools or to invest in the transport infrastructure. It can also be used to help compare the impact of investing in mental health promotion measures that take place outside the health sector with other uses of resources. In this case, an evaluation again needs to ask about the comparative costs and impacts of the different options, but now it needs to make sure that the definition and measurement of 'impact' are relevant across all of these public policy areas. The usual choice for such a broad impact measure is money, leading to a form of evaluation called cost-benefit analysis. We come back to this in the 'Benefit measurement' subsection.

The question to be addressed thus influences the type of evaluation needed. But these choices do not have to be mutually exclusive: a single study can support more than one approach if the right combination of evaluative tools is used. Basically, the broader the question, the lower the likelihood that the outcome measure will be sensitive to the particular circumstances of a specific disorder such as depression, but the greater the usefulness in terms of resource allocation decisions.

Linked to specification of the question that an evaluation has to address is the perspective that the study will adopt. To give one example, is the evaluation needed to help resource allocation within a particular agency (such as primary care clinic), or a particular system (such as the health care system), across different government sectors, or across the whole of society? The perspective will obviously determine the breadth of both cost and outcome measurement, as we shall illustrate below.

Cost measurement

Some costs are directly associated with a disorder or its treatment, such as the money spent on medications and other health services, and some are more indirect, measuring lost productivity because ill-health can disrupt someone's employment pattern or mean that families have to provide unpaid care. How broadly the costs are measured will depend upon the purpose of the study.

Several examples can be given. Table 1 illustrates the tendency for people with mental health needs to use a wide range of services. The data come from a very intensive study of the closure of a large psychiatric hospital in London.

A second example, also from work on children with persistent antisocial behaviour in London found that only 5% of the total cost was carried by the health service, the remainder falling to schools (special educational needs), social care agencies, community voluntary organizations, families (disrupted parental employment, household damage) and the welfare system (disability and similar transfer payments) (Romeo et al 2006). The cost pattern is summarised in Figure 1. An earlier study found that adults who, as children, had a conduct disorder generated costs for a range of agencies that were significantly higher than the costs for a non-morbid control group; most noticeable were the criminal justice system costs, which were 18 times greater (Scott et al 2001). Turning to depression, one Swedish study reported that lost productivity costs due to ill health and premature mortality accounted for 86% of total costs of depression in Sweden. Moreover, unlike health service costs which have remained stable, productivity losses related to absenteeism and early retirement due to depression have been increasing over the last decade (Sobocki et al 2007).

Service use patterns and therefore also cost patterns will vary considerably from country to

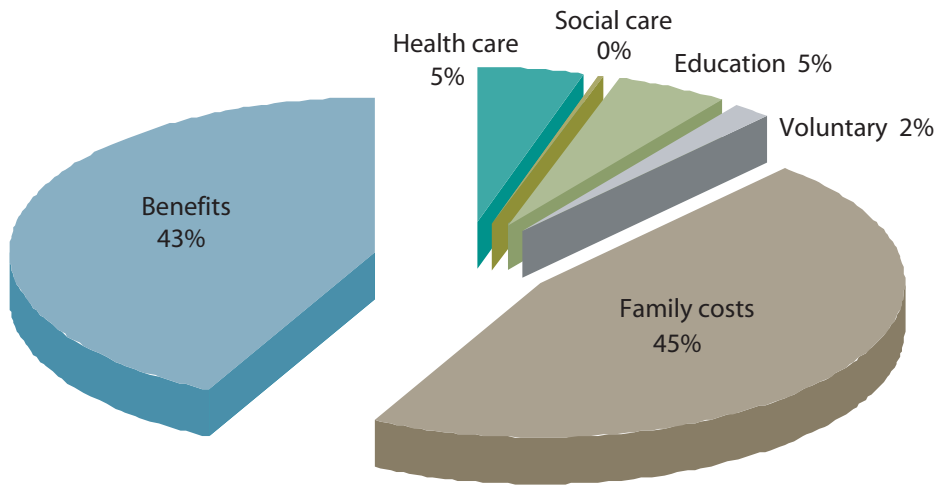
Table 1: Service use and costs in the year after people left two London hospitals in late 1980s and early 1990s[1]

Services used in the community	Individuals using each service (%)[2]
Accommodation and living expenses	100.0
Hospital out-patient services	25.9
Hospital in-patient services	14.8
Hospital day-patient services	22.9
LA social services day care	17.4
Voluntary organisation day care	15.2
Social club services	6.6
Education classes	4.5
Community psychiatry services	57.8
Chiropody	41.3
Nursing services	29.1
Psychology services	14.4
Occupational therapy	8.6
Drugs (depot injection)	14.3
Miscellaneous services[3]	18.6
Physiotherapy	2.4
General Practitioner	74.5
Dentist	25.3
Optician	19.9
Community Pharmacist	5.8
Field social work	23.6
Police and probation services	5.8
Client's travel	29.3
Volunteer inputs	1.7
Case review	9.9

Notes

1. Source: Beecham and Knapp (2001).
2. Data available for those people for whom full service use data were collected (n=533).
3. Includes aids and adaptations, audiology, aromatherapy, employment officer, homehelp, job club, reminiscence group and a few other services that were each used by only a small number of people in the sample.

Figure 1: Costs for children with persistent antisocial behaviour



Total cost excluding benefits averaged £5960 per child per year, at 2000/01 prices (benefits = £4307)

Source: Romeo et al (2006)

country. Two multi-country European studies of people with schizophrenia provide illustrations. The EPSILON study demonstrated how service systems and availability varied greatly between Italy, Spain, the Netherlands, Denmark and England (Becker et al 2002). The ERGOS study similarly found distinct differences in patterns of treatment and care across countries (Kovess et al 2005).

Finding the data for cost measurement

When an evaluation is carried out in practice, data are needed on the services that individuals use. Information on service use might come from organisational 'billing' systems (recording amounts transferred between purchasers and providers for services used), or from routine computerised information systems that record service contacts. Or the data might be collected specifically for the purposes of the research – perhaps through interviews with service users, caregivers or service professionals. One instrument that has been widely used in Europe for this latter purpose is the Client Service Receipt Inventory (Beecham and Knapp 2001).

The next task is to attach unit (average) cost estimates to these service use data. In England, there is an excellent annual compendium of health and social care unit costs which provides just such figures (see Curtis 2007 for the most recent volume). However, cost data are not available in many countries and it might be necessary to estimate unit costs anew; major biases may be introduced into an evaluation if site- or country-level costs are simply transferred across countries (Urdahl et al 2003). [Another MHEEN policy briefing – on financing – discusses the availability of unit cost data.] For both preventive measures and treatments, the main cost categories to be quantified would be: salaries of staff employed in prevention, treatment and care services, facility operating costs (e.g. cleaning, catering), overhead costs (e.g. personnel, finance) and capital costs for buildings and durable equipment. A range of data sources could be used to build up the cost measures needed, including government statistics, health system expenditure figures, and specific facility or organisation accounts.

Effectiveness measurement

The most appealing and intuitive type of economic evaluation is *cost-effectiveness analysis* (CEA). As we noted earlier, it measures costs as set out above, and outcomes along dimensions that would be recognised by service professionals including clinicians (such as changes in symptoms, behaviour and functioning). A CEA can help decision makers choose between interventions aimed at specific health needs.

Strictly speaking, a cost-effectiveness analysis looks at a single outcome dimension – such as change in symptoms or improvement in well-being – and then computes and compares the difference in costs between two interventions and the difference in this (primary) outcome. If one intervention is both more effective and less costly than another, then it would clearly be seen as the more cost-effective of the two. But, if one intervention is more effective and at the same time more costly than the other, then a trade-off has to be made (see below).

Often the economist will compute cost differences and a range of effectiveness differences (one for each outcome dimension) – an approach sometimes called *cost-consequences analysis* – which has the advantage of breadth but poses a challenge if one outcome is better and another worse for a particular intervention compared to an alternative. It is then not immediately obvious which intervention is to be preferred, and the decision-maker must weigh up the strength of evidence.

Making trade-offs

If an evaluation finds one intervention to be both more effective but simultaneously more expensive than another intervention, which of them is the more cost-effective? A trade-off must be made between the better outcomes and the higher costs necessary to achieve them. The precise amount or threshold at which societies are willing to spend additional money for improved outcomes is a value judgement and will vary across countries; for example in western Europe it is common for interventions to be authorised routinely for reimbursement if they gain an additional life year at a cost of €50,000 or less. Above this level the decision becomes more complex and is influenced by many other factors including issues of fairness and/or the need to target interventions at specific at-risk groups within society.

Regardless of the threshold used by countries, the classical way of determining this trade-off has been via the derivation of an incremental cost-effectiveness ratio (ICER), which divides the extra cost associated with a new intervention by its additional effect. More recently, health economists have developed the 'net benefit approach' to explicate the nature of the trade-off (see Box 1 for an example). It is commonly

Box 1: Example of net benefit approach

An example of the use of cost-effectiveness acceptability curves comes from a study of computer-delivered cognitive behavioural therapy (CCBT) for anxiety and depression (McCrone et al 2004). CCBT was more expensive in health service terms than standard primary care services, but more effective in reducing symptoms.

The fitted CEACs showed that, even if the value placed by society on a unit reduction in the Beck Depression Inventory (which was the primary clinical measure used in the trial) was as little as £40, there was an 81% probability that CCBT would be viewed as cost-effective. Similarly, assigning a societal value of just £5 to each additional depression-free day would result in an 80% probability that CCBT would be cost-effective. The acceptability curve makes transparent the trade-offs faced by decision makers.

seen today in the construction of *cost-effectiveness acceptability curves* (CEACs). These curves show the probability that an intervention will be cost-effective for each of a number of pre-specified or implicit valuations of an outcome improvement by the decision maker.

Alternative outcome measures: utility measurement

One way to overcome the potential problem of different outcome dimensions pointing in different directions is to employ a single, over-arching measure. A preference-weighted, health-related quality of life measure could be used. The value of the quality of life improvement is gauged in units of 'utility', usually expressed by a combined index of the mortality and quality of life effects of an intervention. The best known such index is the Quality Adjusted Life Year (QALY). In essence, the value of years of life lived is adjusted to take account of the quality of life experienced during that time period.

A *cost-utility analysis* (CUA) measures the outcome difference between two interventions in terms of QALY gain, and compares this with the difference in costs. CUAs have a number of attractions, including their use of a uni-dimensional, generic outcome measure that allows comparisons across diagnostic groups, based on an explicit methodology for weighting preferences and valuing health states. But the utility measure may be thought to be too reductionist and insufficiently sensitive to changes expected in a particular clinical area such as depression treatment (Ayuso Mateos et al 2006; Chisholm et al 1997). Specific disease-specific quality of life tools have in fact been developed, such as the McSad health state classification system for depression (Bennett et al 2000), or the 55 health state instrument for bipolar disorder (Revicki et al 2005).

If used, cost-utility analyses produce estimates of cost per QALY-gain from one therapy over another, which can then inform health care resource allocation decisions, such as by the National Institute for Health and Clinical Excellence (NICE) in England and Wales. More recently NICE has also begun to use the QALY as an outcome measure for assessing the value of investing in mental well-being promotion initiatives.

Alternative outcome measures: monetary benefits

Another approach to economic evaluation, *cost-benefit analysis*, values all costs and outcomes (benefits) in the same (monetary) units. If benefits exceed costs, the evaluation would provide support for the intervention, and vice versa. With two or more alternatives, the intervention with the greatest net benefit would be deemed the most efficient.

Cost-benefit analyses are intrinsically quite attractive, as they can help decision makers to allocate resources across different sectors area, for example comparing investments in health care with those in housing, education or transport. There have been only a few cost-benefit analyses of mental health care interventions, including use of this approach in assessing the value of mental health prevention interventions, for example for suicide prevention (de Castro et al 2004; Medoff, 1986; Zaloshnja et al 2003).

Evaluation designs

Generally speaking, the ideal type of study upon which to base decisions on cost-effectiveness and resource allocation is one conducted prospectively with two (or more) appropriately sized randomly allocated groups of individuals, for whom all conceivable costs and outcomes are

measured appropriately, including a comparable measure of outcome. But randomised controlled trials have their weaknesses, in particular that they are often so restrictive in their inclusion criteria that they cease to be very representative of real world practice, and because they often evaluate the ideal interventions or therapeutic context rather than the context that would be found in everyday settings. Moreover, some questions – such as whether to extend compulsory treatment powers, whether to close an old long-stay institution or the satisfaction of service users with different interventions – might not be amenable to this kind of study.

Other evaluation designs are available (see Jane-Llopis et al 2007 for an overview). One is the naturalistic design that evaluates the impact of interventions within everyday settings; this is critical in the case of many mental health interventions where the way in which they are implemented will have a major impact on effectiveness. Another option is modelling, which aims to synthesise data and expertise from a range of sources in an attempt to mimic what would happen to individuals receiving different interventions, projecting their likely care pathways and the associated costs and outcomes. There has been a lot of discussion of the weaknesses and advantages of modelling as the basis for cost-effectiveness analyses (Brennan and Akehurst 2000).

Different types of evaluation design can be complementary, addressing different questions, so it may be appropriate to make use of evidence from a mix of approaches (Jane-Llopis et al 2007).

Availability of mental health economic evaluation evidence

Unfortunately, the supply of economic evidence has been unevenly spread across Europe (Evers et al. 2007). There still is a disappointingly small volume of work on mental health by economists, although important non-pharmaceutical studies can be identified in countries such as Germany, Italy, the Netherlands, Norway, Spain, Sweden and the UK.

Work has tended to be greater in diagnostic areas where new classes of medication have been launched: the pharmaceutical industry looks to economic evidence to support its marketing; and health technology assessment and licensing bodies increasingly ask for cost-effectiveness as well as quality, safety and efficacy evidence. At the same time, health care funding and delivery bodies also want their own independent evidence on new therapies. Consequently – to give just one example – a lot of economic studies of depression followed the licensing of the early selective serotonin reuptake inhibitors (SSRIs) and later antidepressants with other mechanisms of action. Similarly, the arrival of the atypical antipsychotics and the cholinesterase inhibitors for Alzheimer's disease stimulated a lot of new economic research.

In this policy briefing, we cannot cover all areas of mental health policy, and we concentrate on three areas of analysis to illustrate how economics has been used:

- economic evaluation of depression treatment
- interventions for child and adolescent mental health problems
- hospital closure and the development of community care.

We devote another MHEEN Policy Briefing entirely to what is known about the economics of prevention of poor mental health and the promotion of well-being.

3. Depression treatment

A very broad-ranging and independent review of evidence on the treatment of adults and children with depression is about to be published (Baghai et al 2008) and includes a review of economic evidence,* whether from randomised trials, naturalistic studies or models. More than 50 economic studies were reviewed, many of them models and very few of them based on large samples of patients. There is also the complication, from a European point of view, that many of these studies were conducted in North America. Results from economic evaluations do not easily transfer from one country to another because of differences in system structure and financing, leading to differences in relative costs.

The authors of this recent review concluded that there was persuasive evidence that the selective serotonin re-uptake inhibitors (SSRIs) – the best known of which is fluoxetine (Prozac in its patented form, although it is now off-patent) – were more cost-effective than the earlier generation of drugs (the tricyclic antidepressants or TCAs). This economic advantage was demonstrated even through the SSRIs were much more expensive per pill than the TCAs because their effects on symptoms was sufficient to reduce the use of costly inpatient and other services. Most of the completed evaluations were conducted when the SSRIs were still under patent, and subsequently their prices have dropped considerably as they have gone generic.

New classes of antidepressant medication have been developed in the last 20 years, including later 'generations' of SSRIs. The evidence reviewed by Baghai et al (2008) concluded that evidence is also accumulating that the newer SSRI escitalopram is more cost-effective than the 'first-generation' SSRIs, and that drugs in other classes – that have different modes of action than affecting serotonin reuptake – such as venlafaxine, mirtazapine and nefazodone might also be cost-effective alternatives to SSRIs.

There are also studies – all conducted in the US – that have shown that changes to the way that an individual's treatment and care is managed (for example, through patient education, shared decision-making and monitoring) might enhance the effectiveness and cost-effectiveness of antidepressant medications.

Some European countries are now giving increasing attention to making psychological treatments more widely available for people with depression. These include cognitive behavioural therapy (CBT), interpersonal psychotherapy (IPT), counselling and psychotherapy. They might either be used as alternatives to antidepressant medication, or used in conjunction. From their review, Baghai et al (2008) found evidence that psychotherapy is cost-effective for some user groups. When compared to antidepressants, medication tends to demonstrate superiority. What is still unclear, however, is whether there is economic value in combining psychotherapy with pharmacotherapy.

4. Interventions for child and adolescent mental health problems

In comparison to the large number of completed economic evaluations in the depression field, there is surprisingly little economic evidence on child and adolescent mental health interventions. A systematic review a few years ago found only fourteen published economic

* Led by Barbara Barrett, Institute of Psychiatry, King's College London.

evaluations, some of rather poor quality (Romeo et al 2005). Common problems included small sample sizes, narrow cost measures, short follow-ups and limited outcome measures. (There are guidelines and suggestions for quality checklists for readers of health economic evaluations; see for example Drummond and Jefferson 1996.)

Another drawback for present purposes is that, again, most of the completed studies have been undertaken outside Europe. The reasons why the results of economic evaluations generally do not transfer easily from one health system to another are because of differences in system structure and financing, leading to differences in relative costs. It is infeasible and certainly unnecessary to carry out an evaluation every time a policy decision needs to be taken, or in every single country, but it is also difficult to assess the relevance of economic evidence from another country, especially if its mental health system is markedly different.

One example of a well-conducted cost-effectiveness analysis is the evaluation of a home-based social work intervention for children and adolescents who have deliberately poisoned themselves (Byford et al 1999). The researchers measured suicidal ideation, hopelessness and family functioning as the main outcomes. Costs were based on patterns of utilisation of health, education, social care and voluntary sector services. Within a randomised controlled trial design, the researchers found no significant differences in the main outcomes or in costs, although parental satisfaction with treatment was significantly greater in the group that received a new social work intervention compared to those who received routine care.

Another useful study in this field is the pragmatic randomised trial of a parenting intervention for parents of children at risk of developing conduct disorder (the Incredible Years programme) compared to waiting list controls (Edwards et al 2007). The perspective for cost measurement was the public sector (health, social care, special education); effectiveness was measured by reductions in intensity of behaviour problems. The Incredible Years programme was more effective but also more costly. The researchers found that it would cost £1344 to bring the average child in the intervention group (in terms of behaviour intensity score) to below the clinical cut-off point. A cost-effectiveness acceptability curve was plotted to show the trade-offs between cost and effectiveness.

There is also some evidence of the cost-effectiveness of psychological therapies compared to antidepressants. Byford et al (2007) assessed the short-term cost-effectiveness of combining SSRI medications with cognitive–behavioural therapy (CBT) together with clinical care compared with SSRIs alone and clinical care alone in treating adolescents with major depression in receipt of routine specialist clinical care. From their randomised controlled trial over a 28-week period they could find no evidence that a combination of CBT plus SSRIs was more cost-effective than medication alone.

5. Hospital closure

One of the dominant themes in mental health policy in Europe over recent years has been the attempt – successful in many countries – to close the old and usually large psychiatric institutions (the asylums and similar settings) and to develop community-based services in their place. Another MHEEN Policy Briefing looks specifically at this changing balance of care, and here we focus exclusively on earlier evidence that compares these two care settings. In fact, we draw only on English evidence here, because there is not much else available in Europe.

Almost all of the old psychiatric asylums in England have now closed, but earlier studies were

able to look at the people who moved from hospital – often after a lifetime of residence – to community-based care.

The most comprehensive evaluation of community-based care for former long-stay inpatients looked at the closure of two North London hospitals. One year and five years after they left, former inpatients were enjoying a quality of life at least as good as in hospital. Mortality rates were no higher than normal, neither was homelessness nor crime. Accommodation stability in the community was impressive, and care environments (as rated by researchers and residents) were much better than in hospital. Social networks were stable: a minority of people gained in this respect, but most were not socially integrated into local communities. Hospital readmissions were common (38% of the group of 'leavers' had at least one readmission over a five-year period) and therefore added to the cost of community care. Individuals strongly preferred community living to hospital (Leff 1997).

The associated economic evaluation found that many services were used in the community (see Table 1 above), with patterns of service use changing over time. The full costs were no different between community and long-stay hospital care (Beecham et al 1997). Pooling the cost and outcome findings suggested that community care was more cost-effective. Higher cost community care packages appeared to be associated with better individual outcomes.

A longer study followed but of a smaller group of individuals, looked at patterns of service use and outcomes over a 12-year period after these people left long-stay hospital residence for a planned community setting (Beecham et al 2004). Outcomes were generally good, and the average weekly total cost per person remained lower in the community than it had been in hospital.

These and other longitudinal studies that have followed individuals from the hospitals where they have lived for years, and in a few cases since birth, into the community settings to which they were helped to move agree that community-based care is more cost-effective than hospital care for most people. This result applies particularly to those with less severe mental health problems or fewer dependencies (Knapp et al 1995). However, there were a number of long-stay hospital residents with 'very challenging needs' who are more costly to accommodate in community settings (or at least those community settings then in use) than in hospital, even though their clinical and social outcomes showed improvements. Success depends on having sufficient staffing intensity, that is, it depends on expending sufficient costs (Hallam and Trieman 2001).

A recently completed European Commission-supported project collated information on the number of disabled people living in residential institutions in 28 European countries. It also sought identify successful strategies for replacing institutions with community-based services, and paid particular attention to economic issues (Mansell et al 2007).

6. Helping decision makers connect with the evidence

Even if economic evaluations are well conducted, they are of little use if they do not reach the people who can make use of them – the local, regional and national decision makers. But the evidence on usage is not great. For instance, the EUROMET study across nine European countries found that only one third of respondents used economic evaluation in their decisions; it was also recognised that knowledge and understanding of economic evaluation techniques by decision makers was limited (Hoffmann 2000).

Since publication of the findings from this EUROMET study there has been marked growth in the use of cost-effectiveness requirements as part of the decision-making process in respect of licensing and reimbursement of drugs and other health technologies (Maynard and McDaid 2003). These systems are known as *fourth hurdles*, because in effect they require the supplier of an intervention to demonstrate cost-effectiveness, in addition to quality, safety and efficacy, which are the conventional first three hurdles put up by licensing authorities. Yet even where such evidence is used nationally, decision makers at local level may not take economics into account when deciding which interventions to make available. Again a primary reason for this seems to be poor communication and an inability on the part of researchers to present their results in an accessible format (Williams et al 2006).

Using economic evaluations in Europe

In the first phase of MHEEN, we collated data on the role of economic evidence in health systems in 17 European countries (all in the west of Europe), and then looked at the extent to which some priority had been given to the economic evaluations of mental health interventions, as well as reflecting on the overall capacity for undertaking economic evaluation. The MHEEN partners also identified (if possible) any examples where impact of economic evaluation on policy could be cited.

At least ten of those 17 countries do consider evidence on cost-effectiveness when making decisions on the appropriateness of new drugs and other interventions (Table 2). (In the case of countries such as France, the provision of such information is not mandatory and often not included.) Health technology assessment bodies have now been established in most MHEEN countries, providing information on the clinical effectiveness, and also in many instances, on the economic impact of a technology.

Where the fourth hurdle has been introduced, this is still largely concerned with the evaluation of drugs and not with other health technologies such as psychological therapy. For instance, in Austria mandatory requirements only exist for drugs, which, once licensed, are submitted to the Federation of Austrian Social Security Institutions for entry onto the Heilmittelverzeichnis, the 'Approval List of Drugs and Therapeutic Products'. This application must include pharmacological and pharmacoeconomic assessment. Similarly, pharmaceutical companies in Finland must provide information on the cost-effectiveness of new products. In France, the Haute Autorite de Sante (HAS) commissions some economic evaluations.

In England and Wales, NICE undertakes appraisals of both existing and new health promotion, public health and health care interventions. Economic analysis is conducted from the perspective of the NHS and personal social services, but family carer costs can also be highlighted, although these are not formally taken into consideration during the appraisal. Results may be presented in terms of cost-effectiveness or cost-utility analysis. At the end of the appraisal process a recommendation on the use of the intervention is made. In many cases, this may restrict access to specific subgroups of the population. Unless otherwise indicated by the governments in England and Wales, NICE recommendations are mandatory and should theoretically be fully implemented, although in practice this does not always happen. In Scotland, cost-effectiveness evidence is considered by a different body, the Scottish Medicines Consortium.

Economic evaluation continues to play a minimal role in decision-making in some other EU countries, however. This may reflect a lack of demand for such evaluation; traditionally being the

Table 2: Use of economic information in coverage/reimbursement decisions for mental health interventions

	Fourth Hurdle	Drugs	Other Interventions
Austria	Yes (partial)	Yes	No
Belgium	No	No	No
Denmark	Yes	Yes	No
England & Wales	Yes	Yes	Yes
Finland	Yes	Yes	No
France	Partial	Yes	No
Germany	No	No	No
Greece	No	No	No
Iceland	No	No	No
Ireland	Yes (partial)	Yes	No
Italy	Partial	Yes	No
Luxembourg	No	No	No
Netherlands	Yes	Yes	No
Norway	Yes	Yes	No
Portugal	Yes	Yes	No
Scotland	Partial	Yes	Yes
Spain	Not yet	No	No
Sweden	Yes	Yes	Yes

case in some countries with fragmented social health insurance systems such as Germany, but it might also reflect the limited human capacity to conduct economic evaluations in some member states, with an obvious example being Luxembourg.

What of mental health-specific economic evaluations? From the first phase of MHEEN we found that published evaluations in Europe have concentrated on pharmaceuticals, with much less emphasis on other interventions. This is unsurprising, given regulatory structures that focus heavily on drugs, and that place the onus on industry to fund evaluation. When it comes to complex interventions, such as the organisation of community care, supported housing or employment, or when looking at early years interventions for children and their parents, there is much less funding around to pay for evaluations, including economic evaluations. And once we look outside the health system – at social care services for example – or look at prevention and promotion strategies rather than treatments, very few evaluations have taken place although their numbers are growing (see the MHEEN Policy Briefing on prevention and promotion). Moreover, the MHEEN group could find little evidence of the impact of economic evaluation on local policy and practice, although assessing the impact of evidence on policy is itself difficult (Maynard and McDaid 2003).

Facilitating use of mental health economic evaluations

Knowledge transfer is complex: decision-making is never a simple linear process whereby information from knowledge producers and others informs the policy-making process. What are the barriers that stop policy makers in Europe's mental health systems making good use of economic and other evaluative evidence? These can include low levels of personal contact between researchers and policy-makers; research evidence being available at the wrong time or not being relevant to the issues that policy makers have to address; mutual mistrust; and political instability or high turnover of policy-making staff.

None of these barriers is specific to mental health, nor are the approaches that have been tried to overcome them (see below), but there is one important additional barrier to overcome in the mental health field. This is the widespread stigma associated with mental health problems which has led to unfair discrimination in some policy decisions. One survey in Germany reported that only 10% and 7% of respondents placed schizophrenia and depression, respectively, within their top three priorities when considering which disease areas should be protected in the event of budget cuts, compared with 89% of respondents prioritising cancer, 51% HIV/AIDS and 49% cardiovascular disease. These low priorities were attributed in part to ignorance that the mental health conditions could be treated, a belief that they were self-inflicted, and an underestimation of individual susceptibility to mental illness (Matschinger and Angermeyer 2004).

Building links between researchers and stakeholders

Bringing researcher and policy makers together at an early stage, along with other key stakeholders, can help identify research questions which are both of policy relevance and feasible from the point of view of research (Lavis et al 2003). Developing links can also increase the sense of ownership that decision makers have over knowledge used in the decision-making process.

Information also needs to be presented appropriately. Of course, capacity to conduct economic evaluations can be improved; guidelines both for the conduct and the transparent reporting of economic evaluation findings are available (Drummond et al 2003; Hoffmann 2000; van Helden et al 2005). But it is also a question of tailoring outputs so that they are appropriate for different target groups. Decision makers do not have time to read long technical reports: they require short summaries of key actionable messages and solutions to problems arising from research.

'Knowledge brokers' – individuals with some training in economics and health services research, but also comfortable in a policy-making environment – can help filter the many different types of information that constantly bombard the political and policy-making processes. The MHEEN network, bringing together not only individuals with a background in health economics, but also those in psychiatry and mental health policy-making with an interest in health economics, can help to foster the development of such knowledge brokers.

MHEEN network members have been able to pass on knowledge and experiences within their own countries, helping to enhance the capacity to understand the role of economic evidence. Importantly, knowledge brokers like MHEEN network members can help play a role in tackling some of the common myths held in the medical community (for example) about health economics; notably the mistaken view that it is a tool for denying individuals access to effective interventions.

7. Recommendations

The starting point for our interest in the economics of mental health is clearly scarcity: it is the recognition that there are not, and indeed there never will be, enough resources available to meet all of a society's mental health needs. In making choices we would therefore want decision makers to be explicit and transparent about this scarcity, and about the criteria that they are employing in deciding how to choose between different uses of resources. Are they looking to maximise effectiveness in terms of symptom alleviation or promotion of mental well-being? Or are they aiming to redistribute resources to at-risk groups within society? Or are they trying to ensure that access to specialist services is equally available to everyone in need?

Whatever the criteria that are being used, economic evaluation has a role to play, because it brings together information on health and other outcomes of different courses of action – such as different allocations of available resources – with their cost impacts.

Relevance to various stakeholders

For service users and their families, such information can complement existing effectiveness information. For instance what might be the economic benefits of helping individuals return to work?

At another decision-making level, those who commission or purchase mental health services need economic data. A core element of local needs assessment and strategic service development concerns the resource implications of changes to, for instance, the hospital/community balance or greater investment in rehabilitation or employment related services.

Economic evaluations can also influence national-level policy and resource allocation decisions. Examples of evaluations that have influenced policy include studies of the substitution of community-based for long-term hospital care, the development of 'assertive outreach' models to keep people in contact with services, and the expansion of early intervention initiatives for psychosis. Trials of different drugs or psychological therapies that have included a cost-effectiveness component have also helped decision makers choose how to spend their budgets.

Expanding the evidence base

The number of new economic evaluations in the mental health field has continued to grow year on year, but it is still the case that most of these studies concentrate on medications. Within Europe there still is a disappointingly low level of work on mental health by economists, although today important non-pharmaceutical studies can be identified in countries such as Estonia, Germany, Ireland, Italy, the Netherlands, Norway, Spain, Sweden and the UK.

It is also the case that some diagnostic areas have attracted much more attention from economic evaluations than others. Areas that merit greater attention include child and adolescent mental health problems, anxiety disorders and personality disorders.

Expanding and adapting existing evidence

The need for additional information on the economic impact of interventions does not mean that we need to reinvent the wheel. One way in which additional information might be

provided relatively rapidly would be to add on an economic dimension to existing or planned studies on the effectiveness of different interventions and policy options. Supplementing these 'outcome studies' with the collection of data on the service use patterns, employment impacts and other economic consequences ought to make it possible for cost-effectiveness evaluations to be carried out. Another way to obtain economic insights is to adapt results obtained in one country so that they apply to a second country, making suitable adjustments for system structures, relative costs and the nature of economic incentives.

Longitudinal data sets, such as birth cohorts, have proved useful in identifying some of long-term (adulthood) economic consequences of childhood mental disorders, and there may be scope for further analysis of such datasets. It would also be helpful to see if the information already collected in routine surveys – by government or by a social insurance provider – could be adapted to make it more amenable to analyses that would offer economic insights.

Another approach, mentioned earlier, is to build decision analytical models. These are never likely to be able to substitute for prospectively conducted trials or careful statistical analysis of observational data on large samples of people, but these models are quite time-efficient and usually inexpensive to build. By varying the data used in the model it is possible to take account of uncertainty surrounding the measurement of the costs or outcomes.

Methodological challenges

Methodological challenges remain. In many respects, this need for methodological development applies across the whole health and social care spectrum, although there may be additional challenges to address when considering complex (non-pharmaceutical) mental health interventions. There is an important role for research designs that make better use of qualitative approaches to evaluation; these can helpfully complement quantitative research methods. These approaches might help to weave a better understanding of the impact of stigma and discrimination into economic evaluations, for example.

The many consequences of poor mental health imply careful consideration of the different measures of effectiveness. Using measures of 'utility' (such as the quality-adjusted life year or QALY) has been rather tentative in the mental health field, mainly because of uncertainty about whether the tools that generate the QALY scores are really applicable (Knapp and Mangalore 2008). Generic measures of quality of life are not always well suited to circumstances where mental health problems are the dominant need. More work is required to develop mental disorder-specific instruments that can fully capture quality of life gains. Instruments are also needed that can measure improvements in positive mental well-being in the population building (such as the recent developed Warwick-Edinburgh Well-being Scale; see Tennant et al 2007).

Improving linkages and exchange between research and policy-making

Quality notwithstanding, the use of economic evaluation in mental health policy and practice in Europe is still limited. The use of economic evidence has been stimulated by implementing formal 'fourth hurdles' to assess cost-effectiveness. It has also been helped by more multi-faceted approaches to dissemination including knowledge brokers. Even when these arrangements are in place, however, few mental health interventions have been subject to evaluation.

It is not easy to create opportunities to use economic evidence as one element in policy making. One need is to improve linkages between stakeholders and to promote greater understanding both of the purpose and of the results (including strengths and limitations) of economic evidence. This must involve engagement by economists with policy makers and other stakeholders in both the health and non-health sectors (such as social care, housing, education, employment and criminal justice). Capacity-building initiatives, such as MHEEN, might help to promote greater interest in and better understanding of the potentially powerful role that can be played by economic evaluation.

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About MHEEN

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