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 UNIVERSITY OF KENT
 AT CANTERBURY ■■■■

CEMH
 INSTITUTE OF PSYCHIATRY

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3 Mental Health Research Review

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The Personal Social Services Research Unit was established in 1974 at the University of Kent at Canterbury. This year two further sites have opened — at the London School of Economics and at the University of Manchester — with the aim of further strengthening the Unit's work on the economics of social care and policy and practice issues. The PSSRU is funded by the Department of Health, other government departments, the Economic and Social Research Council, charitable trusts and international social welfare organisations.

PSSRU research focuses on needs, resources and outcomes in social and health care: its concerns are resourcing, equity and efficiency from the perspective of users, agencies and others. A distinctive analytical framework called the 'production of welfare approach' has been developed by the Unit to illuminate such research. The PSSRU applies the approach in studies of a wide range of areas. Most of its work has been on what is loosely described as 'community care', but it has also worked on other areas such as in-patient health care, housing, income maintenance, criminal justice services, and the voluntary sector.

Details of PSSRU publications are shown opposite. For general enquiries about the PSSRU, contact Anne Walker on 01227 764000 ext. 7672.

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The Centre for the Economics of Mental Health was established at the Institute of Psychiatry in November 1993 with initial funding from the Bethlem and Maudsley Research Trust. Its research and other activities are supported by the Medical Research Council, the Department of Health and other funders.

The Centre promotes, conducts and disseminates health economics research in the field of mental health, broadly defined. Its central focus on mental health economics is, we believe, internationally unique. Researchers at the Centre are well-placed to make multidisciplinary contributions as well as applying the economist's evaluative techniques to the topic of mental health policy.

The current range of topics covered by the Centre's evaluative work includes drug therapies and compliance, residential care, services for treating drug misuse, interventions for depression, and child and adolescent psychiatry.

Other research interests include the application of econometric techniques in exploring variability in cost and outcome data generated in evaluative work and the use of contingent valuation surveys to assess mental health care outcomes.

For general enquiries about the CEMH, contact Daphne Hargreaves on 0171 919 3198.

To find up-to-date details of the PSSRU's work on the Internet, visit the Unit's World Wide Web site — <http://snipe.ukc.ac/pssru/>. The CEMH is at <http://www.iop.bpmf.ac.uk/home/depts/psychiat/cemh/cemh.htm>. Both pages include email facilities for staff and links to other useful Web sites.

The Mental Health Research Review No. 3

This third issue of the *Mental Health Research Review* is, like the two previous editions, a joint production by the Personal Social Services Research Unit (PSSRU), and the Centre for the Economics of Mental Health (CEMH) at the Institute of Psychiatry.

It describes research in the mental health field currently underway at one or both institutions. The aim is to summarise research objectives, methods and findings in a concise and readable form, as a general introduction to our work. The *Review* also serves as a reference point for the concepts and tools which are frequently employed in PSSRU and CEMH studies of the economics of mental health.

The *Review* is sent free of charge to local authorities and health authorities and to interested individuals in the UK. Further copies can be ordered from Daphne Hargreaves at the CEMH (0171 919 3198) or Lesley Banks (01227 823963) at the PSSRU. There are limited copies available of issue two (edited by Daniel Chisholm and Alan Stewart); issue one (edited by Justine Schneider) is out of print.

Enquiries about individual articles should be made to the authors concerned. General comments on this issue of the *Review* can be addressed to the co-editors: Jennifer Beecham (CEMH/PSSRU) and Andrew Healey (CEMH). The views expressed are not necessarily shared by bodies funding the research.

Enquiries about PSSRU and CEMH research programmes in mental health should be addressed to Martin Knapp, Director of the CEMH and Professor of Health Economics.

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Other publications from the CEMH and PSSRU

A selection of CEMH working papers, PSSRU discussion papers, and journal articles are detailed on pages 22-23. The PSSRU also publishes a book series in conjunction with the Ashgate imprint; monographs; and newsletters on various subjects:

- A new issue of the *PSSRU Bulletin* (number 10) will be available in June 1996, covering the Unit's work as a whole. Back issues of some previous editions are available.
- The fourth *Mixed Economy of Care Bulletin* (a joint production with the Nuffield Institute for Health at the University of Leeds) will also appear in June 1996.
- The PSSRU ECCEP project (Evaluating Community Care for Elderly People) publishes occasional newsletters.

For enquiries, publication lists, and orders, please contact Daphne Hargreaves for the CEMH (telephone 0171 919 3198) or Lesley Banks for the PSSRU (telephone 01227 823963).

Introduction

Martin Knapp

The mental health research programmes of the Personal Social Services Research Unit (PSSRU) and the Centre for the Economics of Mental Health (CEMH) have many roots. Some current activities are built carefully on many years of accumulated activity — part theoretical, part empirical, part personal interest of the researcher(s). Some other activities are new departures, often initiated from outside the PSSRU or CEMH. They include invitations to join a research consortium bid, urgent help needed with the economic aspects of an ongoing trial, and exciting new ideas sparked by informal discussions.

The articles and notes in this third issue of the *Mental Health Research Review* reflect this span of origins. Some — such as the long-running study of psychiatric reprovision in North London, and the survey of residential mental health accommodation — will be familiar to readers of previous issues of this *Review*. In contrast, the articles on employment programmes and the review of economic evaluations in relation to drug misuse draw on newer ventures.

In describing what economics has to offer the purchaser and provider of mental health services, and the policy-maker and commentator, it is helpful to remember the many sources of demand for economic insights and evaluations. Four groups of demand can be identified.

Accountability Costs and other economic data, including service and treatment outcomes, are needed for performance reviews, value-for-money audits, efficiency scrutinies and the like. Accountability to the taxpayer and — increasingly — to the patient or user are the prime motives. Few economists would describe these long-standing demands for their skills as generating the most exciting work they will ever undertake, but these are important reasons for a close and careful look at costs and cost-effectiveness.

Policy Many policy changes, redirections and discussions generate demands for economics research. A good example is the shift from hierarchical, top-down, provider-led services to the post-1990 Act world of macro-planning, delegation of case coordination responsibilities, and purchaser-driven priorities. Information is needed on how to price services, how to compare costs across alternative treatments, how to adjudge trade-offs between higher costs and greater effectiveness, how to respond to price or output changes of other providers or to purchasing changes of other buyers, and so on. And all of the changes initiated by the 1990 Act need to be evaluated. A lot of the work of the PSSRU is commissioned by the Department of Health with national policy issues in mind, and increasingly the research programme at CEMH has a policy focus. However, with the exception of the UK and the US, relatively few countries have made more than tiny strides towards a situation in which mental health policy discussion is regularly informed by economics evidence. Moreover, there have been few demands for economics insights beyond the cost dimension in evaluations (Knapp, 1996).

Practice The ‘care programme approach’ is being implemented in the UK to encourage the integrated and coordinated assessment of need for service users and the deployment of effective interventions to meet those needs. More generally, clinicians, social workers and other professionals working in the mental health care system are daily having to make choices both *within* and *between* treatment modes and placement types. Implicitly or explicitly they are often making choices between different diagnoses or mental health problem areas. A

huge number of practice questions are raised, many of which could benefit from having an economic perspective.

Product development and distribution General practitioners in Britain have widely different approaches to drug prescribing. The NHS Executive has encouraged them, and all other health professionals, to practice evidence-based medicine, and to see cost-effectiveness findings as a relevant part of that evidence stock. In a linked field, the NHSE has strongly urged pharmaceutical companies to undertake valid, robust economic evaluations of new pharmaceutical products to justify their utilisation. A further demand for mental health economics naturally comes from this source.

By no means all of these recognised 'needs' for an economic perspective currently get translated into funded research. However, it is becoming more common for the Department of Health, the Medical Research Council and some medical research charities to encourage and finance health economics research to meet these accountability, policy, practice and product development demands.

In the year since *MHRR2* was published there have been exciting new developments at PSSRU and CEMH. Some are described elsewhere in this issue, such as the publication of *The Economic Evaluation of Mental Health Care* by Arena (see back cover), the completion of a number of important projects and favourable decisions on new research grants. There has also been the successful establishment of two new PSSRU 'branches' — one at the London School of Economics (from January 1996) and the other at the University of Manchester (from March 1996). The coming year will, I hope, bring further excitement, although the ability to work in two parallel universes would make it easier to cope with that excitement and to complete the necessary tasks!

This third *Review* has been energetically and skilfully put together by Jennifer Beecham and Andrew Healey, and Nick Brawn has again brought his skills to bear on the design and sub-editing. My thanks to them, and to those who have contributed papers.

Reference

Knapp, M.R.J. (1996) Developments in the economics of mental health: encouraging a broad research agenda, *International Review of Psychiatry*, Volume 2, American Psychiatric Press, forthcoming.

Current DH-funded Research at the PSSRU

- analysis of the OPCS Survey of Psychiatric Morbidity, looking in particular at service utilisation, costs (both descriptive and predictive), and funding and the mixed economy (contact: Shane Kavanagh and Martin Knapp)
- the role of employment and meaningful occupation for people with severe mental health problems, a study of the costs and short-term benefits of several different work schemes (contact: Angela Hallam and Justine Schneider)
- monitoring the development of the mixed economy of mental health care, new providers, new funding and new incentives (contact: Martin Knapp, Jennifer Beecham and Justine Schneider)

Characterising mental health: implications for health economics research

Daniel Chisholm

Introduction

Economic analysis has only been explicitly directed towards health care in the last twenty-five years or so, but has now established itself as having an important role in the planning, management and evaluation of health care. A CEMH/PSSRU workshop was held to stimulate discussion on two questions:

- what is distinctive about mental health or mental health care?
- what are the implications of any distinctive characteristics for health economics research?

What follows is the product of this brainstorming session. Clearly such an exercise runs the risk of over-generalisation, and indeed it would not be hard to find the exception (in other sectors of health care) that disproves the rule (namely the generic features accorded to the mental health sector). However, the approach was singularly successful in enabling us to develop an agenda for mental health economics research that would focus on the particular attributes of mental illness and mental health care.

The nature of mental disorder

Heterogeneity and uncertainty One of the inherent characteristics of mental disorder is its heterogeneity, in terms of its aetiology and the behavioural symptoms manifested by sufferers. There is a consequent unpredictability and uncertainty surrounding decisions regarding the diagnosis, prognosis and treatment of a person with mental health problems that, if not unique in health care, is far in excess of all but a few somatic disorders. Put another way, whilst there is as much uncertainty in mental health as there is in other health sectors with regard to *when* illness will occur, the mental health professional — or society in general — faces an unusually high level of intrinsic uncertainty with regard to *how* a mental illness is to be defined, assessed and managed.

Causal multiplicity The influences that potentially contribute to mental disorder are numerous, and competing theoretical models have disputed the emphasis to be given to individual and social influences, nature versus nurture, and biological or psychological factors. As a comprehensive model of the causes and effects of mental illness and its treatment, the bio-medical tradition has been found increasingly wanting. Sociologically-based explanatory models have been advanced which have gone beyond the quite strict confines of disease detection and looked to personal and cultural reactions to disease for a greater understanding of mental illness. Epidemiologists and public health professionals have stressed the significance of deprivation, poor housing and unemployment as causal factors. Whatever the make-up, the complexity and multiplicity of potential causal factors sets the mental health sector apart from other areas of medicine.

Chronicity Mental illness tends to be of a more long-standing, chronic nature than all but a few somatic disorders. Episodes of mental illness can last many months or even years before symptoms diminish, and periods of illness and relapse may be repeated over a lifetime. For instance, people who are depressed and who have experienced two or more episodes in the preceding five years have a 70 to 80 per cent chance of experiencing a further two or more episodes during

the subsequent five years (Angst, 1992). Over time, therefore, mental disorder presents a different profile of resource allocation and consumption to many somatic disorders. This long-term, comprehensive view of the costs of illness is most pertinent, and the virtues of prevention or early intervention most apparent, in child psychiatry: the future costs of delinquency may far outweigh the costs of treatment at an early age.

Features of mental health care

Life-improving (rather than life saving) Mental health care contrasts with many areas of medicine in which prolonging life is a main aim. Rather, and with the obvious exception of suicide prevention, mental health care is principally aimed at extending or improving *quality* of life. This role is reflected in the first of the *Health of the Nation* mental health targets, which is 'to improve significantly the health and social functioning of mentally ill people' (DH, 1993). Of course, the life-saving role is important: the national suicide rate per hundred thousand stands at eleven, compared to between two and five thousand for people with a depressive disorder (DH, 1993). However, the life-improving nature of mental health care indicates the particular need for outcome measures other than ones directed towards improved life expectancy.

Measurement of outcomes The intrinsic uncertainty associated with both the aetiology of mental illness and the clinical efficacy of treatment is also at the root of the difficulties in developing valid and reliable outcome measures in mental health. For example, the outcomes relevant to evaluating services for people with schizophrenia are likely to include psychiatric status, general health status, access to community resources and opportunities, and sense of wellbeing (Lehman, 1995). A further complication is that outcomes often compare one person's mood and behaviour to some socio-cultural 'norm' (Hunt and McKenna, 1993): the definition of what constitutes societal norms in terms of, say, quality of life, is imperfect, to say the least. The main 'product' of economic approaches to outcomes research, the Quality Adjusted Life Year (QALY), has rarely been used in the sector, and so far not very successfully (see, for example, Wilkinson et al., 1990). Cost-utility analysis to date has been difficult to apply to the mental health sector, partly because the commonly used two-dimensional matrix of disability and distress is insufficient to capture the full spectrum of problems associated with mental illness (Chisholm et al., 1996). The recently developed EuroQol, with its five-dimensional profile, may prove to be more sensitive to changes in mental health (EuroQol Group, 1990).

A mixed economy of care The provision of mental health care is undertaken within a number of very different settings (psychiatric and general hospitals, the community, the home) and by many different principal carers (psychiatrist, CPN, GP, social worker, spouse, relative). Defining where one set of responsibilities ends and another starts is of critical importance to the continued and safe care of people with mental health problems. This organisational complexity in the provision of mental health care is partly a reflection of the multi-dimensional causes of mental ill-health and partly a result of delineation of administrative functions and operational boundaries. The consequence for individuals is that support comes from several sectors (hospital and community health services, social services, social security, voluntary, independent, informal). This 'mixed economy of care', together with the speed at which changes are occurring, presents a special challenge to professionals working to support people with mental health problems (Beecham, Knapp and Schneider, 1996).

Agency relations The agency relationship between doctor and patient is fundamental to all health care provision. The doctor carries the status of agent,

bridging the gap in technical knowledge necessary to make an informed decision about the costs, risks and possible outcomes of health care interventions. However, in mental health care there are certain aspects of this relationship that are particularly concerning. The first of these relates to the status of the consumer, who is normally considered lacking in knowledge regarding alternative treatments and outcomes, but capable of making rational choices once that information is provided. Individuals suffering an episode of mental illness, however, may not be considered able to make reliable or valid judgements, thereby making the agent/psychiatrist's position even stronger when specifying the consumption and focus of care. A second aspect of the agency relationship is the influence of diagnostic 'labelling', both on patients' welfare and in the way they are perceived by others. Psychiatric labels stick, and may even adversely contribute to the behaviour pattern (for example, exacerbating suicidal tendencies). Finally, there is a significant ethical dimension to agency relations in mental health, epitomised by the philosophical, legal and clinical issues raised in relation to the issue of informed consent. Bloch and Chadoff (1991) identify other ethical issues confronting the practising psychiatrist.

Public perception: A heady mixture of ignorance, misunderstanding and fear serves to put mental health in a category of its own in terms of public perception. The psychiatrist's couch and the madman's hallucinations remain as perennial caricatures which alarmist reports in the media only serve to reinforce. Stigmatisation manifests itself at the point of delivery by suspicion of therapies, therapists and treatment centres such as the old-fashioned asylums. Public perception of mental illness can be characterised by ambivalence; on the one hand, an inherent sympathy for people unfortunate enough to suffer from mental health problems and on the other, alarm or condemnation when they behave anti-socially or commit crimes. Consideration of these views is important, since adverse perception is liable to have an effect on the way resources are allocated (for example, supervision registers) and to impede the demand for and access to services, as people in need of care are dissuaded from making contact with services for fear of ridicule, labelling or incarceration.

Implications for research

Comparatively little health economics research has been conducted in the field of mental health (O'Donnell et al., 1988; Knapp, 1995). Much of the work already undertaken has attempted to estimate the costs of mental illness or explore the relative cost-effectiveness of providing support and treatment.

Following the arguments set out above, health economics research could be usefully directed at the following areas of concern (see also Beecham and Knapp, 1995, for other areas of 'unfinished business').

- *Developing models of choice under uncertainty*, which could lead to improved decision-making for alternative interventions (such as drug therapies when side-effects are a possible but uncertain outcome).
- *Developing alternative methods of defining case mix groups*, in an effort to reduce diagnostic fallibility and cost variation.
- *Examining socio-cultural variables* (such as ethnicity, culture or gender) as potential influences on treatment, outcome and their associated costs.
- *Exploring temporal considerations*, with particular reference to the long-term benefits of prevention or early intervention, and the valuation of temporary and chronic health states.
- *Measuring and valuing quality-orientated outcomes*, in a bid to improve the evaluation of the impact of services on individuals' lives.
- *Analysing the mixed economy of care*, with a particular focus on the effects of different care settings and agents on long-term outcomes.

- *Exploring the effects of negative public attitudes and perceptions* in mental health care, particularly in relation to analyses of the demand (versus need) for health care.
- *Evaluating policy initiatives* aimed at improving the safety of the general public, carers and people with mental health problems.
- *Examining the (potentially conflicting) economic and ethical perspectives* in mental health care, in order to make more explicit the bases upon which resource allocation decisions are made.

Thanks are due to all those who participated in the CEMH/PSSRU workshop (Martin Knapp, Jennifer Beecham, Justine Schneider, Andrew Healey, Catherine Topan and Sandra Semple), on which this article is based. Responsibility for the elucidation and interpretation of views expressed rests with the author.

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The four principles of cost research

Four basic principles should be followed in applying and analysing costs

- Costs should be comprehensively measured to range over all relevant service components of the programmes or treatments under consideration
- Cost variations between service users, facilities and sectors should be explored to provide policy and practice insights through comparisons and contrasts, but ...
- Comparisons should only be made on a like-with-like basis to ensure that they are valid
- Costs should be placed in context by presenting relevant evidence about individual characteristics, needs and outcomes

A fuller discussion of costing principles can be found in the introduction to the new PSSRU book *The Economic Evaluation of Mental Health Care* (see back cover for details).

Costs and outcomes for people with special psychiatric needs

Angela Hallam

As the psychiatric hospital closure programme gathers momentum, an increasingly disabled population of 'new' long-stay patients accumulates in the remaining wards. These people were identified twenty years ago as the most difficult to support outside hospital (Mann and Cree, 1976) and they are characterised by severe symptoms of mental illness and a range of additional behavioural and social problems (Shepherd et al., 1994). If the policy aim to relocate all long-stay hospital care is to be accomplished, the nature of the challenges presented by the special needs of this group of patients must be acknowledged and addressed.

The Friern and Claybury hospital closure programme

The relocation of psychiatric services from two Victorian hospitals in North London has been evaluated in an extensive programme of research which started in 1985. The Team for the Assessment of Psychiatric Services (TAPS) is responsible for the demographic, social and clinical elements of the study, and a cost-effectiveness evaluation undertaken by the Personal Social Services Research Unit (PSSRU) has been closely associated with the TAPS work from the beginning. (This economic evaluation is now conducted from the Centre for the Economics of Mental Health.) Client-specific outcomes and service receipt data for each annual group (or cohort) have been collected and examined one and five years after the index discharge, the latter allowing calculation of the costs associated with community care.

The special needs group

The existence of a group of patients in Friern hospital who would be 'in continuing need of long-term highly supported care' was highlighted halfway through the reprovision programme. Reporting on a small group of study clients readmitted to hospital on a long-term basis, Dayson et al. (1992, p.993) noted that unsuccessful community placements were characterised by a deterioration in the person's mental health and aggressive behaviour, 'both of which persisted and necessitated their continuing stay in hospital, often in a locked ward'.

Cohort 8 was the final group to move from Friern Hospital before its closure in 1993. Within this cohort, 72 people were identified as having special problems which would mean they were difficult to place in the existing range of community facilities. These people required the intensive levels of support only to be found in hospitals or hospital-like facilities. The senior nursing staff who had made these decisions were asked by the TAPS researchers to specify the problem behaviours felt to impede community resettlement. Aggressiveness, non-compliance with medication and inappropriate sexual behaviour were the most widely reported. The frequency and severity of these behaviours were then rated for each of the patients by TAPS researchers.

Since 1985, all long-stay patients have undergone a comprehensive psychiatric and social assessment before leaving hospital (details of the schedules are given in O'Driscoll and Leff, 1993). It was possible, therefore, to compare the group which had been identified as 'difficult to place' with details available for the rest of the long-stay hospital population. The average age of the former group was

45, considerably lower than the rest of the study clients, and 65 per cent of the group was male. They had a significantly shorter average length of stay in hospital (33 months compared with 80 months) and had poor social and basic everyday living skills. It is, however, extreme types of challenging behaviours which particularly distinguish this group from the other clients in the study (Trieman and Leff, 1996).

The three 'receiving' health authorities adopted different ways of providing accommodation and on-site care for people identified as requiring intensive levels of support.

- a Victorian house with twenty places in a residential area, close to the general hospital which manages the unit and which provides some services to residents;
- three purpose-built houses accommodating 28 residents in the grounds of a psychiatric hospital;
- a 'special needs' ward with twelve residents and a rehabilitation ward with sixteen residents, both in the psychiatric wing of a general hospital.

The costs of care

Costs were calculated for 63 members of the special needs group one year after discharge from Friern Hospital. At each of the settings, the PSSRU researcher (Angela Hallam) interviewed a member of managerial staff about the facility and services used by the residents, both on site and in other locations. Financial data were also collected, which allowed us to build up a detailed and accurate picture of the full costs involved in construction or refurbishment, development of the service up to an operational level, and provision of care for the residents. To maintain confidentiality (a condition of accessing the accounts information), the mean costs of service packages across *all* facilities are reported.

The average total cost of supporting people in the special needs group was £1065 per week (1994-95 prices), 94 per cent of which relates to accommodation facility costs. The units are staffed almost entirely by qualified nurses, and the nurse to resident ratio was as high as 1.7:1 in two of the facilities (Trieman and Leff, 1996). These two factors have a large effect on cost. Although the capital and set-up costs were high compared with other facilities, they represent less than ten per cent of the accommodation cost. The figure of £1065 per week for members of this group compares with an average community cost of £766 per week for other Cohort 8 members. Bearing in mind that people in Cohort 8 were the last to move to community placements and had higher levels of needs than previous leavers, the difference in cost between the two groups is considerable. To put the figures in perspective, the average community care cost for all 688 people leaving hospital in cohorts 1-8 who were *not* identified as having special needs was £575 per week.

Table 1 shows the number of people in Cohort 8 using non-accommodation services, and their associated costs per week. Although these services account for a small proportion of the total community costs for the former long-stay hospital residents, they are an important part of a comprehensive care package. Such services can respond to those clients' needs which cannot be met within the accommodation unit. As has been the case with all study members, almost every person in Cohort 8 who was not in the special needs group had been in contact with a general practitioner during the previous year. Community chiropody and optician services were used by more than half these clients and, in general, the picture is of a number of people receiving services from a range of professionals.

The people identified as having special needs, in contrast, made little use of services outside the accommodation facility, although many of the services listed

Table 1
Use and weekly cost of non-accommodation services for cohort 8 members¹

Services	People identified as 'difficult to place' (n = 60)		Other Cohort 8 members (n = 46)	
	Number using service	Mean weekly cost (users only) £	Number using service	Mean weekly cost (users only) £
Hospital outpatient	3	13.57	11	2.57
NHS daycare	10	51.34	9	45.20
Hospital inpatient	2	531.97	3	371.21
GP	4	0.93	44	2.23
Chiropody	4	0.68	33	0.98
Dentist	19	0.21	18	0.72
Optician	4	1.87	27	1.56
Occupational therapy	1	0.90	10	20.31
Psychiatry	37	35.83	18	6.76
Psychology	2	10.17	14	1.73
Social services daycare	4	102.70	4	58.44
Field social work	3	88.48	12	4.48
Voluntary organisation daycare	1	6.22	1	93.40
Case review	1	6.96	10	6.34

Note

1 Sample sizes refer to the number of people for whom we have detailed service receipt information. Costs are expressed at 1994-95 prices.

in table 1 are available from staff working within the units (two of the facilities have one or more psychologists on the payroll, and one has two occupational therapists). Sessional psychiatric input (for more than 60 per cent of the clients) appears in the table because the financing arrangements are separate from the accommodation budgets, even though the service is provided on-site. However, dentistry services and NHS daycare are used by more than 16 per cent of the group, so a few residents make service contacts outside the accommodation units.

Client outcomes

The progress of the special needs group was assessed by the TAPS researchers one year after relocation. No overall change in mental health was recorded and there were only minor gains in social and basic everyday living skills. Social networks had also remained static. The profile of severe behavioural problems was found to have changed over time, with one third of the total problems subsiding and a similar number of new problems emerging. However, an overall reduction in the frequency of aggressive behaviour was recorded, particularly within the least restrictive setting (Trieman and Leff, 1996).

Conclusion

The high levels of expenditure on the care of the special needs group may be justified by these outcome findings. Although there was no improvement in clients' psychiatric state, no deterioration had been recorded either, so the move from Friern Hospital was accomplished without specific adverse effect. It is

possible that the new behavioural problems recorded at follow-up are due to increasing exposure to the neighbourhood outside the hospital and to a greater sensitivity to these problems in a smaller, more interactive environment than the hospital (Beecham et al., 1996). The challenging behaviours of this group of clients have at least been contained and, in the case of aggression, partially ameliorated. This is an encouraging finding, given that violence was identified as the problem most likely to impede successful placement outside the hospital.

The research reported in this article was undertaken with Michelle Asbury, Barry Baines, Jennifer Beecham, Andrew Fenyo and Martin Knapp, and in association with the Team for the Assessment of Psychiatric Services. We are particularly indebted to Dr Noam Triemen at TAPS, who has a particular interest in this client group. Grateful thanks are also extended to the staff and users of each service.

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Efficiency and Effectiveness in the Delivery of Community Care

Researchers at the Centre for the Economics of Mental Health recently collaborated with the Social Work Research Centre at Stirling University in their research programme to monitor the implementation of the community care reforms in Scotland. The evaluation for which CEMH provided costs data focused on care management arrangements in four Scottish regions, identifying two discrete models — the 'role' and 'task' approach to assessment and case monitoring. Our remit was:

- to calculate the costs attributable to the process of needs assessment for each of the 247 study clients;
- to describe and cost the components of the individual service packages received by clients during the following nine months, and to examine these service packages for any links with the length and cost of the assessment process;
- to integrate data on the costs and components of individual care packages with the needs and risks identified by the practitioner who undertook each assessment.

The final report was submitted to the Scottish Office in February 1996, and will be discussed further with them. A programme of dissemination will follow. For details of the economic evaluation, please contact Angela Hallam at CEMH (0171 740 5326). Professor Alison Petch, Nuffield Centre for Community Care Studies, University of Glasgow (0141 330 5600) directed the overall study.

The costs and benefits of treating drug misuse: an overview of the evidence

Andrew Healey and Martin Knapp

Background

The government consultation document *Tackling Drugs Together* reaffirms the political and social concern about drug misuse (Department of Health, 1994). The scale of identified government expenditures to deal with 'the drugs problem' provides further evidence of this. This document estimated that £526 million in 1993/94 was spent on a range of demand and supply-side policies including: police/customs enforcement; international action; deterrence/controls; prevention/education; and treatment/rehabilitation. A relatively small proportion of expenditure, £61 million, was allocated specifically to the treatment and rehabilitation of drug misusers. The NHS was given £25.2 million to spend (personal communication, Department of Health) to which must be added private and voluntary projects financed with a mixture of other NHS and local authority money, voluntary contributions and out-of-pocket payments.

Tackling Drugs Together states that one key policy objective is to ensure 'drug misusers have access to a wide range of advice, counselling, treatment, rehabilitation and after-care services.' From an economic viewpoint, it is important that decision makers are made aware of the consequences of investing scarce resources in these areas: are the costs of rehabilitation programmes, inpatient treatment and methadone prescribing worth their benefits in terms of longer lives and/or better health for drug misusers, and in terms of reduced expenditures on health and social care, and reductions in other costs resulting from addiction, including those arising from crime? Or would public finances be better spent on different health and social care interventions — or perhaps not spent at all, allowing tax cuts?

Overview of the evidence

The overwhelming impression from our literature search is that there is very little evidence which policy makers can draw on, with the most ambitious economic appraisals of drug addiction treatment having been conducted in the US. Our review extended to studies concerned with treatment programmes for the misuse of all illicit substances. We attempted to be as comprehensive as possible, using the Medline literature database, the reference base held at the library of the Institute for the Study of Drug Dependency (ISDD), and those quoted in the general literature, although it is inevitable that some relevant studies will have been missed. Readers are also referred to a recent review article by French (1995).

Nine economic evaluations were found and categorised according to the type of economic evaluation adopted. Five could be classified as cost-benefit analyses (CBAs) to the extent that costs and benefits were valued in monetary terms, although in most instances they were not comprehensive in their valuation of the benefits to society. Two evaluations used cost-effectiveness analysis (CEA). Two studies focused on intervention costs; they did not attempt to fully appraise the policy options of treatment alternatives, but usefully addressed methodological and practical issues surrounding the costing of addiction services. Box 1 provides a summary of these studies.

Box 1

Economic evaluations of treatment services for the misuse of drugs

Cost-benefit analyses

CBAs of the closure of public methadone programmes in California during the 1980s suggested that, on balance, closure policies could not be justified on economic grounds^{1, 2}. Elsewhere, evidence from the Treatment Outcome Prospective Study (TOPS) and the Californian Drug and Alcohol Treatment Assessment study (CALDATA) concluded that publicly-subsidised treatment programmes for drug misuse, including residential programmes and outpatient drug-free and methadone-based interventions, represented worthwhile investments of resources^{3, 5}. A further analysis of follow-up data from the TOPS study found that time spent in these treatments had a positive impact on client labour market participation⁴.

Cost-effectiveness analyses

Although not strictly a cost-effectiveness study (the treatment programme was not compared with a policy relevant control group), a Scottish study of a new primary care based methadone programme presented an estimate of the weekly cost of the service with before-and-after evidence suggesting reductions in heroin use among programme participants⁶. An American randomised controlled evaluation of inpatient versus day hospital-based rehabilitation for cocaine addiction found the latter to be more cost-effective, although the more expensive inpatient service proved to be cost-effective for a sub-sample of patients with motivational and/or physical and psychiatric problems⁷.

Cost-studies

The costs incurred by state and federal governments were analysed in a study of 22 private and three public methadone programmes in Australia⁸. Differences in cost-per-client estimates were found across the three public methadone programmes. Various hypotheses were put forward for these differences including variability in client characteristics, input prices, and efficiency in the delivery of services. Private clinics were generally more costly due to their use of private pathology laboratories for toxicology testing which could not offer the economies of scale found in the larger laboratories used by the public methadone clinics. A study of the Leeds Addiction Service combined detailed information on clients' use of the various service elements (including inpatient and community-based methadone treatment) with unit cost estimates⁹. The implications of the variability in costs across clients and between the various service elements are discussed with reference to determining prices for addiction services.

Notes

1 McGlothlin and Anglin (US, 1981)

2 Anglin et al. (US, 1989)

3 Hubbard et al. (US, 1989)

4 French and Zarkin (US, 1992)

5 Gerstein et al. (US, 1994)

6 Wilson et al. (UK, 1993)

7 Alterman et al. (US, 1994)

8 Baldwin, (Australia, 1987)

9 Coyle et al. (UK, 1994)

See the list of references at the end of this article for further bibliographic details.

Some research issues

Experimental design The gold-standard of evaluative research design is the randomised controlled trial (RCT). This design was adopted, for example, in the study conducted by Alterman et al. (see box 1) in their assessment of day-versus in-patient treatment for cocaine addiction. There have been two main objections to the use of RCTs in evaluating services for drug misusers. First, they lead to the creation of experimental conditions that are unlikely to resemble real services — which will vary markedly in their approaches to treating drug addiction. Second, drug misuse services tend to have a strong self-selection element, and poor compliance with treatment assignment has been experienced. (Hubbard et al., 1989, provide a more detailed discussion of these problems). More pragmatic approaches to research design, including naturalistic studies, are more common in this field of evaluative research and are likely to represent a more fruitful method of service appraisal.

Costing treatment services Economists recommend calculating the long-run marginal costs of treatment services (the cost of treating an additional client). This gives policy makers an estimate which includes the cost implications of capital investment and other resources required to expand the service beyond its current capacity. Economic costing should almost always be conducted from a societal perspective, which means that any direct costs incurred by clients in attending treatments for drug misuse should be identified and (where possible) valued. These will include the financial and time costs (either work or own time) used in travelling to, and participating in, a programme of treatment. Other client costs are harder to value and include the physical and psychological effects of detoxification experienced during treatment.

The benefits of treatment Reductions in drug misuse, either through abstinence from all drugs or the successful substitution of illicit substances with prescribed substitutes, could confer a wide range of benefits to society that need to be valued. These include reductions in criminal activity and its associated cost, and the decreased use of medical and psychiatric services. Clients themselves can also expect to live longer and healthier lives. A major challenge for economists is to value these client-centred treatment outcomes so that a comprehensive assessment of the social worth of drug misuse services can be made.

Conclusion

The lack of relevant evaluative evidence on the costs and outcomes of services for drug misusers is worrying, particularly as demands are increasing for evidence on the value-for-money of health and social care services. Without economic evaluations, purchasers run the risk of failing to promote cost-effective drug misuse services, and maintaining existing services or investing in new ones that are of limited value to society when compared with what has to be sacrificed elsewhere in the health and social care domain. Equally troublesome is the thought that drug misuse services may become marginalised where evaluative evidence is not available, a process compounded by the tendency for much political and media coverage to focus on the social and crime consequences of drug misuse rather than the circumstances and needs of those who misuse drugs.

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Related research

This review of the evidence on the economic viability of treating substance misuse was undertaken as part of a study commissioned by Department of Health. The CEMH, in collaboration with the National Addictions Centre at the Maudsley Hospital, is conducting an economic evaluation of different types of publicly-financed treatments for people misusing heroin and other substances (the National Treatment Outcome Research Study — NTORS).

The treatments under evaluation are methadone programmes (including methadone maintenance, structured maintenance and reduction); in-patient services; and residential rehabilitation.

Research started in early 1995 and preliminary findings will be published by the Department of Health in 1996. Full results will be available in 1997. Please contact Andrew Healey at CEMH (0171 740 5322) for further details of the economic evaluation.

King's Fund London Commission

As part of the reconvened King's Fund London Commission, CEMH is carrying out work for the Mental Health Support Group. The remit of this work is to estimate the resource gap between actual and required levels of provision in the capital as a whole, and to draw out the resource implications of alternative service configurations, using more detailed information on existing local services in a number of case-study areas and incorporating service models or developments that are indicative of 'good practice'.

Nicotine skin patches — are they cost-effective?

Ana Lowin

Smoking-related mortality in the UK

The prevalence of tobacco smoking in the UK has been steadily declining at an average rate of about 1 per cent per year. Despite this reduction, cigarettes are still the single greatest cause of premature morbidity and mortality in the UK. It is estimated that about 95,000 deaths per year (18 per cent of the total) are smoking related, with an average of 20 years of life lost (for deaths between the age of 35-69). The *relative* risks and costs of morbidity and mortality, however, fall significantly when smokers give up. For example, a person who has smoked for the last 35 years has three times the risk of dying of lung cancer as someone who smoked for 25 years and then gave up for ten. In the face of these mortality risks, the government has made cessation of smoking a key health target, with the objective of reducing prevalence to 20 per cent by the year 2000.

Nicotine Replacement Therapy

Two key components of smoking cessation are motivation and treatment. Although a small proportion of smokers are able to quit unaided, many will need treatment to augment their motivation. Over and above the impact achieved by support and counselling (typically pioneered in specialised smoking clinics), the most influential intervention has been Nicotine Replacement Therapy (NRT). The two NRT products available in the UK are nicotine gum and nicotine patches (nasal spray and inhaler are yet to be clinically licensed). No form of NRT accurately reproduces the pleasurable surge in plasma nicotine obtained by smoking, but by direct absorption into the systemic circulation, NRT can produce sufficient nicotine concentrations in the blood to reduce some of the withdrawal symptoms of cessation.

NRT trials to date vary considerably in terms of design, setting, treatment regimens (dosage and duration) and outcomes, making comparison across the various studies difficult. However, these studies have tended to focus on highly motivated, dependent smokers (more than fifteen cigarettes per day) and have demonstrated that NRT doubles the rate of cessation over the placebo. The study on which this economic evaluation is based was a randomised controlled trial of transdermal nicotine patches prescribed in general practice, directed by Professor Michael Russell of the Institute of Psychiatry (Russell et al., 1993; Stapleton et al., 1995). 1200 subjects, men and women aged 20-60 who smoked at least fifteen cigarettes a day, were recruited in 30 general practices in fifteen English counties. They received brief GP advice, a booklet on smoking cessation with nicotine patches, and a sixteen-hours per day patch for eighteen weeks. Two thirds of the subjects were randomly allocated to receive active patches (delivering an average of 15mg nicotine) and one third to receive placebo patches. Subjects who were still smoking or experiencing difficulty with cessation after one week received a dose increase — an additional smaller patch, which had been randomized at entry to be either active or placebo. Gradual versus abrupt withdrawal of the patches after week 12 was also randomized at entry to the study. Follow-ups were conducted at regular intervals over the subsequent year.

The quitter rate (defined as the proportion of subjects who did not smoke at all through weeks 2 to 52) was 9.6 per cent in the active treatment group, compared to 4.8 per cent for the placebo group, a consistent finding across the 30 GP practices. All quitters in the active group had managed to quit by the end of the

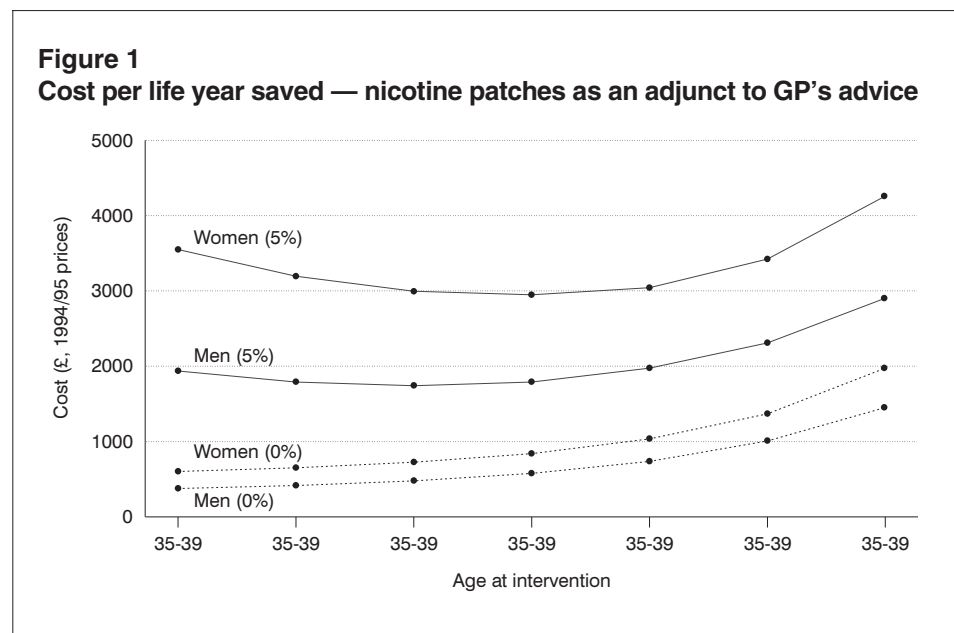
first week. Results showed that no extra benefit accrued to the active patch group after week 3, although the continuation of treatment may have been necessary to avoid relapse in that half of the active group who otherwise would not have achieved cessation. No sustained effect was evident from dose increase or from the gradual as opposed to the abrupt withdrawal. Neither age, occupation, number of previous attempts to quit, or motivation to quit had significant effects on outcome. However, men were more likely to quit than women and duration of previous abstinence also predicted outcome (Stapleton et al., 1995).

Economic evaluation of nicotine skin patches

The economic evaluation examined the cost-effectiveness of nicotine patches (NP) when used in general practice (Lowin, 1995), using the definition of quitter and data on level of counselling from the trial protocol. The evaluation was concerned primarily with the mortality implications of smoking, and no attempt was made to estimate the impact of NP on all the social costs of smoking. The principal direct cost components of the study included the patches themselves, explanatory booklets and counselling time with GPs and nurses. Costs have been calculated on the assumption that all study members continued to attend throughout the study period, which was not always the case.

The results are described both in terms of cost per quitter and cost per life year saved, the latter allowing comparison with a range of other interventions. Conversion from numbers of quitters to number of life years saved was based on calculations made by Oster et al. (1988). Two kinds of calculation are made for both cost per quitter and cost per life year saved: first, the incremental cost-effectiveness of the treatment regime (NP plus counselling) over no intervention; and second the incremental cost-effectiveness of NP (used under the efficacy guidelines) over GP counselling.

Under these assumptions, the incremental cost per quitter using NP plus counselling rather than no intervention is calculated to be £1,916. The incremental cost per quitter of using NP plus counselling rather than counselling alone is similar and calculated to be £1,846. Estimates of the cost per life year saved by using NP and counselling (over no intervention) range from £1742 to £2930 for men and from £2948 to £4258 for women (benefits discounted at 5



per cent). The age and sex of the participant are the major influences. The intervention is most cost-effective for patients between 45 and 55 and least cost-effective for those in the oldest age group. NP plus counselling is less cost-effective for women: men generally smoke more and so benefit more from cessation.

Benefits have been discounted at 5 per cent to reflect society's time preference; however, since the choice of discount rate remains a contentious issue, the results were reproduced using a 0 per cent discount rate as part of the sensitivity analysis undertaken. Undiscounted, the cost per life year saved dropped to between one half and one tenth of their level at the 5 per cent discount rate. This dramatic effect can be seen in figure 1. Without discounting there is a clear relationship between age and life years saved: the younger the patient the more life years they save through quitting. However, once discounting is introduced, this relationship becomes inverted for the younger age groups (35-45), for whom benefits are furthest into the future. Neither the choice of discount rate nor the sensitivity analysis changes the finding that nicotine patches, in conjunction with counselling, are cost-effective compared to other commonly used procedures.

Discussion

It is important to note that these are preliminary findings. However, this is the first cost-effectiveness study of nicotine patches based on UK trial results from a GP setting. The trial was large and well conducted and all costings were based directly on data from the trial, increasing the accuracy of the results. Since the definitions of quitter and intensity of adjuvant therapy have been clearly stated in this study, future cost-effectiveness studies on NRT can compare their cost-effectiveness ratios with those found here. Comparison with previous studies is complicated by the different methods used. However, the extensive sensitivity analysis undertaken (not reported here) does allow for the interrogation of alternative assumptions and scenarios. None of the sensitivity analyses significantly altered the overall results (thereby adding credibility to the findings), yet the analyses usefully pointed to two elements which contribute to a low cost per life year saved: achieving high efficacy and low counselling time.

One critical assumption underlying the results is that nicotine patches are available on NHS prescription. Cost-effectiveness ratios are likely to be reduced, along with compliance and efficacy, if patients continue to pay for NP privately. These results, however, are encouraging and add to the debate about whether the NHS should subsidise the costs of nicotine patches. Arguments in favour of subsidised treatment are given added weight if economic evaluation demonstrates a positive impact on quality as well as quantity (length) of life.

The research described in this article was conducted whilst Ana Lowin was an MSc health economics student (University of York) on placement at CEMH; in her absence abroad, this abridged version has been composed by Daniel Chisholm. During the course of her placement, Ana was greatly assisted by Michael Russell and John Stapleton of the Institute of Psychiatry, and was kindly given access to their data. A full account of the research is being prepared for publication.

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Mental Health Economics: Short Courses

After the success of last year's courses, the Centre for the Economics of Mental Health (Institute of Psychiatry), together with members of staff from the Personal Social Services Research Unit (University of Kent and LSE), will be running two one-day courses in mental health economics. These will be held on consecutive days in central London on 3rd and 4th July 1996, and will introduce and illustrate the principles of economic evaluation as applied to mental health care.

The two courses, which may be taken separately or in sequence, will be relevant to managers, researchers, clinicians and other mental health professionals. Each will equip participants with an understanding of the key principles and modes of mental health economic evaluations and how these principles can be applied to their own areas of interest or expertise. Each will be intensively staffed, with opportunities for informal discussion with CEMH/PSSRU researchers.

Course One 3 July 1996 **Introduction to mental health economic evaluation**

Course One will provide an introduction to the underlying context and principles of mental health economic evaluations. Topics will include: policy and practice contexts for evaluations; definition, identification and measurement of costs and outcomes; modes of economic evaluation; methods of analysis; illustrations of applications and study design.

Course Two 4 July 1996 **Mental health economic evaluation for policy and practice**

Course Two will focus on demonstrating how economic evaluation has been applied to key policy and practice issues facing decision makers in today's mental health services. Areas of application include: evaluating child and adolescent mental health services; community care following hospital closure; the costs of mental health residential care in alternative settings; economic evaluations and clinical trials; evaluation of services for drugs misusers.

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Recent publications

- Beecham, J.K., Knapp, M.R.J. and Schneider J. (1996) Policy and finance in the new mixed economy, in M. Wakins, N. Hervey, S. Ritter and J. Carson (eds) *Collaborative Community Mental Health Care*, Arnold, London.
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PSSRU and CEMH policy on Discussion Papers and Working Papers

We aim to disseminate our findings as widely as possible, but both PSSRU and CEMH have to charge for papers. Therefore, if a paper is also published as a journal article, we advise interested readers to obtain that publication. CEMH Working Papers and PSSRU Discussion Papers, including those cited in this *Review*, can be purchased at £5 each (post paid) from Lesley Banks (PSSRU, 01227 827773) or Daphne Hargreaves (CEMH, 0171 919 3198), who can also supply a full list of our mental health research publications.

- Knapp, M.R.J. and Healey, A. (1996) Psychotherapy: individual differences in costs and benefits, in N. Miller (ed.) *Effectiveness, Cost and Outcome of Psychotherapy: Clinical and Service Perspectives on the Economic Evaluation of Psychosocial Treatment*, NIMH, Washington.
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Books

Three recently-published longer publications from PSSRU/CEMH authors are highlighted on the back cover. Complete booklists are available from the contacts opposite.

Mental health residential care in the 1990s: beds and balances

Paul Lelliott, Martin Knapp, Bernard Audini and Daniel Chisholm

Introduction

A study which involved more than 350 mental health residential facilities in eight areas of England and Wales has been completed by the Royal College of Psychiatrists' Research Unit and the Centre for the Economics of Mental Health. This work brought together detailed descriptions of the full range of residential care available to mentally ill people in each area — from hospital admission beds to group homes, the characteristics of their residents and the costs, both of providing the facilities and of services used by residents. The information provides a base on which to build more rational commissioning strategies.

Policy context

Despite the current policy emphasis on home-based care, the commissioning, purchasing and management of a full range of psychiatric hospital beds and community mental health residential provision remains a major concern for health and social services. The reasons for this concern are need, cost and efficiency.

Although there have been major advances in psychiatric treatment and community care, mentally ill people continue to develop disabilities and display behaviours which require the intensive treatment and support which can only be provided in a specialist residential facility. Mental health commissioners thus prioritise accommodation services. Accommodation is usually the most expensive component of care packages for people with severe mental illness; this is especially true for those whose mental health and social functioning are so impaired that they require frequent hospitalisation or long-term residential care. So despite the great reduction in the number of hospital beds, they account for about 75 per cent of NHS spending, and residential facilities for about 40 per cent of local authority spending on mental health services. There is also the efficiency concern. When a residential place is not available when needed, both patient care and service efficiency are likely to be impaired. The consequences could be considerable because of the knock-on effects of bed-blocking and the strain on community workers.

In some parts of the country there is growing evidence that psychiatric beds and mental health residential services are failing to meet need. In London, emergency psychiatric admissions often have to be diverted to distant NHS or private hospitals as costly extra-contractual referrals because local beds are full (MILMIS Project Group, 1995). This is at least partly due to bed-blocking by new long-stay patients awaiting vacancies in staffed hostels (Lelliott and Wing, 1994). Likewise, excess demand for medium secure care has led to both overflow into the private sector and delays in diverting people out of prisons into more appropriate health care settings.

Service planners now recognise that they must commission or purchase a 'balanced portfolio' of residential services. This task is made more challenging by the rapidly developing mixed economy of residential care provision. Although short-stay psychiatric hospital beds remain a cornerstone of NHS mental health services, medium and long-term residential care for mentally ill people is now often provided in community facilities managed by local authorities, the

voluntary sector and the private sector. Government figures show that by 1993 — even if NHS hospital beds are included — 40 per cent of all residential places for mentally ill people under 65 were managed by these agencies.

Facilities in the eight areas

Local researchers in the eight areas identified 368 facilities for mentally ill people under 65. Together they provide accommodation for more than 3,000 people with mental health problems. Early inspection of returns showed great differences between areas in how definitions were applied; for example, a hostel considered highly staffed in one location might be considered low staffed in another. So all study facilities were reclassified using the detailed information on facility size and extent of day and night cover (see table 1). This produced eight categories of accommodation, three based in hospital and five in the community. ‘Staffed care homes’ were a group of small facilities predominantly in the private sector.

As expected, staffing levels vary greatly in line with the extent of day and night cover. Less expected are the striking differences in the proportion of staff with care qualifications. In hospital wards, half to two-thirds of staff are qualified, whereas in non-hospital facilities most staff have no formal care qualification.

Table 1
Classification, staffing (levels and composition), costs and volume of residential services in the eight areas

Services	Number of residents	Extent of cover		Staffing levels		Weekly cost (£) per client		Places per 100,000 population
		Night	Day	Ratio ¹	Per cent qualified ²	Accommodation	Non-accommodation ³	
Forensic unit	6 or more	waking	constant	1.33	62	1501	41	N/A
Acute ward	6 or more	waking	constant	1.27	68	844	349	33.6
Long-stay ward	6 or more	waking	constant	0.95	51	665	42	18.4
High-staffed hostel	6 or more	waking	constant	0.67	18	285	53	36.7
Mid-staffed hostel	6 or more	sleep-in	constant	0.39	20	238	93	23.7
Low-staffed hostel	6 or more	on-call/none	regular	0.19	25	173	99	12.2
Group home	6 or fewer	on-call/none	visited	0.16	39	140	122	14.1
Staffed care home	6 or fewer	sleep-in	constant	1.01	11	369	94	7.9

Notes

- 1 The ratio of staff to resident places; e.g. in forensic units there are 1.33 staff for each bed.
- 2 The percentage of facility staff with a formal care qualification (either nursing or social work).
- 3 Includes resident living expenses and use of non-residential services provided by any agency other than the facility staff. All costs at 1993/94 prices.

This puts a limit on how much skilled health care can be delivered in community accommodation. There is a nearly three-fold variation between the eight areas in the total number of residential places available per unit of population, ranging from 79 to 218 places per 100,000 population. There is an even more striking variation in the numbers of places with 24-hour waking cover available in either hospital or community settings, from 36 to 136 per 100,000. These differences are not closely related to levels of expected need as measured by differences between areas in social deprivation, a factor known to influence utilisation of mental health care (Jarman et al., 1992).

The residents

Most of the 1,951 residents who met the study criteria have long-term, severe mental illness. About two-thirds have active psychiatric symptoms, three-quarters have significant impairment in performing tasks essential for independent living, and more than a quarter have moderate or severe physical disabilities or ill-health. About a third are judged to pose a moderate or severe risk of acting violently if discharged, and twice this number to pose a risk to themselves from self-neglect. As expected, the most disabled residents are in facilities with 24-hour cover. The main difference between residents in long-stay wards and those in community facilities with similar levels of cover is that considerably fewer of the latter either have histories of violence or are at risk of acting violently.

Costs

The expected cost gradient is found between categories of accommodation (see table). Hospital wards have the highest accommodation costs, with progressively lower accommodation costs for hostels with decreasing levels of staffing, and the lowest for group homes. Diseconomies of scale seem to apply to 'staffed care homes', which are the most expensive type of facility outside hospital. These small, mainly privately managed facilities are more expensive per resident than larger hostels. Non-accommodation costs, which comprise residents' living expenses and use of services outside the facility's own provision, show the opposite trend. These are lowest in long-stay wards and high-staffed hostels and highest in low-staffed hostels and group homes.

The costs of care packages are highest in facilities under NHS management, which are almost all hospital wards. There is a clear inner-city effect, with accommodation costs higher for all categories of facility in inner-city districts. In all districts, total package costs for residents in local authority-managed facilities are significantly higher than costs for residents in voluntary or private sector facilities.

Conclusions

The shift from long-stay hospital care to the community has led to the development of a much wider range of provision managed by a variety of agencies. The eight sites covered by the survey have very different configurations and volumes of residential services, but these differences do not relate closely to population characteristics. This suggests that developments have been led more by historical and supply factors than by rational planning based on epidemiological need.

Although the transfer of strategic responsibility for residential care from the NHS to local authorities offers many opportunities, it may also have dangers. It has resulted, for example, in a lower proportion of residential accommodation having

the 24-hour waking cover necessary to cater for the most disabled mentally ill. It is not clear what incentives there are to alter the available supply. Furthermore, community-based facilities with waking cover appear to be excluding mentally ill people with histories of violence, perhaps because of the composition of their staffing element. These facilities employ very few qualified staff and, in particular, they employ few mental health nurses. The development of community-based residential facilities for people with histories of violence should be a priority for local service planners, since this group forms a large proportion of the new long-stay hospital population whose discharge is delayed because suitable accommodation is not available (Lelliott and Wing, 1994). Finally, the classification of facilities developed by this study, and the richness of the data collection, allows like-with-like comparisons to be made between the different facility types, sectors and areas. The results should be of interest to those who need to devise long-term purchasing strategies to stimulate the desired supply responses.

Paul Lelliott (Director) and Bernard Audini (Research coordinator) are based at the Royal College of Psychiatrists Research Unit. The collaborative study was funded by a NHS Research and Development grant. A version of this article first appeared in the *Health Services Journal* (1 February 1996) and it is reprinted here (with minor revisions) with the kind permission of the editor.

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Forthcoming publications

A series of papers has arisen from this survey of residential care.

- Lelliott, P., Audini, B., Knapp, M.R.J., Chisholm, D. (1996) The Mental Health Residential Care Study: I: classification of facilities and description of residents, *British Journal of Psychiatry*, forthcoming.
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For further details about the study and other ongoing analyses, please contact Daniel Chisholm (0171 919 3503) at the CEMH.

Specialist work schemes: some baseline data and costs

Justine Schneider

Background

Work was seen as an important part of the regime in what has been called the first therapeutic community, described by Samuel Tuke in 1813 (see box 1). Still today, when most people receive mental health care outside hospital, there is growing demand for constructive occupation from consumers and organisations which represent their views (Thomason, 1989; Hatfield et al., 1992; Burnett, 1993; McCollom, 1993; 1994; Mind's Policy on Employment, 1994). There is evidence that structured work opportunities may be a suitable response to specific needs of people with mental health problems. However, work is only one of many factors which may affect a person's mental health (Bennett, 1970; Wing and Brown, 1970; Shepherd, 1984; Nehring et al., 1993).

The drive towards evidence-based health care highlights the need for greater knowledge about the specific contribution of employment to psychiatric rehabilitation. A research project, conducted at the PSSRU and funded by the Department of Health, represents a preliminary attempt to isolate some relevant factors in sheltered work schemes. In this article, we summarise the findings from this research, concentrating on the characteristics of workers, the costs of providing work schemes and a comparison of these data with the costs of other forms of day services.

The employment schemes

We chose to look at work schemes which could offer long-term support for the broad range of people with severe mental health problems living in community settings, selecting schemes which were likely to be typical of the range of provision. The schemes studied had to have been operating for at least two years, had to be sufficiently large to facilitate the research (20 workers or more), reasonably accessible for interviewing, and willing to open their doors to the study. On this basis seven schemes were recruited:

- an Industrial Therapy Unit which relies wholly on contract work, and whose origins lie in voluntary initiatives (ITU1),
- a scheme which had been relocated outside a hospital which closed (ITU2),

Box 1

Extract from *Description of The Retreat*

The female patients in the Retreat, are employed, as much as possible, in sewing, knitting, or domestic affairs, and several of the convalescents assist the attendants. Of all the modes by which the patients may be induced to restrain themselves, regular employment is perhaps the most generally efficacious; and those kinds of employment are doubtless to be preferred, both on a moral and physical account, which are accompanied by considerable bodily action, that are most agreeable to the patient, and which are most opposite to the illusions of his disease (Tuke, 1813, reprinted 1964, p. 156).

- a scheme which provides vocational rehabilitation (VOC),
- one which offers transitional employment in a clubhouse type setting (CLB),
- three schemes offering a range of productive activities such as catering, printing, light assembly work and packing (MIX1, MIX2, and MIX3).

Three schemes studied offer full time work (ITU1, ITU2 and VOC), while most of the rest offer sessional work, with a few people working full time. The CLB scheme is the exception, where all jobs are shared between members, so nobody *works* full time in paid employment, although some *attend* the scheme full time. Although the cooperative model (social firm) is seen as more progressive and egalitarian than traditional models of sheltered employment, we could find no social firm which was large enough or stable enough to be included in our research.

Characteristics and costs

Within each scheme we interviewed 20 members of the existing workforce, selected at random, and collected a range of information on their mental health, quality of life and care packages, as well as a description of the scheme and other cost-related data. Table 1 summarises some of these data by work scheme, and includes a separate row for data pertaining to the 20 'newcomers' to all the schemes who started work between February and September 1995.

The table shows that there was considerable disparity in terms of the workers' mental health, age, ethnicity, working hours and earnings. The mean Global Assessment of Functioning (GAF) score of 51 suggests 'moderate symptoms,

Table 1
Differences in the characteristics of workers and schemes

Group ¹	Mean GAF ² score	Mean age	Per cent non-white in study	Per cent female in study	Mean hours worked	Mean earnings ³ £, 1994-5	Earnings per hour £
ITU1	68	39	6	50	35	16.52	0.47
MIX3	38	37	52	61	16	14.34	0.90
MIX2	59	43	22	33	19	8.76	0.46
VOC	61	40	6	6	33	15.44	0.48
CLB	41	45	5	35	20	27.71*	1.38
ITU2	48	55*	0	18	32	13.57	0.42
MIX1	57	46	5	30	22	13.95	0.63
Newcomers	n/a	33	n/a	10	20	8.61	0.43
All groups	51	42	13	31	25	14.01	0.56

Notes

1 See text for definitions

2 GAF — Global Assessment of Functioning, a brief measure of psychological dependency, ranging from 1 (most disabled) to 99 (least disabled). Scores for different groups are not strictly comparable, since different raters were used in each group.

3 Mean earnings per week. Only six out of twenty CLB members were working, although they did generally earn the going rate for the job.

* Differences were statistically significant (p < 0.05).

OR generally functioning with some difficulty (e.g. few friends, and flat affect ... moderately severe antisocial behaviour)'. Different raters make comparisons between schemes unreliable, but the wide variability in GAF scores (10-90) indicates a mix of abilities. The age range was also wide, between 20 and 70 years, with a modal range of 30-39 years.

In open employment there is often a close relationship between the hours worked and 'take-home' pay but no such pattern can be discerned from table 1. In sheltered employment, it is more likely that the entitlements to social security benefits will have the greater influence on earnings. For example, differences in benefits received may mean that two people doing the same full-time job could earn anything between £15 and £100. For people on Income Support, £15 per week is the most they can earn without a subsequent reduction in their DSS benefits; 96 per cent of people in this study earned less than £30 per week.

The costs of the work schemes received particular attention and table 2 illustrates some comparisons between schemes. The methodology is discussed in full in Schneider (1996). The number of staff and workers shows considerable variation between the schemes, with a three-fold difference in staff cover between schemes and almost a two-fold variation in the number of workers (rows 4 and 5) allowing for the fact that some schemes offer sessional work. The 'rehab ratio' (which is calculated using the average number of staff and workers on-site at any one time) is twice as high in MIX1 as in ITU1.

Economic viability was an important consideration for the work schemes, but usually considered as secondary to their rehabilitative role. Indeed, when data on sales and expenditure were compared, all the schemes operated at a financial loss. The shortfall was made up from grants or contracts from the health and/or local authority. Some schemes, however, covered much more of their costs through sales of goods and services, so the differences between the gross and net costs vary widely (table 2, rows 3 and 4). The 'cost per hour' figures take account of variations in attendance.

Table 2
Costs of work schemes for people with mental health problems

All costs at 1994-5 levels	ITU1	ITU2	VOC	CLB	MIX1	MIX2	MIX3
WTE staff/ workers	0.13	0.15	0.14	0.19	0.24	0.33	0.22
Net expenditure/ places in scheme (Gross exp./places)	£2465 (£5024)	£6446 (£6686)	£3449 (£4229)	£6172 (£6465)	£4685 (£6865)	(£4560) £6287	£2865 (£3978)
Net expenditure/ person hours (Gross exp./person hours)	£1.41 (£2.87)	£3.98 (£4.13)	£2.00 (£2.46)	£5.99 (£6.27)	£4.37 (£6.41)	£4.80 (£6.62)	£6.14 (£7.79)
Staff employed by scheme — whole time equivalents	3	7.58	7.34	6	9.5	10	6.5
Allowing for shift working, how many are on the premises	21	50	51	31	40	30	30
Actual places provided per week 1994-5	21	50	51	31	54	56	60

The cost of underwriting a person in a work scheme compares favourably to other forms of day services. For example, the cost per annum of attending a day hospital on just two days per week would be approximately £8,500, while the cost of ITU2 which offers full time occupation to former hospital residents is about £6,500. The cost of attending a local authority day centre on three days per week would be nearly £6,000, while the cost of attending CLB for an average of twenty hours per week would be £6,200, and as little as £2,500 might subsidise a full-time place in ITU1.

Conclusion

Specialist psychiatric employment schemes differ along several important dimensions, such as the relative emphases placed on the provision of work opportunities and provision of social support or health care, funding profiles, the types and mix of productive activity, and organisational systems. In this article, data describing the workers in seven schemes and the schemes' costs have been summarised. Given that constructive employment is a fundamental adult human experience, it is encouraging to find that people with moderate psychiatric disabilities can be employed in specialist work schemes at no greater cost than alternative forms of day provision.

Angela Hallam and Michelle Asbury have contributed to this research. Our thanks are extended to the steering group, and the staff and workers at the schemes.

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Northern Ireland care in the community

Shane Kavanagh

In line with other parts of the UK, the Department of Health and Social Services (DHSS) in Northern Ireland has a long-standing commitment to develop community-based care for people with mental health problems and people with learning disabilities. In 1989, the DHSS commissioned the Health and Health Care Research Unit at Queens University, the PSSRU, and the Sainsbury Centre for Mental Health (then Research and Development in Psychiatry) to evaluate the success of this policy.

The study compared the quality of life of people whilst living in hospital with subsequent findings at six, twelve and twenty-four months after discharge. The dimensions for the assessments included morale and life satisfaction, ability to perform daily activities, and behaviour and social integration. Data were also collected on personal circumstances, quality of the care environment, accommodation, income and other service receipt.

Between April 1990 and June 1992, 188 people with mental health problems and 214 people with learning disabilities were discharged from seven long-stay hospitals in Northern Ireland. Most people moved into a range of highly supported accommodation and a wide range of services based outside the accommodation were used. The statutory, voluntary and private sectors were all involved in providing components of the community care packages. Twelve months after discharge, over 90 per cent of people with mental health problems and 80 per cent of people with learning disabilities were still resident in the community.

One year after discharge from hospital, the assessments showed little change in daily living skills and no significant changes in behavioural problems. Neither group reported any difference in the number of friends within the place of

Further reading

Opening New Doors

An evaluation of community care for people discharged from psychiatric and mental handicap hospitals

Michael Donnelly, Sinead McGilloway, Nicholas Mays & Sarah Perry;

Martin Knapp, Shane Kavanagh, Jennifer Beecham, Andrew Fenyo & Jack Astin.

Published in 1994 by HMSO, London. 416 pages (paperback, ISBN 0 337 11202 9, £14.95).

This book provides a comprehensive and detailed account of the research summarised above. It explores the realities of care in the community for adults with mental health problems and learning difficulties and provides valuable insights for developing both the policy and practice of community care.

Donnelly, M., McGilloway, S., Mays, N., Knapp, M.R.J., Kavanagh, S., Beecham, J.K. and Fenyo, A.J. (1996) The cost-effectiveness of community care for adults with learning disabilities, to be published in *Journal for Intellectual Disabilities Research*.

Donnelly, M., McGilloway, S., Mays, N., Knapp, M.R.J., Kavanagh, S., Beecham, J.K. and Fenyo, A.J. (1996) Moving out: one and two year outcomes for adults with learning disabilities discharged to the community, *British Journal of Psychiatry*.

Donnelly, M., McGilloway, S., Mays, N., Knapp, M.R.J., Kavanagh, S., Beecham, J.K. and Fenyo, A.J., Leaving hospital: one and two-year outcomes of long-stay psychiatric patients discharged to the community", to be published in *Journal of Mental Health*.

Beecham, J.K., Knapp, M.R.J., McGilloway, S., Kavanagh, S., Fenyo, A.J., Donnelly, M. and Mays, N., Leaving hospital II: the cost-effectiveness of community care for former long-stay psychiatric hospital patients, to be published in *Journal of Mental Health*.

residence when compared to numbers reported when they were in hospital. Despite this, the majority of people in both groups reported increased satisfaction with their home environment and indicated that — unlike hospital — they preferred to remain in their current place of residence.

Average costs were significantly lower in the community than in hospital but there was considerable variation around the mean. Some people incurred community care costs in excess of their costs in hospital. Costs were generally higher for people with learning disabilities compared to people with mental health problems.

The finding that quality of life was at least no worse than in hospital and was achieved at a lower cost suggests that the policy of community care for former long-stay hospital residents has been relatively successful, although there were cost and effectiveness differences between the sectors. However, the research found only weak links between needs and resources suggesting that service packages could be more responsive. Contracting, monitoring and regulation processes must help ensure appropriate levels of care are available and accessible.

Bridging Therapy

This small costs study has been undertaken by Jennifer Beecham in two wards at the Maudsley Hospital. The study sample comprises two groups: 19 people admitted to the ward providing Bridging Therapy (BT) and 19 people admitted over the same period to a 'standard service' ward within the same hospital (SS). Bridging Therapy is an innovative model of nursing care which aims to provide structured in-patient care and a comprehensive discharge package, thus improving the coordination and integration of hospital services and community support. Service receipt and other costs-related data were collected using a specially adapted version of the *Client Service Receipt Inventory*.

There was a small difference between the groups in the costs of their care packages during the pre-admission period. Mean costs for the BT group were slightly lower but the range of costs was slightly wider. During this phase, fewer members of the BT group had admissions to psychiatric hospital and more members had used psychiatric outpatient and emergency clinic services, and day care services. More people in the SS group had contact with social workers and community psychiatric nurses. During the index admission, which lasted between eight and 127 days, the slightly shorter lengths of stay for BT group members was off-set by the higher *per diem* costs on the BT ward.

During the post-discharge phase of the study, and despite a reduction in use of in-patient care for the BT group members, their average weekly costs were slightly higher than for people using the standard service. An increase in the intensity and frequency of use of psychiatric outpatients and more people living in specialised accommodation facilities accounted, in part, for these higher costs.

It is important that these costs results should not be viewed in isolation. This costs study was part of a wide-ranging study exploring nursing processes and clinical outcomes commissioned by the King's Fund within their national evaluation of Nursing Development Units. A review of the full Bridging Therapy evaluation is available from the King's Fund, Cavendish Square, London, or the Professional Development Centre, Bethlem and Maudsley Hospital Trust, London SE5.

Inflating the costs of depression

Alan Stewart

In recent years, several studies have looked at the cost-effectiveness of antidepressants in the treatment of depression. A particular issue of concern is whether clinicians should move from using the older, low cost Tricyclic Antidepressants (TCAs) as a first line treatment to using the newer, higher price Selective Serotonin Reuptake Inhibitors (SSRIs) (Jönsson and Bebbington, 1994; Stewart, 1994; Hatzianandreu et al., 1994). Some work in progress at the PSSRU has revisited one of these studies (Stewart, 1994) and examined how the balance of costs has changed over time.

By uprating all prices from the original 1992 level to 1995 prices and using more accurate estimates of unit costs (Netten and Dennett, 1995), changes have occurred in the relative expected costs of using different types of antidepressants. The original paper concluded that the cost argument was not proven for changing prescribing practice from the use of TCAs to SSRIs. However, over a short period of time, the costs of health care resources (such as clinicians' time and an overnight stay in hospital) have increased, but the component of total costs represented by drugs has remained substantially unchanged, indeed the price has fallen in some cases. Consequently, where particular treatments result in greater use of health care resources than their alternatives, total costs have increased in absolute *and* relative terms. Fundamentally, where drugs have higher failure or relapse and recurrence rates then there is a greater impact on total cost of health care due to health care cost inflation.

This research considers whether the changes in the costs of alternative treatments mean clinicians should review their prescribing behaviour. Preliminary findings from the new analyses appear to indicate that, when

Related research

A wide range of work is in progress on the economics of pharmaceuticals at both the PSSRU and CEMH. In mental health, projects cover such topics as drug treatment for people with schizophrenia, the economic effects of prescribing subtherapeutic doses of anti-depressants, and valuing outcomes from anti-depressants using the willingness-to-pay approach. One longer term project is evaluating treatment and care for elderly people suffering from depression.

Outside the area of mental health, other evaluations of pharmaceuticals are being conducted in areas such as rheumatoid arthritis, chest infections and prophylaxis against fungal infections. A new project is about to start evaluating the cost-effectiveness of treatments for chest infections in general practice. Research examining the factors which influence GPs' prescribing decisions is coming to a close.

Recent publications include:

Forder, J., Kavanagh, S. and Fenyo, A. (1996) A comparison of the cost-effectiveness of sertraline versus tricyclic antidepressants in primary care, *Journal of Affective Disorders*, forthcoming.

Stewart A., Powles R. et al. (1995) Costs of antifungal prophylaxis after bone marrow transplant: model comparing oral Fluconazole, Liposomal Amphotericin ('AmBisome') and oral polyenes as prophylaxis against oropharyngeal infections, *PharmacoEconomics*, **8**, 4, 350-361.

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For further information on this area of research, please contact Alan Stewart at PSSRU, UKC.

compared to SSRIs, treatment with TCAs now implies *higher* costs accruing to the use of non-pharmaceutical resources. The earlier work showed expected health care costs associated with the use of TCAs to be £350-£352 per year and the costs for SSRIs in the region of £381-£401 per year. The current revision shows the gap to be narrower in absolute and relative terms, with a mean expected difference in health care costs of £30. (Later stages in this research will further refine the details of the service packages and their associated costs for each patient group.)

Sensitivity analyses indicate that changes in the methods of calculating unit costs have had only a small effect on relative prices. The increases are substantially due to the commonly observed effect of a higher inflation rate for health care costs than for general price levels. If inflation in physical and human resources continues to outstrip pharmaceutical inflation, the economic case in favour of prescribing higher price drugs (which reduce the health and social care costs of depression) will be stronger.

The final results of this work will not be available until later this year but will provide some indicators as to the continued reliability of economic evaluations over time. Because of changes in relative prices, it may be that where alternative treatments make different use of the available mix of services and resources, there will be very different cost changes over time. Hence decision makers should be aware of the need to reappraise decisions based on economic evaluations that do not reflect the current set of resource prices.

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The Quality of Life in Residential Care Study

Conceived partly as a means of testing the longer-term impact of the Caring in Homes Initiative (CHI), the aim of this study is to test whether the chosen indicators of quality were sufficiently sensitive to identify differences between 'superior' and 'good' homes. The study adopted a case-control experimental design. Eight homes classified as 'superior' (either through having participated successfully in the CHI staff development module, or by other criteria such as BS5750 accreditation) were matched with 'good' homes which were in the same locality, the same sector (private, voluntary or local authority) and of similar size.

Nine local authority homes, four private establishments and four homes run by housing associations participated in the study. A large number of research instruments was applied in each home; residents were interviewed by research nurses, staff and visitors completed postal questionnaires, managers were interviewed, and the documentation in each home was evaluated. The researchers were blind to the group membership of the homes.

The Quality of Life in Residential Care project is conducted jointly by members of the Institute of Psychiatry, the National Institute for Social Work and the PSSRU, and funded by the Mental Health R&D Initiative. Detailed findings will soon be available. Further information may be obtained from Sue Sheldon, Old Age Psychiatry, Institute of Psychiatry, De Crespigny Park, Denmark Hill, London, SE5 8BB.

Health economics and children's mental health

Jennifer Beecham

The demand for health economics information

'The mental health of children foreshadows the mental health of future generations of adults. Child and adolescent mental health services are a small part of the responsibility of health and local authorities, but the implications of poor attention to children's and young people's mental health are not only their and their families' continued suffering, but also a continuing spiral of child abuse, juvenile crime, family breakdown and adult mental illness, all of which can lead to more child and adolescent mental health problems.' [NHS Health Advisory Service, 1995]

These words start the HAS review of mental health care for children and young people. While reminding us of the devastating consequences of mental ill health for children and adolescents the paragraph also highlights some issues which are pertinent to the economics of children's mental health care (see box).

The list is by no means complete, moreover, we could add several cross-cutting dimensions. Each of these questions should be addressed for different disorders, or for levels of illness severity. If the case for providing a service is proven, then making the current set of services *more* cost-effective must be high on purchasers' and providers' lists of priorities. Issues pertinent to the operation of markets in children's mental health care services and the development of the 'mixed economy' of provision are relevant to recent policy initiatives. Questions about service availability and accessibility, compliance with treatment and the match between services used and clients' needs also require the attention of economists. To summarise: the *demand* for the type of information economic research can provide is acute and the agenda wide-ranging.

Meeting the demand

In contrast to the growing demand for economic insights, the supply of such information is, as yet, somewhat limited. The HAS Report cited above notes 'There was no evidence from any of the field visits of the application of health economics research to child and adolescent mental health services' (para. 161). Much of the research in child mental health has either a clinical or epidemiological focus — perhaps estimating the prevalence of certain disorders, examining their multi-factorial causes, or assessing the effectiveness of specific interventions. Such findings are relevant for an economic evaluation but further data-collection, processing, analysis and interpretation are necessary. Frameworks, methodologies and techniques are already in place to structure this work (Knapp, 1984; Drummond, 1994; Kavanagh and Stewart, 1995). Taking just two of the questions, we can illustrate how these components might be brought together.

What are the social costs of childhood mental health problems?

Cost-of-illness studies are often aimed at central government or purchasers to influence resource allocation for a particular client group or service area. Such studies can identify the economic burden of disease and its distribution across groups in the population but rarely provide information on the priorities that should be attached to services in terms of their costs *and* benefits. To calculate

Box 1

Some questions from the children's mental health economics research agenda

- What are the social costs of childhood mental health problems?
- What services are available to children with mental health problems?
- What are the costs of services for children with mental health problems?
- Which services, or combination of services, are more *effective* in the short-term and longer-term to reduce symptoms and improve behaviour?
- Which services, or combination of services, are more *cost-effective* in the short- and longer-term? How can we measure this?
- What combination of children's services are effective in reducing the use of services in the longer-term?
- What are the consequences of changing service use patterns in the short- and long-term?
- Will higher investment in children's mental health services reap benefits in terms of avoiding future social costs?

the costs of childhood mental health problems, Beitchman et al. (1992a) suggest three categories of costs should be identified; *direct and indirect core costs* (treatment, lost productivity and loss of life); *non-core costs* which are the result of the impact of mental ill health on other systems and individuals; and finally *individual costs* which are the child's subjective sense of pain and suffering. In practice, some costs (such as the provision of health and social care services) are easier to value than, say, loss of life or pain and suffering.

Developing a probability tree will aid the calculation of these social costs. This approach allocates the population with a specific condition to 'outcome routes'. Thus, we know that children with severe behavioural and emotional problems, if untreated, are at risk of school failure, reception into care and delinquency which may lead to prison sentences. Robins (1978), for example, examines the link between childhood conduct disorder and juvenile delinquency, and Harrington et al. (1990) make connections between childhood depression and the risk of using psychiatric medication and other services. Costs can then be attached to these scenarios (see, for example, Stewart, 1995).

Data can also be drawn from social care research, perhaps examining the relative risks of scholastic failure for children with a psychiatric disorder and their associated employment prospects (Rutter and Giller, 1983) and the prevalence of psychiatric disorder among juvenile offenders (Baily, 1992) or among children using local authority services (Kurtz et al., 1994). One study found just over half the states in North America considered emotional and psychological problems a common enough dimension to be routinely included in their assessments of juvenile needs (Towberman, 1992).

As yet, the evidence on the proportions of children with these types of outcomes is limited. Few studies provide sufficient detail on the likelihood of specific outcomes for treated and untreated conditions and information on longer-term outcomes is particularly hard to find.

Which services, or combination of services, are more cost-effective?

There are some examples of cost-effectiveness comparisons between treatment modes, but these are rare. Grizenko and Papineau (1992), for example, compare day and residential treatment modes and Webster-Stratton et al., (1988 and 1989) offer evidence of relative effectiveness within cost-effective parent training programs. Comparative effectiveness studies are more common. Winsberg et al. (1980) compare in-patient and outpatient care for children with behavioural disorders but by 1987, Kazdin found little controlled research on interventions for conduct disorder, one of the most common childhood disorders. LeCroy (1992) reports that meta-analysis on a number of independent studies found the average outcome of child therapy to be 71 to 79 per cent better than the outcome for untreated children. Many effectiveness evaluations focus on small, innovative or specialist services, but can provide a useful source of information from which to generate costs data (Knapp and Beecham, 1993).

Most services will have easily identifiable direct cost implications but the wider implications (for other services and for users and their families) are hidden and may be very different depending on the model of care chosen. Information about who is using the services, what *packages* of support are used by children and their families, whether they are effective and whether they are the most cost-effective response can provide vital data to ensure that scarce resources are deployed in ways which promote the greatest health gain and reduce the impact of childhood mental ill-health in the future.

Overview

Fundamental to recent policy initiatives is an emphasis on linking cost information to service provision and needs assessments, both at the micro-level and macro-level, and the development of a cost-effective service. These issues are central to the health economist's perspective. Commitment of research resources to this field is required to encourage collaboration between decision-makers, practitioners, economists and other researchers to set research priorities and to undertake the work.

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Economic evaluation and services for children with mental health problems

CEMH and PSSRU researchers have, over a three year period, been collaborating with Dr Zarrina Kurtz, Ms Rosemary Thornes and Dr Stephen Wolkind in an exploration of the provision and costs of services for children and adolescents with mental health problems. The first phase of the research involved a nationwide survey of mental health services and was followed by an in-depth examination of the services available in four districts in England. Three reports are available on the economic component of this research programme. The first explores the reasons for variation in the costs of specialist mental health services (psychiatry and psychology) and the second outlines the role of economics in evaluating mental health care for children. The third report focuses on the mixed economy of children's mental health services in the four districts and presents information on the way children with oppositional defiance disorder and children with obsessional disorder used the components of the specialist services and the associated costs.

Beecham, J.K., Topan, C. and Knapp, M.R.J. (1995) The costs dimension, in Z. Kurtz, R. Thornes and S. Wolkind, *Services for the Mental Health of Children and Young People in England: a national review*, report to the Department of Health, London.

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Beecham J. K. and Topan, C. (1996) *The Provision, Funding and Direct Costs of Services for Children with Mental Health Problems*, Report to the Department of Health, London.

If you would like any more information on this area of our research, please contact Jennifer Beecham (CEMH and PSSRU, UKC) or Martin Knapp (CEMH and PSSRU, LSE).

New study: comparison of treatment services and costs

The CEMH is shortly to begin work on a collaborative project that seeks to develop a methodology for the comparison of treatment services and costs in child and adolescent mental health.

The development and subsequent testing of an information gathering system suitable for clinical practice (including data on type and severity of psychopathology, goals for therapy and overall outcome) will be accompanied by the collection of information on all the services and supports received by children in the sample. This will enable analysis of the extent to which needs are being met, as well as the calculation of the costs associated with two models of service delivery. The derived costs data will be linked to principal study outcomes, both at the individual level and the aggregate level, in order to examine relative cost-effectiveness.

The study will be conducted in collaboration with Dr Patrick Byrne (Croydon), Dr Nikapota (Brixton clinic) and Professor Eric Taylor (Institute of Psychiatry). For further details, please contact Daniel Chisholm at the CEMH.

NEW BOOKS

The Economic Evaluation of Mental Health Care

Edited by **Martin Knapp**

Arena, Aldershot, 1995; 260 pages, paperback, ISBN 1 85742 211 2; £14.95.

An introduction to the principles of economic evaluation, with many illustrations of their application to mental health care policies and practice.

Contents

- The economic perspective: framework and principles
- Economic evaluations of mental health care
- Collecting and estimating costs
- Costs and outcomes: variations and comparisons
- Eight years of psychiatric reprovizion: an economic evaluation
- Elderly people with dementia: costs, effectiveness and balance of care
- Costing the care programme approach
- Comparative efficiency and equity in community-based care
- Reduced-list costings
- Decision analysis and mental health evaluations
- Have the lunatics taken over the asylums? The rising cost of psychiatric services in England and Wales, 1860-1986
- Mental health economic evaluations: unfinished business

Unit Costs of Health and Social Care 1996

Compiled by **Ann Netten and Jane Dennett**

PSSRU, Canterbury. 148 pages (approx.), paperback, ISSN 0969-42268. Available from Anne Walker at the PSSRU, Canterbury, at £7.50 including post & packing.

Unit Costs of Health and Social Care is available from June 1996. The report brings together a wealth of information for those involved in providing or evaluating care and those undertaking costs research.

Each volume in this series (formerly *Unit Costs of Community Care*) consists of a set of cost 'schemata' containing specific information about the various component costs of each service covered; a commentary detailing the basis for the estimates; price indices (now with a section explaining their basis and use); a reference list of key studies; a glossary and indexes. All these are checked and updated, incorporating more detailed and accurate information, each year.

New in 1996 is coverage of services for people who misuse drugs and alcohol; of child psychology and psychiatry services; and of multidisciplinary teams for people with mental health problems. Seven original articles provide insights into current and recent research in costing and related areas.

Voluntary Means, Social Ends

Jeremy Kendall and Martin Knapp

PSSRU, Canterbury, 1995; 28 pages, paperback, ISBN 0 904938 61 1.

Available from Anne Walker at the PSSRU, Canterbury, at £5.00 including post & packing.

This report summarises the findings of the UK part of a major international study of the voluntary sector.

The most comprehensive mapping of the sector to date is outlined, breaking down the sector into categories of voluntary organisation and detailing sources of income, expenditure, and numbers of employees and volunteers. Chapters discuss the sector's relationship with the state and other policy issues.