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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 Janice Dickson at the CEMH (020 7848 0198) or the PSSRU librarian in Canterbury (01227 827773). There are copies available of issues two to seven; issue one is out of print but available at the PSSRU website http://www.ukc.ac.uk/PSSRU/ .

Director's introduction

Martin Knapp

This is the fifth and longest Mental Health Research Review produced by the PSSRU and CEMH. Like its predecessors, the Review seeks to introduce the mental health research work undertaken by the teams at PSSRU and CEMH. There are short notes on work in progress, lists of recent publications, longer notes on a few of the many research projects which are underway, and details of how to contact research staff and generally to get more information.

The editors of the *Mental Health Research Review* are drawn from the small teams of researchers at PSSRU and CEMH, and this year's editorial team — Shane Kavanagh, Juliet Henderson and Anita Patel — needed only a little persuasion to volunteer. Collectively they have done an excellent job in pulling together fifteen original summary articles, plus all the basic information which is contained in this review. We hope you find them useful and interesting.

Notices of two forthcoming conferences are enclosed with this *Review*. CEMH is organising the first mental health economics and policy conference in Britain on 23-24 June. As we go to print, some places remain, but please book as soon as possible. In September, Geneva is the venue for an interesting conference on managed care in mental health, also with PSSRU and CEMH contributions.

Editorial introduction

Juliet Henderson, Shane Kavanagh and Anita Patel

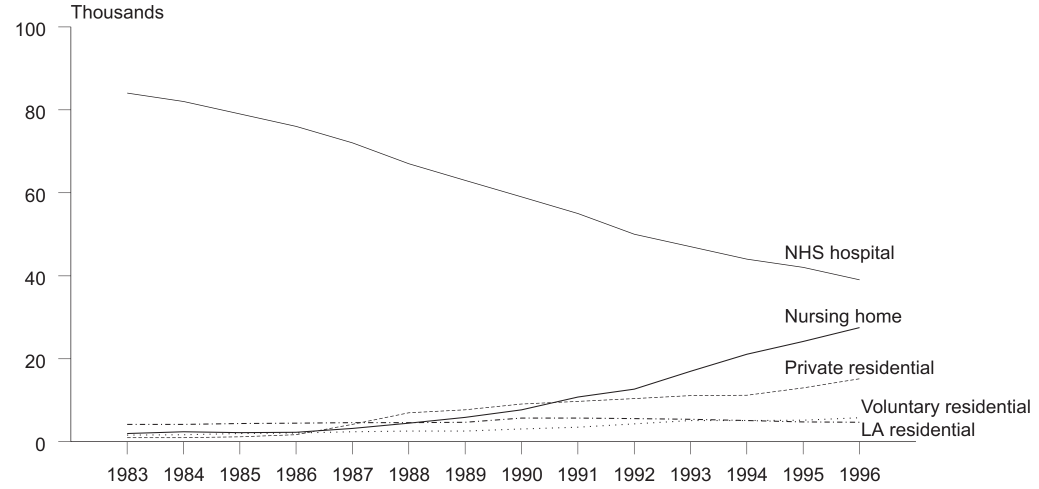
This year's *Mental Health Research Review* contains a diverse range of articles by authors from various academic backgrounds. This reflects the broad range of conditions categorised as mental illness and their far-reaching effects both within health and social services and in society more generally. We have arranged the articles within three broad sections: costs, mixed economy and evaluation.

The first section deals with the costs resulting from mental illness. Anita Patel and Martin Knapp synthesise existing information to paint a broad picture of the costs of mental illness in England. Indirect costs form a large proportion of the costs of mental illness in England: lost employment alone constitutes 37 per cent of the total costs. However, such indirect costs are difficult to define and value, not least because it is difficult to attribute events to particular causal factors. In this context, Andrew Healey discusses the association between crime and substance misuse and explores the methods employed in previous empirical studies and the role of wider social factors.

The National Health Service, largely through hospital care, accounts for 13 per cent of the total costs. However, provision of care is increasingly mixed with other public, private and voluntary providers, particularly for residential care (figure 1). In the mixed economy section of this review, the first four papers consider various implications of downsizing long-stay NHS hospital provision. Angela Hallam discusses how the changing balance of care has been accompanied by an increasing variety of funding mechanisms for residential care for mental illness and considers the implications. Many studies comparing long-term hospital costs with other care arrangements were predicated on assumptions that hospitals would close and their capital assets would be released in the long run. However, Ana Lowin and colleagues demonstrate that, in fact, a minority of hospitals have closed. Moreover, few capital assets have been released and the 'long run' is proving much longer than many economists or policy makers had envisaged.

Robin Darton shows that following the decrease in NHS hospital provision many elderly people with mental disorders are now cared for in non-specialist settings. Indeed, the prevalence of such disorders and the associated disability among residents of

Figure 1 The changing balance of mental health accommodation in England



Source: Department of Health.

residential and nursing homes has grown in the past decade. As larger numbers of increasingly disabled people are cared for outside hospital, general practitioners complain that responsibility is now resting, by default rather than by design, on their already burdened shoulders. Daniel Chisholm provides empirical evidence on general practitioner utilisation and costs for adults with mental illness living in residential alternatives to hospital care. He then estimates the likely increase in workload resulting from the changed balance of care.

The second four articles in the mixed economy section consider organisational and contracting arrangements between purchasers and providers for mental illness care. Diagnostic Related Groups (DRGs) were introduced as a prospective payment — based on the historical costs of episodes of hospital care for people with particular diagnoses — to replace fee-for-service retrospective reimbursement in the US. Paul McCrone discusses their applicability to mental health care and reviews the patient characteristics that have been associated with service use in British studies. Sue Knight and others describe developments in casemix and other similar information systems in the UK.

In the US, following earlier attempts to reduce costs using payments with , a variety of mechanisms collectively known as managed care have evolved. We include papers by two American scholars who made seminar presentations at PSSRU during the past year.

Barbara Dickey presents results from the evaluation of arrangements in Massachusetts where mental health monies were separated from general health care and selective contracting arrangements with providers were introduced. Although she concludes that managed care met its cost-containment goals without shifting costs to another state agency, questions concerning enrollee satisfaction and quality of care still remain. Richard Scheffler and colleagues describe the utilisation and costs of services before and after radical reform of mental health care funding and organisation in California during the early 1990s.

The final section comprises papers dealing with the evaluation of particular treatments or care policies. The focus of articles differs. Some articles have a methodological focus while others present preliminary results from ongoing studies or reviews of existing work. Topical and timely subjects include children's services, informal care and outcome measurement in service settings. Martin Knapp's review of economic studies of mental health care among children and adolescents suggests: high prevalence rates, many unmet needs, inherent difficulties with multi-agency provision and a lengthy agenda for future research.

Sherrill Stone and others discuss quality of life measurement, its usefulness as an outcome measure for mental health care and its application in service settings in the context of results for two groups of patients from Britain and Germany. Daniel Chisholm provides some preliminary results from three studies on the extent to which psychotherapeutic approaches in combination with drug therapy provides a cost-effective use of resources. These small-scale studies suggest that psychotherapeutic approaches for depression, psychosis and bipolar disorder may be cost-effective. Shane Kavanagh and Andrew Fenyo provide basic information on the receipt of informal care by people with depression. Finally, Stephen Almond provides an accessible discussion of the use of decision-analytic models for treatment comparisons and the difficulty in applying them to schizophrenia.

Enquiries about individual articles may be made direct to the authors: contact details are on the back cover or at the foot of articles. We welcome comments and suggestions about the Review. *Please send these to the co-editors. Views expressed in the* Review *are not necessarily shared by the bodies funding the research.*

Costs of mental illness in England

Anita Patel and Martin Knapp

Each year, one in four adults will experience some form of mental health problem (Goldberg, 1991). A prevalence rate as high as this is likely to have enormous economic implications. In a small research study carried out at CEMH last year, funded by the Health Education Authority (HEA) as part of their mental health awareness campaign in the UK, we tried to put some figures on the economic implications of mental illness. Here we describe the results and (briefly) the methods that underpin them.

Of course, we are not the first to estimate the costs of mental illness. Smith et al. (1995) offered a helpful review of published evidence (by diagnosis), but data limitations made it impossible for them to compute an *overall* cost of mental illness. They suggested that the economic burden of mental illness was in the region of £4.1 billion (1986 prices). Other UK cost-of-illness studies (or similar) have tended to be disease-specific. Examples are: Davies and Drummond (1994) and Knapp (1997) for schizophrenia, Gray and Fenn (1993) for Alzheimer's disease and Kind and Sorensen (1993) for depression.

Coverage

Our cost estimates were focused on all mental illness in England. We aimed to build up a comprehensive cost-of-illness estimate entirely from either published national data or from secondary analysis of smaller data sets. Inevitably, some of the component estimates are of better quality than others, for the underlying data were of variable quality (as we describe below). However, our brief from the HEA asked us to identify and measure *all* relevant costs.

Total costs

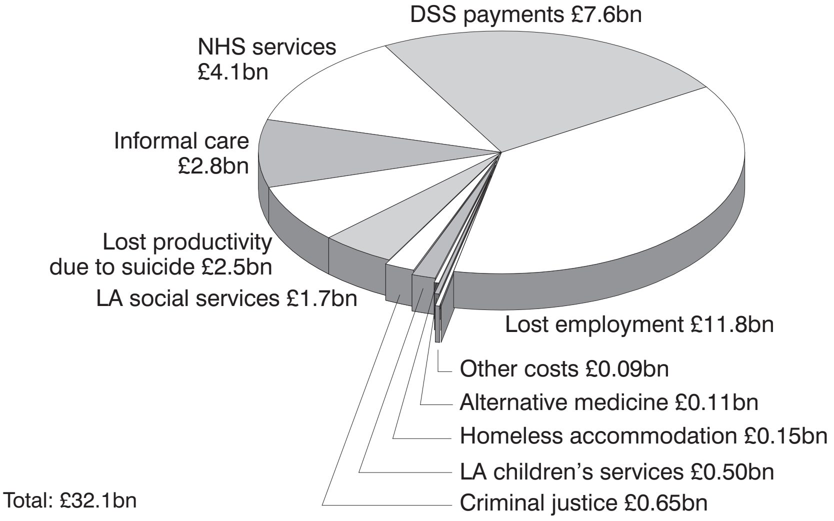
The estimate we obtained for the annual total costs of mental illness in England at 1996/97 prices is £32.1 billion. This is a lower-bound estimate, but it is still a substantial amount. The *Guardian* newspaper reported this figure in an article on World Mental Health Day (1997), noting that it exceeded the country's total defence budget. Comparisons of this kind are not always very meaningful, but they probably help to lodge in the public mind the vast social impact of mental illness.

Figure 1 shows how this total of £32.1 billion was made up. Eleven component costs are identified, ranging at one extreme from £11.8 billion due to lost employment and the associated losses in productivity, to the £108 million expenditure by individuals on alternative and complementary medicine. (There are in fact some smaller items in the 'other costs' category in the pie chart.) We now describe how we arrived at these component cost estimates.

Methods

NHS services and local authority social services We were particularly keen to obtain as accurate a set of estimates as we could for the costs of NHS services and local authority social services, given their pivotal role in the treatment and support of people with mental health problems. Data were obtained from *Burdens of Disease,* published by the NHS Executive (1996), which built up diagnosis-specific costs from expenditure figures in the NHS programme budget.

Figure 1 The cost of mental illness in England (1996/97 prices)



The general approach of *Burdens of Disease* was to allocate total expenditure to the immediate (diagnostic) cause, based quite heavily on Hospital Episode Statistics. One consequence is that the resultant expenditure burden will often be lower than estimated in other studies — particularly cost-of-illness estimates — which (usually) also include costs of associated secondary diseases. The estimates in *Burdens of Disease* obviously could not include these secondary effects without substantial double-counting. But if there were missed diagnoses of mental illness, or mental health symptoms were taken as secondary to some other symptoms for the purposes of classification, costs would have been under-estimated. Another reason why the figures in table 1 probably fail to pick up the full costs of mental illness is that the expenditure analysis in *Burdens of Disease* excluded around 15 per cent of health and social services expenditure because this could not be allocated to diagnostic categories. Major exclusions were NHS headquarters and Department of Health administration, ambulance and accident and emergency services, day hospital care, services classified in the programme budget as 'other hospital', social services for children, and centrally-financed services (for example grants to voluntary organisations). We were able to use an alternative estimate for expenditure on (relevant) children's social services taken from the Audit Commission (1994).

Charitable funds The voluntary sector has a long history of service provision and advocacy in the mental health area. Today, much of its activity is funded by the public sector through grants and contracts, and thus already covered by the figures for NHS and local authority spending. But some of the voluntary sector's expenditure is financed from other sources. We were able to estimate this contribution from a 1995/96 study by a consortium of organisations (including the PSSRU).

This research consortium carried out a survey of charities on behalf of the Office of National Statistics (formerly the OPCS), sampling 5840 of the estimated 120,000 active general charities in the UK. Eighteen of the sampled organisations were mental health charities, from which we estimated that the *full* voluntary mental health sector had a total income of £69 million in 1994/95 and total expenditure of 95 per cent of income. Of this total income, 82 per cent came from government and 18 per cent (£12 million) from charitable contributions, commercial income and investments. It is the latter figure which we include in our total economic costing.

Alternative medicine There are about 2,050,000 alternative and complementary treatments carried out each year in the UK. Including counselling, this figure rises to approximately 30 million treatments a year. Assuming 3.5 treatments per person — an estimate recommended to us during the course of our work — roughly 10-12 million people visit complementary practitioners each year. These are somewhat rough estimates because there is no national register kept by the Department of Health, only by the British Council of Complementary Medicine, which is supported by about 250 organisations.

Putting a cost on alternative medicine is also problematic as costs vary greatly and are sometimes under-estimated. Although treatments such as reflexology, aromatherapy, massage and shiatsu cost about £30 per hour, the Research Director at the Institute for Complementary Medicine suggested that the true hourly cost of other treatments is about £60. We used a unit cost estimate of £45 per treatment and applied this to the approximately 30 million treatments carried out each year to obtain an annual total cost of £1,350 million. To arrive at the proportion relating to mental illness we simply applied the prevalence rate of 8 per cent for mental illness in the general population (OPCS, 1995). This gave our (very approximate) estimate of £108 million for annual private expenditure on alternative medicine for mental illness.

Patient/carer travel expenses Patients or their carers often have to pay for travel to and from treatment. We estimated these expenses by applying the figures reported in the recent research by Creed et al. (1997) to the inpatient population (Department of Health, 1997). These are again low estimates of the true costs because travel to so many other services is not costed, but we had no basis for estimation.

DSS payments Because eligibility criteria for benefit claims are not tied to diagnoses of mental illness, it is difficult to determine accurately the value of social security payments to people with mental health problems. DSS/Benefits Agency and local authority benefit statistics do not distinguish between claimants with and without mental health problems.

Including social security benefits when estimating the costs of an illness is contentious, as many people might argue that these are actually transfers of payments from one part of the economy to another, without goods or services being exchanged in return. A counter-argument is that the amount spent on benefits could have been used in other ways and thus should be included when measuring the burden of a disease. Table 2 reports figures for social security expenditure on mentally ill people. We constructed these figures from data in the OPCS *Surveys of Psychiatric Morbidity* (1995) on the numbers of people with psychotic or neurotic disorders living in the community who receive benefits, and the types of benefit they receive.

The aggregate figure of £7.6 billion is nearly 9 per cent of total benefit expenditure for 1995/96, which is substantially higher than the figure of £1492.9 million computed by Smith et al. (1995) for 1986. Although the calculation for those in hospital may be over-estimated by assuming that all receive the DSS personal allowance, the overall figure could well be on the low side because of the exclusion of benefit claims by two large groups of people: a proportion of those in residential care and homeless people.

- The first exclusion was necessary because the personal social services column in table 1 (adapted from *Burdens of Disease*) included expenditure on income support for a large proportion of residents of independent residential care and nursing homes. This inclusion was made by the Department of Health researchers because, following the 1990 NHS and Community Care Act, responsibility for public finance for new residents in these homes has gradually been transferred from DSS to local authorities. We could not

Table 1 Programme budget costs of mental health problems, England, 1992-93, and percentage of total NHS expenditure (all ICD)

	Hospital inpatient[a]		Hospital out-patient		Primary care		Pharmaceutical		Community health		Social services	
	£m	%	£m	%	£m	%	£m	%	£m	%	£m	%
Dementia	424	3.49	5	0.23	21	0.59	–	–	52	1.8	348	6.5
Other organic psychoses	49	0.40	3	0.13	10	0.29	–	–	–	0.0	59	1.1
Schizophrenia	652	5.37	1	0.04	2	0.05	32	1.06	26	0.9	96	1.8
Other non-organic psychoses	294	2.42	12	0.53	16	0.45	–	–	–	0.0	–	–
Neuroses	75	0.62	49	2.13	39	1.09	96	3.13	139	4.8	150	2.8
Alcohol and drug misuse	51	0.42	11	0.50	3	0.09	5	0.17	160	5.5	75	1.4
Other neuroses	230	1.89	73	3.18	37	1.06	26	0.84	–	0.0	11	0.2
Learning disability	839	6.91	6	0.26	–	0.00	–	–	212	7.3	745	13.9
All mental health	2614	21.5	160	6.97	128	3.62	159	5.20	589	20.3	1484	27.7

Source: NHS Executive (1996)

Notes:
a. Includes residential provision (e.g. hostels) funded by NHS
b. Schizophrenia and other non-organic psychoses excluding depression.
c. Depression (includes dementia, other organic psychoses, neuroses).
d. Excluding depression.
e. Other organic and non-organic psychoses combined..

estimate the numbers of people with preserved rights to DSS support because they started their residence in care homes before April, and so we have not included them in table 2.

- The second omission was of homeless people with mental illness. The OPCS/ONS Surveys of Psychiatric Morbidity (1995) among homeless people found that 63 per cent of hostel residents relied entirely on state benefits, with 64 per cent claiming income support. Seventy-seven per cent of homeless people in night shelters and 68 per cent of those sleeping rough but using day centres were receiving state benefits. Due to the high prevalence of psychiatric illness amongst homeless people (among hostel residents, 8 per cent had a psychotic disorder and 41 per cent had a neurotic disorder), their exclusion from the calculation again biases our figures downwards.

Informal care Costing the informal care offered by relatives and friends is fraught with methodological problems. It is especially difficult to aggregate the

Table 2 Estimates of Department of Social Security benefits for mentally ill people in hospital and community settings

Place of residence		Number of people	Value of benefits received per year (£)
Hospital		27,453	17,844,450
Community	— psychosis	115,532	211,488,659
	— neurotic disorders	4,910,115	7,602,006,424
Total			7,602,338,533

Notes:
a. For hospital patients, it is assumed that each person receives a DSS personal allowance of £12.50 per week (1997/98 rate) (Disability Alliance, 1997). Estimates for those in the community are based on benefit take-up rates for each group found in the OPCS Surveys of Psychiatric Morbidity (1995) and benefits rates for 1997/98. Means were used for those benefits which offered a range of values based on eligibility criteria. It should also be noted that the OPCS data included all benefits claims, rather than only those claimed due to the person's illness.
b. Based on 1995/96 figures for formal admissions to NHS facilities, private mental nursing homes registered to detain patients and special hospitals under the Mental Health Act 1983 (Department of Health, 1997).
c. Prevalence rates from the OPCS Surveys of Psychiatric Morbidity (1995) among adults living in private households were applied to census data on the number of people aged 16-64 living in private households in England (OPCS, 1991).

Table 3 Costs of homeless accommodation

Type of homeless accommodation	Number of homeless people	Cost per week per person (£)	Total cost per year for all homeless (£)	Total cost for homeless people with mental illness (using prevalence rate of 38%)
Hostels	37,500	120	234,000,000	88,920,000
Private sector leased accommodation	53,000	55	151,580,000	57,600,400
Total	90,500	175	385,580,000	146,520,400

results of different studies covering different disease groups. In the aggregation in figure 1, we have used the Mental Health Foundation's (1993) estimate which states that carers have been estimated to save £2.83 billion for mental health and social services.

Accommodation for homeless people With the prevalence of mental illness amongst homeless people being estimated at between 35 per cent and 38 per cent by the OPCS (1995), it was clearly important to look at the costs of accommodation services used by homeless people (table 3). Estimates of the numbers of homeless people in hostels and private sector ('bed and breakfast') accommodation were taken from the OPCS surveys themselves, and the associated costs were obtained from research in progress by Kavanagh et al. The cost of night shelters has not been included as the number of people using them was unknown. Therefore, our suggested cost of £146.5 million is an underestimate.

Criminal justice and victim costs Despite the popular media's sometimes excessive concern with the link between mental illness and violent crime, the criminal justice and victim costs associated with mental health problems have not stimulated much attention among researchers. We were not able to identify all of the associated costs.

In an article in the *British Medical Journal*, Birmingham, Mason and Grubin (1996) described their study at Durham prison which found that 148 of 569 male remand prisoners aged 21 years and over who were interviewed (26 per cent) had one or more current mental disorder, including 24 who were acutely psychotic. This total rose to 354 (62 per cent) when diagnoses of substance abuse or dependency were included. A further 22 men had a history of mental disorder but no current symptoms. These were figures for *remand* prisoners. In contrast, Gunn, Maden and Swinton (1991) found that 37 per cent of male and 56 per cent of female *sentenced* prisoners had a psychiatric disorder (including drug abuse and personality disorder).

To estimate the criminal justice system costs possibly associated with mental illness, we applied these prevalence rates to national prison population numbers and average costs (Home Office, 1995a, 1995b). The resultant figure may be an overestimate as it also includes the prison population of Wales, which we were unable to separate from England.

Moving out from these prison costs to the wider (comprehensive) costs of the criminal justice system and to the costs borne by the victims of crime was not easy. We were able to include some associated costs computed for another CEMH study — of heroin users — and reported elsewhere (Healey et al., 1998).

Lost productivity due to suicide Preventing suicide is one of the central aims of the government's public health strategy, and although it is not the *main* issue, there are costs associated with suicide. No previous estimates could be found, and we were able only to provide an approximation based on the prevalence of mental illness in suicide cases and the (former) Department of Transport's estimation (Department of Health, 1995) of the value of human life (based on what economists call the willingness-to-pay approach). This method explores the payments people would be willing to make for small changes in the probability of death or injury. The 1993 value of life is estimated at £744,100, which includes a small addition for resource costs and net output losses on top of willingness to pay.

Assuming that 90 per cent of the 3,579 suicide verdicts in England and Wales in 1995 were associated with a psychiatric disorder, in this way we estimated the value of life lost due to mental illness-related suicide to be £2.4 billion. This may be an underestimate as the value of life we used lies at the lower end of a range of estimates found in the Department of Transport's review of 53 studies of the valuation of life.

Lost employment One of the most serious consequences of mental illness can be reckoned in terms of labour force participation and productivity. Our estimate of the costs associated with lost employment as a result of mental ill-health was constructed from published disease-specific estimates:

- ❑ For schizophrenia, we used Davies and Drummond's (1994) estimate of £1.7 billion for the UK (1992 prices).
- ❑ For depression we used Kind and Sorensen's (1993) estimate of £3.1 billion (1991 prices).
- ❑ The Confederation of British Industry and Department of Health (1992) estimated that 80 million working days are lost each year as a result of anxiety and depression, at an aggregate cost of £5.3 billion (1991/92 prices). For an estimate of anxiety alone, we subtracted Kind and Sorensen's (1993) estimate of £3.1 billion for depression from this sum.
- ❑ Stress-related absences account for half of all sicknesses, costing £4 billion (Cooper and Cartwright, 1996).

Total costs If we put all these costs together we get the total of £32.1 billion shown in the pie chart. It has been necessary to re-base some costs so that they apply to the same year, and this has been achieved by applying the appropriate cost and price indices published annually by the Department of Health.

It is important to reiterate that the aggregate figure is very likely a lower-bound estimate because of our enforced exclusion of some cost items. In particular, we have not been able to include costs for day hospital attendances, housing benefit claims, some elements of the criminal justice system, DSS payments made to homeless people and lost employment for some diagnostic groups. One of the major exclusions — an intangible cost, but no less important for that — is the effect on the quality of life of patients and caregivers.

Key points

- ☐ The annual cost of mental illness in England is £32.1 billion.
- ☐ Non-NHS costs were almost seven times larger than NHS costs.
- ☐ In addition to the more tangible service-related costs of treating and supporting people with mental health problems there are potentially enormous, but usually unmeasured, effects in terms of the impoverishment of quality of life.

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Illicit drugs and crime: chicken and egg?

Andrew Healey

There are a number of driving forces behind the popular acceptance that illicit drugs represent a 'social cancer'. These include the opinion embodied in the perennial war cry from establishment figures and the public health lobby — fuelled by isolated tragic incidents — that 'drugs wreck lives.' It also seems to be accepted, without question, that involvement in the 'hard' drugs scene will in all likelihood lead to a life of petty and more serious forms of income generating criminal activity. This discussion piece questions existing evidence on the link between drugs and crime and raises a number of empirical issues that need to be addressed if public policy on this matter is to be more fully informed.

Drugs and crime: current evidence

There is no question that crime is costly. Apart from the obvious impact on victims, it places a considerable burden on the public purse, through various criminal justice responses. There is plenty of empirical evidence to suggest that involvement with drugs such as heroin and crack-cocaine is at least *associated* with property crime. However there is still no convincing indication regarding the extent to which criminal acts can be *directly attributed* to use of these drugs.

The conventional explanation behind the assumed causal mechanism linking the use of hard drugs to crime is that most 'junkies' are pharmacologically addicted to their substance of use which manifests itself in an uncontrollable craving to continue use compounded by a desire to avoid the unpleasant effects of 'cold turkey.' Moreover, for those drug users who live in deprived circumstances the expense of maintaining consumption levels is likely to far exceed their personal economic means. Thus property theft provides an obvious means of financing their addiction.

A number of authors have produced evidence which they suggest is indicative of a causal link between narcotic addiction and criminality (for example Ball, 1983; Anglin and Speckart, 1987). Typically these studies have been longitudinal in nature without the inclusion of any control group. Nevertheless, significant reductions in criminality were shown during periods of 'non-addiction' with resultant claims that this provides convincing evidence of a causal impact of drug use on rates of criminal behaviour. Ball, Shaffer and Nurco (1983), for example, summarise this view by stating : 'it seems evident that heroin addiction is criminogenic in the same way that cigarette smoking and air pollutants are carcinogenic.'

Whilst it cannot be denied that the evidence produced by these types of studies suggests at least a pattern of association between income-generating crime and the habitual use of illegal substances, the absence of any matched non-drug using control group means that they are not scientifically geared towards measuring causal relationships: they do not provide a means of testing the extent to which exposure to drug consumption either increases the likelihood or extent of criminal involvement. Furthermore, it is in principle possible to attach any number of explanations to observed longitudinal patterns of crime and drug use. For example, whilst a correlation between levels of drug consumption and criminality could be interpreted as evidence of a causal link between drug use and crime it could be equally argued that concurrent increases in drug use and crime reflect cyclical preferences for 'deviant behaviour'. Thus Hammersley et al. (1989) note that it may also be the case that non-drug using criminals also go through similar periods of criminal activity and inactivity.

Much of the existing evidence on the link between crime and drug addiction fails to take note of the distribution of offences committed across sampled populations. More specifically it is clearly evident from existing data sources that a significant proportion of heavy drug users are not involved in crime. For example, Benson et al. (1992) discovered that only 20 per cent of the drug-taking population in Florida who had contact with criminal justice agencies for drug-related offences (i.e. dealing and/or possessing illegal substances) were involved in non-drug related crime. Hubbard et al. (1989) found that 40 per cent of over 11,000 drug users in the US referred for various forms of addiction treatment reported committing no crime in the year before entering treatment. Similarly, Gossop et al. (1998) observed that around 50 per cent of a sample of 1075 drug users referred to community and residential treatments throughout the UK reported that they committed no property crime over a three month period before entering treatment for addiction. Both these latter studies were, however, based on self-report data generated from interviews with drug users and may therefore under-estimate criminality.

Empirically modelling the determinants of crime in drug taking populations

The fact that heavy drug users can be split between those involved and those not involved in property crime suggests to some extent that both sub-populations may be inherently different in terms of their characteristics and the behavioural patterns that play a crucial role in determining whether or not they engage in criminal activity. Whilst it seems reasonable to hypothesise that higher weekly levels of drug consumption would increase the likelihood that an individual is involved in criminal behaviour, there are also likely to be other factors that simultaneously determine whether a drug user chooses to engage in property theft. These could include, for example, the age and gender of a drug user, income available from other sources (including employment and drug dealing), relative preferences for honest and deviant behaviour, and perceptions regarding the chances of being arrested and the implications of conviction. Moreover, there may be a sub-set of other factors that determine the extent of criminal involvement for those drug users who make an active decision to engage in crime. The extent to which socio-demographic, behavioural and environmental factors impact on the likelihood of drug users embarking on a life of crime and the level of criminal involvement if they do choose this career path can only be answered through empirical investigation.

The impact of drug consumption and addictive behaviour on patterns of criminality *cannot be considered in isolation from other factors that are likely to have a key influence*. The importance of viewing crime and the use of drugs within this multivariate context is two-fold: firstly, any attempt at focusing solely on the role of addiction will simply produce a biased indication of its importance or otherwise as a predictor of criminality; secondly, from a policy perspective, it is vital that the importance of other determining factors are examined so that public policy can be more effectively targeted at preventing drug users' involvement in crime. For example, whilst the importance of drug consumption as a predictor of criminality would suggest that addiction treatments focused on abstinence from use would be one prevention strategy, evidence of a dual impact of limited economic means and increasing levels of drug consumption on rates of offending points to subsidising access to drugs (e.g. via methadone maintenance programmes) as a more effective (and possibly less expensive) alternative. It may also be the case that drug users on the margin of criminal behaviour or currently involved in crime are found to respond to traditional forms of deterrence, in which case increased policing in areas known to have high concentrations of heroin and other hard drug users would represent another option. Of course, from an economic viewpoint these different policy options should ideally not be considered independently of each other and should be subjected to a rigorous appraisal of their costs and benefits.

Key points

☐ The use of hard drugs is perceived as being a key contributor to current levels of criminality

☐ There is currently no overwhelming evidence indicating the extent to which drug addiction increases both the likelihood or extent of criminal involvement

☐ Drug addiction should only be considered as a hypothesised predictor of crime within the context of other factors that may determine criminal involvement

☐ The analysis of drug-related crime within a multivariate context will help decision makers to design more effective policies targeted at preventing crime in drug-taking populations

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Modelling criminal behaviour in a drug using population — current work at CEMH

In the context of the issues raised in the above discussion, CEMH is currently collaborating with the National Addiction Centre, Maudsley Hospital, London on a study of criminal behaviour. A sample of over 1000 drug users is participating in the National Treatment Outcome Research Study (NTORS; see *Mental Health Research Review 3, April 1996*). Whilst the main objective of this study is to evaluate the outcomes and costs of different treatments for drug addiction, self-reported criminal behaviour collected prior to treatment entry is also being empirically modelled. The analysis has two aims: firstly to determine the extent to which there is any inherent difference between criminal and non-criminal drug users; secondly to examine, in the context of other factors, how important increasing levels of daily heroin consumption is in determining the likelihood and extent of involvement in property crime.

What has happened to the old long-stay hospitals?

Ana Lowin*, Martin Knapp and Jennifer Beecham

The enormous resource pressures on mental health care — both hospital and community based — have recently been reaffirmed (Johnson et al., 1997; Shepherd et al., 1997). There are many acute units operating at occupancy levels greater than 100 per cent, whilst adequately staffed community accommodation remains scarce in some localities. Many seriously mentally ill people living independently cannot get access to day support and other services they need (Audit Commission, 1994). Closing the old psychiatric and learning disability hospitals was promoted in the interests of patients' quality of life and normalisation (Leff, Trieman and Goochs, 1996). However was hoped that re-using (or selling) the hospital sites could help the development of a span of good mental health services in the community, which could ease the pressure on acute hospital beds.

Most of England's long-stay hospitals were built in the latter part of the 19th and beginning of the 20th century. The Victorians spent generously on building and landscaping their asylums. Formerly the main treatment base for seriously-ill psychiatric and learning disability patients, these institutions have been closing since the 1960s. Replacement community services must be built before resources can be released from the long-stay hospitals. The white paper *Caring for People* in 1989 proposed agreements with developers to build new places in exchange for the sites. This and the provision of bridging finance has proved insufficient in the majority of cases. Commonly the authorities' pragmatic best is to aim for the fastest sale possible. It has often been suggested that many sites sit vacant for long periods, but there are no centralised records on site sale or re-use (Groves, 1993). So what has happened to the old hospitals?

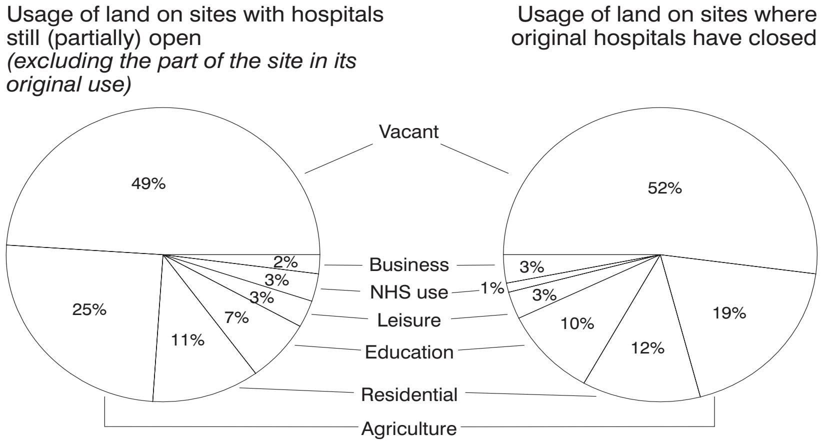
Methods

We identified all of the 206 large psychiatric and learning disability hospitals with over 100 beds in 1962 and 1986 respectively. In August 1996 NHS Regional Executives were sent questionnaires, one per site, asking for summary information on closure dates, current use of hospital sites and difficulties relating to the sale of sites. We received 74 returns and, where missing, used information from the most detailed alternative source (reports by Save Britain's Heritage (Binney, 1995), the Mental Health Task Force (Davidge et al., 1993), or correspondence with local people involved with hospital run-down and site sale).

Results

The planning permission category for a long-term hospital is 'institutional use', that is it may be used for a hospital, school, army base etc. The value of the site will increase dramatically if planning permission is obtained for other uses. For example, in the Mersey region a value of around £50,000 per acre is likely for land with institutional planning permission and £250,000 per acre for land with planning permission for housing. Unfortunately obtaining planning permission for the sites is a lengthy and sometimes impossible process. Public opposition to site development is often fierce. Furthermore, many buildings are listed or have conservation orders on them, and sites are often on 'green belt' land. This can mean that the original buildings must be re-used, not demolished, and that the

Figure 1 Re-use of land on the sites of England's old asylums



density of redevelopment cannot exceed the original footprints, creating difficulty in finding appropriate buyers.

We found that half of the land on sites where the original hospital had closed was vacant (figure 1). Planned uses, regularly mentioned for this land, were mainly for residential development, although business, leisure and retail plans were also often mentioned. Of the 40 sites on which hospitals had closed, sixteen remained predominantly (at least 90 per cent) vacant, for up to sixteen years. The hospitals had closed an average of four years ago. Re-used land was most commonly deployed for agricultural, residential, educational, leisure, business and other NHS activities. Land was re-used by the NHS for a variety of purposes, including provision of hospital services, nurse's accommodation, day centres and administration. Agriculture and NHS activities were more common on sites where part or all of the original hospital was still open, but did not feature in plans for vacant land. As it is relatively straightforward to convert land for these purposes it seems that these may well be short-term uses while planning permission for other purposes is sought.

Comment

Once deliberately remote, the former asylums now often occupy prime sites with attractively architectured buildings and grounds. Many of the old asylums (which often sheltered up to 3,000 patients) are set within sites of 80 acres or more where chapels, orchards and farms were once housed. These spacious sites are often in excellent locations on high ground, with fine views, on the edge of (or now sometimes surrounded by) towns and cities. This picture might encourage one to imagine that the demand and value for these sites would be enormous.

Our survey indicates that 40 per cent of the sites remain vacant. Each vacant site generates maintenance costs (£10,000 to £336,000 per year were quoted for ten sites by one regional finance office), but these pale in comparison to the likely opportunity costs measured in terms of the health and community care services that could be provided with resources released by selling or re-using vacant sites.

The scale of these opportunity costs depends on site values, sums that ultimately depend on location and planning permission. If the land cannot be sold at a reasonable price, should some of the cost-effectiveness arguments backing decisions for de-institutionalisation be called into question?

In 1994 the government recommended that sales money be ring-fenced for adult mental health (Department of Health, 1994). This probably has not happened, but delays in selling hospital sites are exacerbating an already-difficult resource problem. If the future development of community mental health care is even partly dependent on the release of resources from asylum sites we could be in for a long wait.

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Key points

- ☐ After closure, the sites of Britain’s Victorian mental asylums must be sold quickly and for a good price, as the money is often needed to fund the process of community reprovision.
- ☐ Forty per cent of closed hospital sites remain vacant, and have been for on average four years.
- ☐ Money from these unused assets cannot be re-invested. Moreover there is a high cost of site maintenance and security.
- ☐ Some of the services or facilities needed by people now living in the community simply cannot be established until revenue from land sales has accrued.

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Identifying the problems of financing long-term residential care

Angela Hallam

Introduction

The terms of the NHS and Community Care Act (1990) brought about major changes in the way long-term residential care is arranged and financed. This article sets out to:

- ☐ sketch in the background and indicate tensions within the pre-reform system;
- ☐ highlight arrangements for funding and monitoring residential care which were implemented as part of the reforms in April 1993;
- ☐ focus on the effects these arrangements are having five years down the line; and
- ☐ examine concerns for the future being expressed by purchasers and providers.

Naturally, a short article imposes its own restrictions on level of detail and area of focus. The main point of reference for this paper is a psychiatric reprovision programme in North London, but the issues raised have relevance for the continuing residential support of people in all adult care groups throughout the UK.

Funding community care before 1993

An expansion of state-financed long-term care took place during the first 30 years of the welfare state, but capital for the development of local authority Part III homes ceased to be available after 1976. Dwindling grants to voluntary organisations from local authorities also led to pressure on residential care places. As a result of these constraints, people with limited means were given the right to supplementary benefit (later known as income support) to pay for admission to a private or voluntary residential or nursing home of their choice.

Without adequate assessment of care needs, provision of residential care proved a major drain on social security expenditure. The number of people in England supported by the Department of Social Security (DSS) in these placements rose from 16,000 to 281,000 between 1982 and 1993, and the cost increased from £39 million to £2,575 million (House of Commons Health Committee, 1995).

Public policy already favoured the replacement of long-term NHS hospital care with community-based alternatives. Legislation under Section 28A of the NHS Act, 1977 provided for transfers of money to community care, including social services.

> Health Authorities have statutory powers ... to make payments to local authorities and other agencies in relation to the purchase of personal social services, education for disabled people and housing (NHS Management Executive, 1992)

The development of community services was hampered because resources were tied up in providing hospital care for the remaining population of long-stay patients. To overcome this problem, a ‘dowry’ system was introduced in the early 1980s. This was designed to allow the movement of money from hospital budgets to the budgets of community services in a way which provided a pool of semi-protected resources for former long-stay patients. Dowries were usually only paid on the permanent closure of a bed (Beecham and Lesage, 1997), although there was considerable variation around England in the ways in which the broad national guidelines on health service budget reallocation were implemented.

In the North East Thames region, where an evaluation of the reprovision of psychiatric services from the Friern and Claybury hospitals has been conducted since 1985, the amount of the dowry transferable to a community placement was calculated as the average revenue costs for each hospital, divided by the number of beds available when the reprovision programme started. The dowry transfer was linked to the creation of a 'new' place in the community and, although intended for the long-stay patient moving into that placement, the place would continue to be funded after the person died or moved on (Knapp, Beecham and Renshaw, 1987). If dowries were transferred to agencies other than the NHS, they were reduced by the amount of social security benefit which could be claimed by the client. This increased the pressure on the DSS budget, as outlined above.

Where people moved from hospital into independent domestic housing, the NHS relinquished responsibility for all accommodation costs. This was the case for 14 per cent of the 751 people whose service packages were costed in the North London study. (Most recent findings from the economic evaluation, carried out by researchers at CEMH, are reported in Beecham et al. (1997). For details of the clinical study, undertaken by the Team for the Assessment of Psychiatric Services (TAPS), see Leff, (1997)).

Impact of the NHS and Community Care Act (1990) on the provision of continuing care in England

In April 1993, local authorities assumed the financial responsibility for long-term care which had formerly rested with the DSS. People who were permanently placed in homes managed by private or voluntary organisations before the implementation of the Act, however, retain preserved rights to the higher rate of income support paid before 1993 (£208 per week in 1997-98 in homes for elderly people outside London).

New residents are assessed by their local authority for their ability to contribute towards the costs of meeting their care. The local authority then pays the full care home fee and recovers a charge from the resident. The higher level of income support is not available to new entrants, although they are entitled to ordinary income support payments and may claim a means-tested residential allowance (typically £56 per week).

Certain arrangements remained unchanged by the Community Care Act. Residents of local authority homes or NHS hospitals were not supported by the DSS before or after April 1993, except for the payment of a small personal allowance payable to all people resident in long-term care.

Local authority/DSS funding of residential care

Since 1993, local authorities have received a special transitional grant (STG) to cover the costs formerly met by the DSS. Each year the 'new' STG has been ring-fenced for community care but, although the previous year's grant was included in authorities' ordinary standard spending assessment (SSA) baseline for calculating the next year's expenditure, the actual amount was no longer ring-fenced. Until the end of the 1997-98 financial year, a condition has been that 85 per cent of the transfer element should be spent on services provided independently of local authorities. The STG will carry on for at least one more

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1 There are differences in Wales in how the reforms are carried out and, although sections of the Act apply to Scotland, the organisation of services and service arrangements varies from England. Northern Ireland is not covered by the Act (Meredith, 1995).

year, but in 1998-99 the ‘85 per cent’ condition has been dropped (Department of Health, 1997a).

While the burden of responsibility has altered, the number of publicly supported persons in residential homes has varied little since the peak in 1993 (table 1), an unexpected finding given policy aims to scale down levels of residential provision. Table 1 shows that, although the preserved rights population is dwindling, substantial numbers are still supported by the DSS: 131,000 people in February 1997. Of those people aged 60 or younger, 22,000 people had learning disabilities, 9,000 were physically disabled and 5,000 had a mental illness (table 2). An endpoint may be envisaged for the payment of higher levels of income support for the care of elderly people, but it is difficult to judge how long people who have mental illness or other disabilities might remain in residential or nursing home care. Clearly the two systems will continue to run in tandem for the foreseeable future.

Table 1 Income support claimants in residential care and nursing homes (UK) 1990-1997

	Type of care		
	Residential allowance	Preserved rights	
		Residential care home	Nursing home
1990 May	n/a	127,000	65,000
1993 May	3,000	163,000	129,000
1995 February	90,000	112,000	79,000
1997 February	159,000	83,000	48,000

Source: Table 8.1 *Income Support Statistics,Quarterly Enquiry February 1997,* Department of Social Security Analytical Services Division.

Table 2 Income Support claimants with preserved rights in residential care and nursing homes by age and type of care: February 1997(UK)

	Nursing homes			Residential care homes		
	Under 60	60 to under 80	80 and over	Under 60	60 to under 80	80 and over
Very dependant elderly	n/a	–	–	n/a	3,000	16,000
Mental illness	1,000	2,000	1,000	4,000	4,000	1,000
Learning disability	2,000	–	–	20,000	6,000	–
Physical disablement below pension age	2,000	2,000	n/a	7,000	2,000	n/a
Physical disablement above pension age	n/a	1,000	2,000	n/a	–	–
Terminal illness	–	3,000	8,000	–	–	–
Old age	n/a	–	–	n/a	4,000	15,000
Other[a]	–	5,000	17,000	–	–	–

Source: Tables 8.6 and 8.7, *Income Support Statistics Quarterly Enquiry February 1997,* Department of Social Security Analytical Services Division.

Note: a. Includes elderly and very dependent elderly people in nursing homes.

Health service funding

Between 1990 and 1995, the total number of long-term NHS beds fell by more than 40,000, almost half of this total during the two years following the implementation of the reforms (table 3). Before the reforms, guidance to health authorities on community care stated:

> dowry payments should be set at a realistic level to meet the total continuing costs of care, taking account of ex-patients’ own resources, including available Social Security Benefits, and the contribution that LAs may be expected to make, bearing in mind the new arrangements and the transfer of funds from DSS in April 1993. (HSG(92)43)

The document made it clear that dowries would continue to play an important role. Indeed, the Department of Health confirms that HSG(92)43 remains current (December 1997). The most recent guidelines from the NHS Executive on the subject, HSG(95)45, again state that:

> In respect of people being discharged from long stay institutions, the NHS is responsible for negotiating arrangements with local authorities, including any appropriate transfer of resources which assist the local authority meeting the community care needs of such people and of their successors who may otherwise have entered the institution.

Although the regulations governing other sources of funding have changed, guidelines relating to dowry payments have not been updated or refined since HSG(95)45 (above). Consequently, many health authorities claim the dowry system is out of date, and there is confusion about how it is to continue to be administered.

Table 3 Numbers of long-term NHS beds in England in 1990, 1993 and 1995 by care group

Care group	1990	1993	1995
People with mental illness	17,660	12,000	9,000
Elderly people / in EMI provision	55,340	47,700	37,000
People with learning disabilities	26,400	18,500	13,200
Total	99,400	78,200	59,200

Sources: Tables 4.5 and 4.8 and Figure 5.2 in *Laing's Review of Private Healthcare, 1996*; Table 12 in *Meeting the Costs of Continuing Care,* Joseph Rowntree Foundation 1996.

Changes in housing benefit rules

People in supported accommodation are able to claim housing benefit from local authorities. This has been an important resource, since the payment traditionally covered 'eligible rent', a loose term covering services such as counselling and support, if they related 'to the provision of adequate accommodation' (The Disability Alliance Educational and Research Association, 1997). Recent DSS research revealed that 'large numbers of the most vulnerable tenants' were reliant on housing benefit to meet the costs of intensive support and supervision, with charges for such services ranging from £10 to £80 per week (DSS note for local authority associations, July 1997).

Following a High Court ruling in July 1997, however, housing benefit regulations have been amended in favour of a narrow interpretation of DSS guidance. The amendment clarifies the services for which housing benefit may be used. It makes provision for payments to continue to meet charges for general counselling and other support services payable by current and future tenants of existing schemes, but new housing schemes will need to find other sources to finance such services. Furthermore, the arrangements are interim measures only and, as such, are designed to remain in place only 'until such time that the interDepartmental group implements a long-term funding arrangement for supported accommodation' (Department of Social Security, 1997).

Concerns for the future in North London

Supply and demand: a mismatch? Purchasers and providers of services claim the facilities which were set up as part of the Friern and Claybury reprovision programme are no longer appropriate, either for the people they were designed to accommodate, or for the new people needing these placements. Many former long-stay patients are now in their 70s and 80s and their needs have changed in the years since they left hospital. The physical environment itself may no longer be suitable and, even when ground floor bedrooms and wheelchair access are available, changing levels of care needs and consequent re-registration with registration and inspection units can have major cost implications. Alternatively, residents may have to go through another move (if suitable nursing home care for people with severe mental illness is available locally).

The new generation of mental health service users is very different from the people who spent long periods in psychiatric hospitals. Younger people object to shared facilities, particularly bedrooms, and prefer staff support to be provided on a floating basis. Accommodation arrangements flexible enough to meet a range of needs, ages, and ethnicity are often not available (report of Chief Social Services Officer, Islington Neighbourhood Services, 1996). People who have challenging or self-harming behaviour may spend months in inappropriate acute hospital care.

Whose responsibility? The reprovision programme in North London was organised so that money moved from hospital into the establishment of permanent community places. As noted earlier, HSG(95)45 guidelines appear to accept NHS responsibility for the generations who have been diverted from institutional care. However, when the people who replace the former long-stay patients are coming from the community, and have never been in hospital for long periods, it is argued that their needs are for social care and, as such, are a local authority responsibility.

The new housing benefit regulations are likely to affect the nature of supported accommodation projects which are currently at the developmental stage. While eligible service charges could be used to fund care services, it was possible to give residents the opportunity to claim their own DSS benefits and live relatively independently. The changes will mean that other sources must be tapped to pay for resident care and there may be pressure for facilities to register as residential homes in order to gain access to funds. This is unfortunate for the autonomy of service users, since their income from the DSS route would be pegged at the level of personal allowance (£14.10 per week in 1997-98).

Conclusion

This article has explored the problems of financing continuing care into the next century. It is clear that the availability of multiple sources of funding has encouraged a climate of cost-shifting, exacerbated by poorly defined agency responsibilities. The future of STG arrangements is now uncertain: what will happen once the annual grant is discontinued? Money which is not ring-fenced is particularly vulnerable.

How will new supported accommodation services develop, with the recent restrictions to housing benefit encouraging local authorities to backstep into residential care? The opportunity to review the elements of housing benefit should be used to clarify a situation where considerable amounts of care had been funded invisibly, and to channel funds more appropriately.

Finally, what is the role of the health service in the continuing community-based care of former long-stay patients, and the people who would have followed them if the hospitals had not closed? The recent white paper set out the government's commitment to strengthening links between health and local authorities (Department of Health, 1997b). It is to be hoped that the framework envisaged will enable roles and lines of accountability to be clearly defined. This paper has highlighted the climate of suspicion which exists between agencies, current joint commissioning responsibilities notwithstanding.

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Key points

- ☐ In April 1993, local authorities took over financial responsibility for long-term care from the Department of Social Security.
- ☐ Although funding responsibilities have changed, the number of publicly supported persons in long-term care has remained fairly consistent.
- ☐ Guidelines relating to the funding mechanisms arranged to shift money from hospital to community-based provisions have not been updated since the implementation of the the Act.
- ☐ Recent changes to housing benefit rules have restricted the services for which it may be claimed. In future, supported accommodation services may need to backstep into residential care in order to access funding.
- ☐ Purchasers and providers raise major concerns regarding a mismatch between service demand and supply, poorly defined agency responsibilities and cost-shifting between agencies.

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Use and cost of primary care services by people in residential mental health care

Daniel Chisholm

Policy context

The continuing shift of care for people with mental health problems from hospital to community-based settings raises the question of the extent to which this relocation has affected the workloads of not only community mental health professionals but also primary health care workers. Between 10-20 per cent of general practitioners' time is taken up with care for people with mental health problems (OHE, 1989), and there is some evidence that this proportion is increasing, particularly for GP practices located close to psychiatric hospitals that have been or are being closed down (Kendrick, 1991).

As the role of primary health care teams continues to be developed and refined (Strathdee and Jenkins, 1996), particularly with respect to people with less severe and enduring mental health problems, it is important to keep in mind the demand made of their services by those in residential care.

GP service use and cost by people in mental health residential care

Using data from a large, collaborative survey of residential care needs and costs for people with mental health problems in eight areas across England and Wales (Lelliott et al., 1996; Chisholm et al., 1997a), the annual GP contact rate for a number of these residential care settings are reported, together with an estimate of the costs associated with these contacts (table 1). The survey data were collected in 1994, but costs have been inflated to 1996-97 prices, estimated at £1.23 per surgery/clinic minute (Netten and Dennett, 1997).

For the sampled population as a whole (n = 1,358), the mean annual number of GP contacts per resident is 7.2 (S.D. = 10.9; median = 4), at an average cost of £85.50 (S.D. = £137.20; median = £49). Analysis of variance by type of facility, provider agency, diagnosis and degree of physical disability revealed statistically significant differences in the rate of contact and cost (all differences significant at p.05 except costs by provider agency, for which the p value = 0.17). For example, residents with a drug/alcohol problem or a diagnosis of personality disorder make considerably greater demands on GP's time (at a consequently greater cost) than residents with a diagnosis of dementia or schizophrenia. There is also a marked difference in use and cost depending on whether individuals have a physical disability.

Changes in demand

By combining these data with the number of places available in all forms of residential accommodation in 1994 and five years previously, it is possible to impute (in simplistic terms) the change in demand for GP services that has arisen since the *NHS and Community Care Act* in 1990 (table 2). NHS hospital beds for adult rehabilitation and non-acute care for mentally ill people in England have fallen by 51 per cent over this five year period, a gap that has been largely filled by independent sector provision of residential places (Laing and Buisson, 1996). Adopting median contact rates per annum (table 1), it is estimated that 30,000 more visits were made in 1994 by people in mental health residential care than in 1989.

Table 1 Annual contact rate and cost of GP consultation for people in mental health residential care

	Sample		GP contacts per year (1994)				GP cost per year (£, 1997)			
	N	%	Median	Mean	S.D.	p value (f ratio)	Median	Mean	S.D.	p value (f ratio)
Total sample	1358	100	4	7.2	10.9		49	85.5	137.2	–
Type of facility										
High-staffed hostel	449	33	4	7.0	10.2		49	83.9	146.1	
Mid-staffed hostel	372	27	4	7.3	12.8		49	82.4	116.7	
Low-staffed hostel	181	13	6	9.0	10.4		74	115.4	169.3	
Group home	222	16	4	4.7	6.8		25	48.4	74.4	
Staffed care home	134	10	4	8.6	12.8	<0.01	74	120.2	172.0	<0.01
Provider agency										
NHS	37	3	0	3.6	7.1		0	45.3	100.8	
Local authority	289	21	4	6.1	7.5		49	77.7	137.2	
Private	635	47	4	7.7	12.3		49	87.4	131.0	
Voluntary	397	29	4	7.4	10.8	0.04	49	91.7	149.1	0.17
Diagnosis										
Schizophrenia	754	56	4	5.8	8.5		37	66.8	96.9	
Affective disorders	186	14	4	8.6	12.6		54	114.4	183.7	
Neurotic disorders	171	13	6	9.6	12.7		74	109.6	148.8	
Dementia	30	2	2	4.3	4.8		25	47.6	60.3	
Personality disorder	62	4	6	11.5	20.6		52	116.8	153.2	
Alcohol/drug problems	32	2	8	14.3	16.1		99	155.7	170.6	
No diagnosis	106	8	4	6.2	9.5	<0.01	31	82.3	137.6	<0.01
Physical disability										
None	751	55	4	5.6	8.6		25	66.3	111.5	
Mild	231	17	6	9.0	13.3		74	100.7	158.1	
Moderate	316	23	6	8.8	12.8		49	108.2	156.7	
Severe	59	4	6	11.0	12.8	<0.01	74	149.4	186.9	<0.01

Table 2 Estimated change in demand for GP services by people in adult mental health residential care, England 1989-1994

Sector	Number of places[a]		Change (1989-94)		GP visits p.a.	
	1989	1994	Places	%	Median	Change
NHS (hospital)	20170	9974	–10196	–51%	0	0
LA	4697	3900	–797	–17%	4	–3188
Private	5831	11032	+5201	+89%	4	+20804
Voluntary	4420	7438	+3018	+68%	4	+12072
Total	35118	32334	–2784	–8%	–	+29688

a. *Source: Laing's Review of Private Healthcare 1996* (p.A156). Excludes acute psychiatry and EMI.

The use of services provided outside the residential facility more generally — the 'hidden costs' of residential care, in the sense that they are easily overlooked by an individual placing agency — have been examined elsewhere (Chisholm et al., 1997b). Here, the focus has been on the use and cost of one particular service, in order to demonstrate the extent to which GPs are required to meet not only the mental health needs of those in independent or domestic housing but also those in specialist residential settings.

Key points

☐ Changes to the hospital:community balance of mental health care have altered the workloads of mental health professionals and also primary care workers.

☐ People in mental health residential care have an average of seven contacts with GPs per year, costing £85.

☐ It is estimated that 30,000 more GP visits would have been made by mentally ill people in community residential settings in 1994 than five years previously, reflecting a significant increase in the demand for primary care services for this population.

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Further reading

Additional papers arising from the above residential care study include:

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PSSRU survey of residential and nursing home care

Robin Darton

Introduction

From 1 April 1993, new arrangements were introduced for the assessment of applicants for public funding for residential and nursing home care. Prior to this, social security payments had become an increasingly important source of finance for people entering private and voluntary residential and nursing home care, rising from £10 million in 1979 to an estimated £2.4 billion in 1992-93 (House of Commons, 1993). The then government was concerned that publicly-funded care should be preceded by a proper assessment of an individual's needs (Cm 849, 1989). There is considerable interest in the effects of the changes introduced in 1993 on the characteristics of individuals admitted to homes, and, in the autumn of 1995, the PSSRU began a study of residential and nursing home care for elderly people, funded by the Department of Health, which provides profiles of both new admissions to homes and existing residents. In addition, the surveys were designed to enable comparisons to be made with previous surveys of residential and nursing home care.

Methods

The PSSRU study includes a longitudinal survey of 2500 elderly people admitted to permanent residential and nursing home care with local authority financial support during the autumn of 1995, and a cross-sectional survey of 11,900 residents in 618 residential and nursing homes for elderly people conducted in the autumn of 1996. The longitudinal survey was undertaken in eighteen local authorities in England and the cross-sectional survey was undertaken in 21 local authorities, seventeen of which were included in the longitudinal survey. Follow-ups to the longitudinal survey have been conducted at six and eighteen months after admission, and further follow-ups are planned for 30 and 42 months after admission. Equivalent information relating to physical dependency and mental state was collected in the longitudinal survey and the cross-sectional survey, and enabled the approximate reproduction of the Barthel Index of ADL (activities of daily living) (Collin et al., 1988) and the MDS CPS (Cognitive Performance Scale) (Morris et al., 1994). The Barthel Index is based on ten functions, and a higher score (maximum twenty) corresponds to a lower level of dependency. For the purposes of this paper, a score of eight or less on the Barthel Index has been used to denote severe dependence (Granger et al., 1979). The MDS CPS is a component of the Minimum Data Set, which is a standardised, comprehensive assessment system used in United States nursing homes. The MDS CPS is a 7-category scale based on four areas of functioning, with scores ranging from zero (intact) to six (very severe impairment). For the purposes of this paper, a score of two (mild impairment) or more has been used to denote cognitive impairment.

Results

Table 1 shows the characteristics of elderly people admitted to residential or nursing home care in the longitudinal survey, and table 2 shows their characteristics on admission according to their location at six months.

Table 1 Characteristics of admissions by type of bed to which admitted

Characteristics on admission	Residential beds	Nursing beds	All beds
Mean age	83.5	82.5	83.0
% females	73	68	71
% admitted from hospital	42	63	52
% walk with aids/help/cannot walk	60	89	73
% need assistance to use WC	28	73	49
% need assistance to feed self	11	38	23
% incontinent	15	46	29
% severely dependent (Barthel score 0-8)	20	68	42
% cognitively impaired (MDS CPS levels 2-6)	64	72	67
% display problem behaviour	33	35	34
Total number of individuals	1314	1124	2438

Source: PSSRU Survey of Admissions to Residential Care, 1995.

Characteristics on admission Elderly people admitted to nursing beds tended to be slightly younger than those admitted to residential beds, a slightly greater proportion was male, and they were more likely to have been admitted from hospital. Individuals admitted to nursing beds were substantially more dependent in terms of mobility, the ability to use the WC, the ability to feed themselves, and continence, illustrated by the proportion classified as severely dependent on the Barthel Index of ADL. Individuals admitted to nursing beds were more likely to be cognitively impaired than those admitted to residential beds, but the difference was less marked than for physical dependency, and levels of problem behaviour, such as wandering, physical or verbal abuse or antisocial acts, were similar for both types of bed. Although levels of cognitive impairment were higher among individuals admitted to nursing beds, similar proportions of individuals were recorded as having diagnosed dementia (38 per cent in residential beds and 39 per cent in nursing beds). Depression was reported as having been diagnosed for 14 per cent of individuals in residential beds and for 12 per cent of individuals in nursing beds.

Within residential homes, individuals admitted to local authority homes tended to have lower levels of physical dependency than those admitted to private and voluntary homes, but levels of cognitive impairment were similar. Individuals admitted to voluntary residential homes were somewhat more dependent than those admitted to private homes in terms of continence and levels of problem behaviour, but not in terms of mobility, the ability to use the WC, the ability to feed themselves and cognitive impairment. Levels of problem behaviour tended to be higher in voluntary residential homes than in nursing homes, but otherwise levels of dependency in nursing homes were higher than in residential homes on all measures of dependency. However, as noted above, for both diagnosed dementia and depression the prevalence rates were no higher among people admitted to nursing beds.

Six month follow-up Information on the location of the elderly people six months after admission was obtained for 2044 of the 2438 individuals (84 per cent) shown in table 1. The survey included a check on the location of all the elderly people one month after admission. The information reported as having been obtained at six months includes information obtained one month after admission, principally relating to deaths. Of the 2044 individuals, 251 were admitted from another residential or nursing home, and the information reported here is based on the 1793 individuals who could be followed up from their first admission to residential or nursing home care. Among these 1793 individuals, 64 per cent were still in the original home, 25 per cent had died, 4 per cent had

Table 2 Characteristics of admissions by location at six month follow-up

Characteristics on admission	Residential bed	Nursing bed	Hospital	Private household	Died
Mean age	83.4	82.1	81.4	82.0	83.6
% females	74	69	64	77	66
% admitted from hospital	47	72	63	45	67
% walk with aids/help/cannot walk	58	85	74	61	87
% need assistance to use WC	26	69	41	23	60
% need assistance to feed self	10	30	7	15	33
% incontinent	13	42	34	12	39
% severely dependent (Barthel score 0-8)	18	64	30	20	56
% cognitively impaired (MDS CPS levels 2-6)	64	70	64	52	68
% display problem behaviour	33	34	26	20	33
Total number of individuals	734	493	56	65	445

Source: PSSRU Survey of Admissions to Residential Care 6 Month Follow-Up, 1996.

moved to a different home, 4 per cent had moved to a private household and 3 per cent had entered hospital. Individuals initially admitted to a nursing bed were more likely to have died (37 per cent) than those admitted to a residential bed (15 per cent). Conversely, 71 per cent of those admitted to a residential bed were still in the same home, compared with 56 per cent of those admitted to a nursing bed.

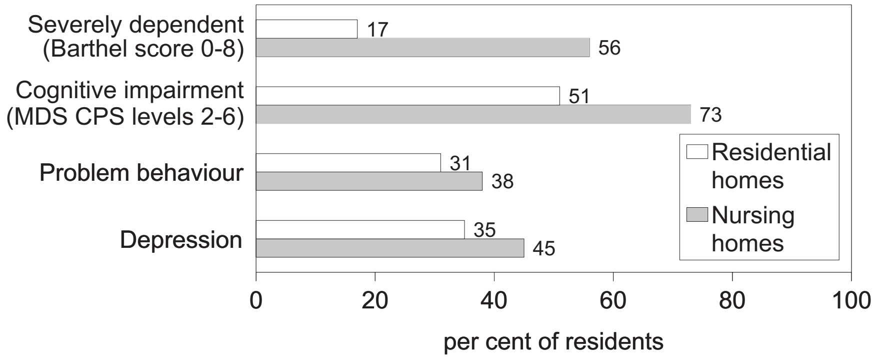
Comparisons of the characteristics of those who died within six months of admission, shown in table 2, with the characteristics of the sample as a whole, shown in table 1, indicates that those who died were slightly older, were more likely to be male and to have been admitted from hospital. They were also substantially more dependent on admission in terms of physical dependency, 56 per cent being classified as severely dependent on admission, compared with 42 per cent of all admissions. However, levels of confusion and problem behaviour among those who died were similar to those among admissions as a whole.

Individuals who moved to a private household between admission and the six month follow-up tended to be younger, and were more likely to be female and less likely to have been admitted from hospital than the original sample of all people admitted to residential or nursing home care. They were substantially less dependent on admission in terms of physical dependency, cognitive functioning and levels of problem behaviour. Twenty per cent of those who moved to a private household were classified as severely dependent on admission, compared with 42 per cent of all admissions, and 52 per cent were cognitively impaired, compared with 67 per cent of all admissions. With the exception of incontinence, levels of dependency among the individuals who had been admitted to hospital were also lower than among those in the original sample as a whole.

People who remained in residential or nursing beds six months after admission had marginally lower levels of physical dependency on admission than was the case for the original sample of individuals admitted to residential or nursing care. Eighteen per cent of those in residential beds and 64 per cent of those in nursing beds at six months were classified as severely dependent on admission, compared with 20 per cent and 68 per cent respectively of those admitted to residential or nursing beds initially. Among people who remained in residential or nursing beds at the six month follow-up, the prevalence rates on admission for cognitive impairment and problem behaviour were similar to those for the original sample of all people admitted to residential or nursing home beds.

Cross-sectional survey (autumn 1996) As in the longitudinal survey, the results of the cross-sectional survey indicate that residents in nursing homes were substantially more dependent than those in residential homes (figure 1). Unlike in the longitudinal survey, levels of physical dependency, cognitive impairment and problem behaviour were slightly higher among residents in local authority residential homes than in private and voluntary residential homes. In addition, symptoms of depression were more prevalent in local authority homes (41 per cent) and voluntary homes (42 per cent) than in private homes (33 per cent).

Figure 1 Characteristics of residents in the 1996 cross-sectional survey of residential and nursing homes



Comparison between the cross-sectional and longitudinal surveys Compared with the individuals included in the longitudinal survey, residents of homes in the cross-sectional survey had lower levels of physical dependency. Residents of residential homes had lower levels of cognitive impairment than the individuals included in the longitudinal survey, whereas residents of nursing homes had similar levels of cognitive impairment. The cross-sectional survey included residents who had survived until the date of the survey, and the differences in levels of dependency between the residents in the cross-sectional and the longitudinal surveys are consistent with the results of the follow-up of individuals included in the longitudinal survey, in which residents who died were substantially more physically dependent on admission than those who survived. The cross-sectional survey included individuals funded by private as well as by public sources of finance, and privately-funded residents tended to be somewhat less dependent (Netten et al., 1997). In addition, the cross-sectional survey included short-stay as well as permanent residents, and short-stay residents were less dependent than permanent residents. However, these factors are only likely to account for part of the difference in levels of dependency between the longitudinal survey and the cross-sectional survey.

Changes over the past decade Levels of dependency were greater among residents of all types of home in the 1996 cross-sectional survey compared with those found in similar surveys conducted in 1986 (Darton and Wright, 1992) and 1988 (Department of Health Social Services Inspectorate, 1989). Increases in the dependency of residents were most pronounced for voluntary residential homes and for nursing homes, both in terms of physical dependency and cognitive impairment. Changes in the level of problem behaviour were less marked, but were also greatest for residents of voluntary residential homes and nursing homes, and the level of problem behaviour appears to have increased among residents of private residential homes but not among residents of local authority homes.

Summary

The follow-up to the longitudinal survey indicated that deaths during the first six months in residential or nursing home care were associated with levels of physical dependency. The comparisons between the cross-sectional survey and previous surveys indicate that levels of physical dependency and cognitive impairment are increasing. Although the level of residential and nursing home provision for elderly mentally infirm people is increasing (Department of Health, 1997, table E1), only 8 per cent of homes in 1997 catered specifically for elderly mentally infirm people. Consequently, the great majority of elderly people with cognitive impairment and other psychiatric disorders seeking residential or nursing home care will have to rely on non-specialist homes for a considerable time to come.

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Key points

- ☐ The survey includes a longitudinal survey of 2500 elderly people admitted to residential and nursing home care during autumn 1995, with follow-ups at 6, 18, 30 and 42 months, and a cross-sectional survey of 618 homes conducted in autumn 1996.
- ☐ Individuals admitted to nursing beds were substantially more physically dependent and, to a lesser extent, more cognitively impaired than those admitted to residential beds.
- ☐ At six months, 25 per cent had died and 68 per cent were still in residential or nursing home care.
- ☐ Individuals in nursing homes surveyed in autumn 1996 were substantially more dependent than those in residential homes in terms of physical dependency and cognitive impairment.
- ☐ Levels of dependency in 1996 were greater than in similar surveys in 1986 and 1988, the greatest increases occurring for voluntary residential homes and for nursing homes.

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The effects of decentralisation on mental health service costs in California

Richard Scheffler, Neal Wallace, Teh-Wei Hu, Joan Bloom & Bowen Garrett*

Background

In 1991, California passed legislation, called 'Program Realignment', to reform its mental health system by dramatically devolving responsibility for its administration and financing to local, county-level mental health systems. California has a long history of including local governments as an agent of the state for the purchase and/or direct provision of some publicly-financed mental health services. However before Program Realignment, this state/local relationship incorporated perverse incentives common to many public mental health systems. For example, the annual budgeting for state and local tax-based grant funding was heavily politicised and incorporated a 'use it or lose it' philosophy. Facilities remaining within budget had their grants reduced by the amount of the surplus for the subsequent year. Furthermore, funding was fragmented between restrictive and proscriptive categorical grants. State-operated or administered care in state mental hospitals was heavily subsidised and funded separately from local mental health services administered by county governments.

Program Realignment gave significantly greater autonomy over service provision to local mental health authorities (LMHAs) in return for acceptance of a comprehensive, fixed block grant removed from the annual budget process. Categorical restrictions were eliminated and all state grants formerly provided to local county-based services along with funding for state mental hospital care were consolidated into a single payment. The formula to distribute revenue to LMHAs was based on relative funding levels in the year prior to Program Realignment implementation in 1991. However, provision existed for funds above a base level to be placed in a redistribution pool, and allocated by a separate capitation formula, thus allowing shifts in funding over time. Funding was financed by a dedicated sales tax. This significant restructuring of financial and programmatic responsibilities provided risks to LMHAs in the sense that, annual total funding was limited to the dedicated sales tax revenue and the incentives to LMHAs were therefore to produce mental health services in a more cost-effective manner. There has since been growth in managed care policies including pre-admission screening and concurrent and retrospective utilisation review.

Three questions are addressed in this paper. What was the aggregate response of California's LMHAs to the incentives for cost-reduction under Program Realignment? Were local variations attributable to LMHA-specific differences in policies for purchasing and direct provision of services? How did these responses affect the balance between inpatient and ambulatory mental health care?

Methods

Data covering each of California's 59 local mental health authorities from 1988 through 1994 were used to estimate the effect of Program Realignment on treatment service costs within statistical models. Therefore, all variables in the statistical model were either aggregated or averaged to the LMHA level. Three dependent variables were used for the regression models: total treatment costs per user, inpatient costs per user, and outpatient costs per user. This allowed the identification of the effect of Program Realignment on overall annual treatment costs per person, as well as any shift in the mix between inpatient and outpatient services. These variables were regressed on a set of independent variables that captured the interaction of the state-wide policy change with locally-determined organisation and service provision.

The independent variables included an indicator of casemix, per capita state grant funding, public and private insurance revenues (Federal Medicaid, Medicare, etc.), the level of 'contracting out' for services, and the relative financial risk for institutional services expenditure. A dummy variable indicating the years in which Program Realignment was in effect is interacted with each of the independent variables. This allows the identification of changes in service provision and expenditure due to Program Realignment.

Results

Our analyses indicate that Program Realignment reduced average cost per user and that these reductions increased over time. The average annual cost per user across all LMHAs decreased by approximately 3 per cent per year following the implementation of Program Realignment in 1991. These reductions in cost appear to have been achieved through substitution of lower cost provision within inpatient treatment service types and through substitution of ambulatory services for inpatient services. Following reform, average inpatient costs per user declined by 12 per cent per year while average outpatient costs per user increased by 10.5 per cent per year. All of the included explanatory variables contribute strongly in explaining variations in costs across the LMHAs and over time. The effect of contracting-out was of particular interest, since this is a policy chosen by individual LMHAs, dependent of course on the supply of local private services. Contracting-out was measured as the percentage of expenditure on private as opposed to public services (excluding state hospital care).

Private providers are generally believed to have a greater capability to respond to economic incentives such as those provided under Program Realignment. This analysis strongly supports this hypothesis. Higher levels of contracting-out were associated with lower overall costs per user after Realignment. They are associated with lower inpatient costs per user in general, with a significantly stronger effect after Realignment. Lastly, while associated with lower outpatient costs per user prior to Realignment, they are associated with higher costs afterwards.

These results suggest that contracting out provision to private providers reduces costs of care by shifting expenditure away from expensive inpatient care to less expensive outpatient care. For example, in the post-reform period a 10 per cent increase in the percentage of provision contracted out (for example from 50 per cent to 55 per cent provision contracted out) was associated with a 3 per cent decrease in overall costs per user, equivalent to approximately $35M per year at 1997 prices for the entire state.

Conclusion

Program Realignment resulted in a reduction in costs for public mental health care following the devolution of financial responsibilities to California's local mental health authorities. Contracting out provision to private service providers by the LMHAs increased cost savings generally, as well as through the substitution of outpatient for inpatient care. The apparent success of Program Realignment suggests that decentralisation policies can be very effective in reducing costs.

Key points

- ☐ In 1991, California devolved the administration and financing of its mental health system to local, county-level mental health systems.
- ☐ Total, inpatient and outpatient costs per user for each of California's 59 LMHAs were analysed for four years prior and three years after Program Realignment.
- ☐ Total costs per user across all LMHAs decreased by 3 per cent per year after Program Realignment with inpatient cost per user declining by 12 per cent per year and outpatient cost per user increasing by 10.5 per cent per year.
- ☐ Decentralisation reduced costs by lessening reliance on inpatient services while emphasising outpatient services.

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Managed care for mental illness: the Massachusetts experience

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Introduction

In the United States, mental health care expenditures have risen faster than those of medical care (Rice et al., 1990) as the supply and demand for mental health treatment remain strong. Fuelling demand is the growing acceptance of treatment of psychiatric and substance use disorders. On the supply side is an excess of mental health professionals and inpatient beds dedicated to the treatment of mental illness. The rate of expenditure increase has concerned state Medicaid programs (health benefits for poor women with young children and the poor with physical and mental disabilities) and in response, they have increasingly embraced managed behavioural health care in their effort to contain health care costs. Private managed care companies that employ techniques such as utilsation review, or selective contracting with providers are increasingly being used by public authorities to reduce the costs of care.

Economic evaluations must examine at least two aspects of managed care (Wells et al., 1995). First, managed care is expected to change which services enrollees use and the volume of services, especially inpatient treatment. Second, it may also have the unintended effect of shifting costs from one state agency to another. In our study of the Medicaid managed care plan in Massachusetts (Dickey et al., 1995, 1996) we chose to study changes in patterns of care and related expenditures for vulnerable high risk enrollees, the seriously mentally ill, because they have been the subject of concern by critics of managed care (Schlesinger, 1986, 1989) and are likely to have the highest expenditures. We also chose to study cost-shifting in this population because their acute care is reimbursed by the state Medicaid agency, but their long-term care is funded by the Department of Mental Health (DMH), also a state agency. This situation, two public funding streams supporting treatment for the same population, makes cost-shifting a possibility if one funding stream is reduced. Therefore, an important criterion for evaluating Medicaid managed care is the extent to which savings were in fact realised. There would be no savings if costs were simply shifted to other state programs.

Background

The Massachusetts Managed Mental Health Program In 1992, Massachusetts was the first state to receive permission from the Federal government to require all Medicaid beneficiaries to enroll in managed care. Medicaid contracted with a single proprietary vendor to manage the delivery of all mental health benefits. The managed care vendor pursued three specific cost-containment strategies: (1) negotiation of lower reimbursement rates with a network of providers; (2) implementation of an aggressive utilisation management plan, (3) development of community-based alternatives to hospitalisation (Callahan et al., 1994).

A key feature of the Massachusetts plan, and one differentiating it from approaches taken in some other states, was the development of a statewide network of general and private psychiatric hospitals through a selective contracting mechanism. Network hospitals gained exclusive access to the vendor's beneficiary population in return for acceptance of a reduced all-inclusive daily rate. Analysis of the factors predicting which hospitals the vendor would choose for inclusion in the network indicated that the extent of a hospital's experience with the Medicaid psychiatrically disabled population was a strong positive predictor of its being selected, while price was not. This suggests that an indicator of quality (experience) was deemed more important by the vendor than were economic factors (Fisher et al., 1997).

Under the terms of its contract with Medicaid, the vendor was required to make available to beneficiaries all behavioural health services, including: acute inpatient treatment, crisis stabilisation, outpatient evaluation and treatment, psychiatric day treatment, residential detoxification, and methadone treatment. The vendor was directed to add diversionary services, including acute residential treatment programs, family stabilisation teams, and partial hospitalisation programs. The vendor also was responsible for utilisation review, claims processing, systems support, provider relations, and decentralised, regionally based case management and network oversight. The contract excluded payment for long-term nursing home care, community support services provided by DMH, medical treatment and outpatient pharmacy. The capitation rate for disabled beneficiaries was almost four times that for non-disabled. All network providers were reimbursed by the vendor on a fee-for-service basis.

Methods

We used paid claims data to study all adult disabled Massachusetts Medicaid beneficiaries, aged 18 to 64 years who received treatment for a major mental illness at least once during 1991-92 (prior to managed care) or in 1994-95 (after the introduction of managed care). We derived costs for Medicaid services from the paid claims indicating the amount reimbursed. The data we report include acute inpatient and outpatient treatment, as well as DMH long-term community support services and state hospital care. All expenditure figures are reported in 1995 dollars by adjusting expenditures in 1991, 1992, 1994 and 1995 for inflation using the gross domestic product deflator (US Department of Commerce, 1995).

Results

Access to care. The largest observed difference between the pre and post managed care cohorts is in the increased number of enrollees (+26 per cent) treated in the 94-95 cohort. This increase suggests that access to care was not limited after the introduction of managed care. We should note that, over this period, the number of enrolled disabled individuals increased in Massachusetts as it did in other states, so it is not surprising to see an increase in the number treated. The socio-demographic characteristics of both cohorts were similar. Clinically, there was an increase in the proportion treated for major affective disorders and a corresponding decrease in schizophrenia.

Patterns of mental health service use. Total admissions to psychiatric and substance abuse inpatient care to general and state hospitals declined substantially, from 26 per cent to 20 per cent of those treated post managed care, but mean length of stay in general and state hospitals combined remained essentially unchanged (31 days per episode) although there was a small reduction in the median length of stay (fifteen days before and twelve days after). If the managed care vendor had shifted inpatient treatment from general hospitals to the DMH facilities, overall admission rates might have stayed the same or increased and length of stay might have increased. This was not the case.

Rehospitalisation (with and without follow-up visits) increased slightly (from 22.1 per cent to 23.2 per cent) after managed care, but the number of admissions

Table 1 Patterns of care and costs, pre and post Managed Care

Patient characteristics	Number of users (%)		Mean total cost ($)		Number of users hospitalised (%)		Mean LOS (days)		Mean hospital cost ($)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Everyone	30,354	38,113	11,053	8,278	7,937 (26.2)	7,695 (20.2)	31.5	31.5	16,868	16,933
Males	12,904 (42.5)	16,506 (43.3)	12,218	9,794	3,367 (26.1)	3,638 (47.2)	40.0	37.5	19,759	19,839
Females	17,450 (57.5)	21,465 (56.3)	10,191	7,237	4,570 (26.2)	3,984 (51.7)	28.8	26.4	14,739	14,446
18-44	18,675 (61.5)	22,923 (60.1)	13,322	9,767	5,799 (31.1)	5,513 (24.1)	33.7	31.8	17,160	16,913
45-64	11,679 (38.5)	15,190 (39.9)	7,424	6,032	2,138 (18.3)	2,182 (14.4)	33.1	30.7	16,078	16,984
Black	2,331 (7.7)	3,010 (7.9)	12,599	10,632	732 (31.4)	781 (26.0)	30.9	34.8	17,378	19,779
Asian	136 (0.5)	114 (0.3)	5,892	10,155	23 (16.9)	24 (21.1)	29.8	40.0	16,892	25,415
Latino	797 (2.6)	885 (2.3)	4,911	4,023	156 (19.6)	125 (14.1)	24.5	22.8	11,706	12,159
Indian	31 (0.1)	36 (0.1)	6,982	5,002	8 (25.8)	9 (25.0)	8.6	13.6	5,205	7,976
White	26,925 (88.7)	33,136 (86.9)	11,102	8,248	6,977 (25.9)	6,305 (19.0)	34.0	32.5	16,913	17,321
Unknown	134 (0.4)	932 (2.5)	17,094	5,688	41 (30.6)	451 (48.4)	55.2	14.3	22,086	7,629
Schizophrenia	13,909 (45.8)	15,033 (39.4)	15,417	13,624	4,099 (29.5)	3,710 (24.7)	43.3	44.1	21,121	23,600
Major affective disorder	14,348 (47.3)	20,738 (54.4)	7,677	4,817	3,492 (24.3)	3,584 (17.3)	22.6	18.8	12,034	10,303
Other psychoses	2,097 (6.9)	2,342 (6.1)	5,210	4,608	346 (16.5)	401 (17.1)	29.6	27.9	15,868	14,502
With substance abuse comorbidity	3,708 (12.2)	6,179 (16.2)	18,604	12,930	2,135 (57.6)	2,763 (44.7)	19.0	19.4	10,190	10,476
Without substance abuse comorbidity	26,646 (87.8)	31,934 (83.8)	10,002	7,378	5,802 (21.8)	4,932 (15.4)	39.0	38.3	19,326	20,551

Note: Pre Managed Care refers to the financial years 1991 and 1992 combined; post Managed Care refers to the financial years 1994 and 1995 combined.

Table 2 Continuity of care within 30 days post hospital discharge, pre and post Managed Care

Patient characteristics	Number of discharges (%)		Not followed-up (%)		Amb. follow-up only (%)		Rehosp. only (%)		Amb. follow-up & rehosp. (%)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Everyone	15,311	14,315	4,139 (27.0)	4,138 (28.9)	7,784 (50.8)	6,857 (47.9)	497 (3.3)	719	2,891 (18.9)	2,601 (18.2)
Males	6,276 (41.0)	6,403 (45.6)	2,009 (32.0)	2,118 (33.1)	2,950 (47.0)	2,903 (45.3)	248 (4.0)	344 (5.4)	1,069 (17.0)	1,038 (16.2)
Females	9,035 (59.0)	7,639 (54.4)	2,130 (23.6)	1,783 (23.3)	4,834 (53.5)	3,947 (51.7)	249 (2.8)	347 (4.5)	1,822 (20.2)	1,562 (20.5)
18-44	11,507 (75.2)	1,063 (74.3)	3,061 (26.6)	3,082 (29.0)	5,798 (50.4)	4,910 (46.2)	398 (3.5)	586 (5.5)	2,250 (19.6)	2,056 (19.3)
45-64	3,804 (24.8)	3,681 (25.7)	1,078 (28.3)	1,056 (28.7)	1,986 (52.2)	1,947 (52.9)	99 (2.6)	133 (3.6)	641 (16.9)	545 (14.8)
Black	1,407 (9.2)	1,495 (10.4)	446 (31.7)	477 (31.9)	641 (45.6)	661 (44.2)	46 (3.3)	85 (5.7)	274 (19.5)	272 (18.2)
Asian	33 (0.2)	37 (0.3)	7 (21.1)	13 (35.1)	21 (63.6)	15 (40.5)	0 (0.0)	2 (5.4)	5 (15.2)	7 (18.9)
Latino	230 (1.5)	199 (1.4)	57 (24.8)	56 (28.1)	148 (64.4)	104 (52.3)	4 (1.7)	10 (5.0)	21 (9.1)	29 (14.6)
Indian	23 (0.2)	10 (0.1)	7 (30.4)	3 (30.0)	9 (39.1)	7 (70.0)	1 (4.4)	0 (0.0)	6 (26.1)	0 (0.0)
White	13,532 (88.4)	11,972 (83.6)	3,596 (26.6)	3,095 (25.9)	6,927 (51.2)	6,034 (50.4)	444 (3.3)	555 (4.6)	2,565 (19.0)	2,288 (19.1)
Unknown	86 (0.6)	602 (4.2)	26 (30.2)	494 (82.1)	38 (44.2)	36 (6.0)	2 (2.3)	67 (11.1)	20 (23.3)	5 (0.8)
Schizophrenia	8,077 (52.8)	7,268 (50.8)	2,276 (28.2)	2,140 (29.4)	3,975 (49.2)	3,363 (46.3)	269 (3.3)	386 (5.3)	1,557 (19.3)	1,379 (19.0)
Major affective disorder	6,741 (44.0)	6,524 (45.6)	1,646 (24.4)	1,765 (27.1)	3,588 (53.2)	3,262 (50.0)	213 (3.2)	320 (4.9)	1,294 (19.2)	1,177 (18.0)
Other psychoses	493 (3.2)	523 (3.7)	217 (44.0)	233 (44.6)	221 (44.8)	232 (44.4)	15 (3.0)	13 (2.5)	40 (8.1)	45 (8.6)
With substance abuse comorbidity	5,463 (35.7)	6,280 (43.9)	1,226 (22.4)	1,481 (25.6)	2,604 (47.7)	3,011 (48.0)	202 (3.7)	329 (5.2)	1,431 (26.2)	1,459 (23.2)
Without substance abuse comorbidity	9,848 (64.3)	8,035 (56.1)	2,913 (29.6)	2,657 (33.1)	5,180 (52.6)	3,846 (47.9)	295 (3.0)	390 (4.9)	1,460 (14.8)	1,142 (14.2)

Notes: Pre Managed Care refers to the financial years 1991 and 1992 combined; post Managed Care refers to the financial years 1994 and 1995 combined.
a. (%) is the per cent of the total number of discharges in the row.

without follow-up by a mental health professional remained about the same. Slightly more than 4000 hospitalisations each year appear to have no such follow-up, although some patients are seen in day programs and residential settings that may provide professional evaluations not reimbursed through Medicaid and thus not reflected in claims. Continuity of care data are shown in table 2.

Assessment of expenditures Average total annual Medicaid *and* DMH mental health expenditures per enrollee fell by about 25 per cent following introduction of managed care, from about $11,000 to just over $8,200 (See table 1). Reduction in expenditures was greatest for those with comorbid substance abuse. Expenditures fell by only about 10 per cent for persons receiving inpatient care, although the fraction receiving such care fell by more than 20 per cent. Combined reductions in the price and utilisation of inpatient care were the chief factors responsible for limiting total expenditures.

Cost-shifting For the seriously mentally ill and disabled, expenditures for their medical disorders increased and might represent a cost-shift from the vendor to Medicaid, which reimburses medical care (Norton, Lindrooth and Dickey, 1997). DMH expenditures for this population declined, suggesting that costs were not shifted to DMH but might have been shifted to the medical sector. The effects appeared stronger for beneficiaries in the highest quartile of expenditures.

Discussion

Our evaluation of the Massachusetts Medicaid managed care plan shows this approach to cost-containment to have been effective in reducing expenditures for beneficiaries' mental health care, primarily by limiting the price and utilisation of inpatient treatment. It also appears that savings derived from managed care were not achieved by shifting costs to the state mental health agency, as some had feared. Moreover, the fears of some advocates that quality of care would be compromised in the interests of cost savings might be allayed to at least some extent by our finding that hospitals' experience with the beneficiary population was a more important factor than the per diem charged prior to managed care in predicting a hospital's inclusion in the vendor's selective contracting network. Unfortunately, our data cannot answer questions about the quality of care and enrollee satisfaction.

While generating some concerns about access to hospital services, these data suggest that many of the cost-savings expected from managed behavioural health care were in fact realised, at least in the short term. The optimistic expectations of some advocates of managed care may need to be reconsidered. For example, our data suggest that continuity of care was not significantly improved and the growth of community-based services to offset hospital treatment appears to have been limited.

Key points

- ☐ In the US, mental health expenditure rose even faster than other medical expenditures.
- ☐ Managed care is increasingly employed to reduce expenditure
- ☐ In Massachusetts, Medicaid expenditures were reduced by 25 per cent following the introduction of managed care.
- ☐ This was achieved largely by limiting hospital admission
- ☐ Medicaid managed care met its cost-containment goals without shifting costs to another state agency.

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Casemix measures of community care services for people with severe mental illness

Paul McCrone

Psychiatric casemix to date

Casemix in health care refers to the grouping of similar patients in a way in which resource utilisation can be predicted. To have *a priori* knowledge of service use and costs is particularly attractive to those planning and financing services. Most work in this area conducted to date has been concerned with the use of in-patient beds, which is understandable given that is where most heath care costs reside. However, whilst in-patient care is still the most expensive element of mental health costs, alternatives are sought and community services are widespread.

In the United States prospective payment based on Diagnosis-Related Groups (DRGs) was introduced to the public Medicare system in the early 1980s (Fetter et al., 1980), as an attempt to slow the escalation in costs. Hospital in-patients were allocated to one of over 400 DRGs, fifteen of which covered mental health and substance abuse, according to their primary diagnosis. Hospitals were paid according to the average length of stay expected for the particular DRG.

The fifteen mental health and substance abuse DRGs were shown to be relatively ineffective and were not routinely used. A number of disadvantages were apparent. It may be that some of the groups were far too broad to be homogenous (one for example contained all psychotic diagnoses). However, in work conducted in the UK it was found that better defined groups may not improve predictive power (McCrone and Phelan, 1994). Allocation to DRGs may also have been made problematic by the presence of comorbidity. This is particularly important given the high levels of substance abuse amongst patients with serious mental illness (Johnson, 1997).

A similar system to DRGs has been developed for use in the UK, called Healthcare Resource Groups (HRGs), as a way of measuring hospital activity, rather than as a form of prospective payment, which was more suited to the US system (NHSME, 1993). Work is currently underway by the National Casemix Office to refine psychiatric HRGs by using socio-demographic information in addition to diagnosis.

Both these systems were created for predicting length of in-patient stays, and have limited applicability to community care services. It would be surprising if diagnosis predicted the community resources required better than it does the length of stay in hospital. In addition, patients who have not been recently admitted may not have an up-to-date diagnosis. Therefore, other factors need to be included in a community casemix system.

Mental health cost functions

A number of studies have used cost functions to predict utilisation of hospital and community services. Using such an analysis, potential predictors of cost are entered into a regression equation and removed if not significant. A summary of factors that have been found to be significantly associated with costs in different studies is given in table 1. It can be seen that being single or living alone is commonly an indicator of high costs, as — to a lesser extent — are disability and presence of social problems. Other findings are less consistent.

This lack of commonality is not unexpected given that the analyses refer to different client groups and service structures, and also that some of the studies

Table 1 Factors predictive of mental health care costs (+ positive effect on cost, – negative effect on cost)

Factors	Patient samples							
	A	B	C	D	E	F	G	H
Ethnicity born in UK								
black Caribbean							–	
Age	–		–					
Living arrangements								
single/living alone	+	$+^{c}$		+				+
divorced/separated/widowed					–			
living with relatives							+	
accommodation risk		$+^{b}$						
miscellaneous accommodation		$+^{c}$	+					
Previous length of stay						–		
Previous day patient								
Not a suicide risk	–							
Male		$-^{b}$						
Education up to primary level								
up to secondary level		$-^{c}$						
Employment skilled/foreman			–					
unemployed				+				
Referral details family								
other specialists			–		–			
unplanned					+			
due to transfer								+
due to inability to cope								–
formal legal status								–
Symptoms						+/–	+/–	
Diagnosis schizophrenia						–		
mania						–		
Disability (social behaviour or functioning								
Physical health needs								
Social problems								
R^2	0.35	0.45^{b} 0.69^{c}	0.39	0.43	0.20	0.36	0.28	0.21

Note: Variables have sometimes been grouped together. In individual studies, where different findings occurred within a category of factors (such as disability or symptoms) the most common finding has been presented if this appeared to be clear. The original papers (listed below and cited by the superscript letters) should be consulted for detailed findings.

Key: (A) psychiatric service provision for patients with psychosis, (B) psychiatric service provision for patients with schizophrenia, (C) psychiatric service provision for patients with affective disorders, (D) psychiatric service provision for patients with neurotic and soma disorders, (E) psychiatric service provision for patients with other diagnoses, (F) community services for patients with serious mental illness receiving emergency home based care, (G) community services for patients with serious mental illness receiving emergency hospital based care, (H) community services for patients discharged from long-stay hospitals

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have focused on all formal community services whilst others have only examined psychiatric service costs. However, there are more technical caveats that should be stressed. First, the variables that remain in the final models depend on the initial selection. Comparing predictive models in an effective way necessitates the same measures being taken. Second, such an approach examines the impact of individual variables with all others taken into account i.e. removal of any one variable would change the coefficients of the others and could even reverse the observed effect. Therefore, the same model construction would need to be employed.

The R^2 in the table indicates the proportion of variation in cost that has been explained by these factors. With one exception, most of the variation remains unexplained. It may be that the supply of services generates utilisation of them. For example, if a client is offered a CPN visit every two weeks they may well accept this, and other things remaining constant, this would cause cost increases. The services that are supplied will depend to a large extent on the orientation of the delivery system, that is whether there is a community or hospital emphasis. Such service supply issues are difficult to model in cost function analyses like these. Replication of these models is difficult as they were often generated in relatively well resourced areas. In other settings — rural areas, for example — very different factors may be shown to be significant.

The future of casemix for community mental health care

Existing models of casemix have been designed for in-patient bed use, and have not performed well. Development of a system for community services is far more complex. Consistency is required regarding the measure of resource use, variables collected, and modelling techniques if the findings of studies are to be combined to achieve this aim.

Key points

- ☐ Whilst casemix has many benefits, the evidence suggests that diagnosis-based systems are not effective predictors of resource use.
- ☐ A growing body of research is emerging which seeks to identify predictors of community mental health costs.
- ☐ Development of community casemix requires consistency in data sets used and modelling techniques.

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Developments in mental health information systems

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Introduction

There is a fundamental difference between management information and research. In principle, management information is required to control a system by anticipating problems and measuring outputs, whereas research is, in principle, driven by theory and hypotheses. However, research geared to influencing policy has to be grounded in the reality of actual systems and populations; for this reason, the data required by managers can be of great interest to researchers. Mental health research at the PSSRU and CEMH is strongly policy-oriented, and therefore has a vested interest in the generation of reliable management information. Over the past two years, several colleagues have been consulted on a Department of Health review of the information available to support clinical care and the provision, management and commissioning of mental health services. If implemented, proposed developments could generate a rich supply of information for both managers and researchers. These developments in mental health information include: minimum data sets for mental health (MDS); healthcare resource groups (HRGs); and linking data from a number of community-based research studies at the PSSRU and CEMH. Information gathered by these means would permit, for example:

- the projection of costs on the basis of service user characteristics;
- closer monitoring of global service provision and unmet need;
- evaluation of the impact of interventions;
- better profiling of caseloads; and,
- ultimately, more equitable allocation of resources.

While all three initiatives are still in the developmental stage, their potential to enhance the scope and reliability of research, planning, policy and purchasing strategies makes their evolution an important ‘space to watch’.

Mental Health Minimum Dataset

Healthcare organisations are currently in the midst of a period of fundamental change. Mental health services in particular have moved away from institutional care towards a complex inter-related community health, social and voluntary model of service delivery, involving a diverse range of care professionals. Against this background, where different aspects of patient care are delivered from very different sources, the need for swift access to comprehensive information, and communication between groups involved in the care process, is critical if a person is to receive relevant treatment.

A minimum dataset (MDS) is a set of items of information which all providers of any type of service (in this case, within the NHS) would need to collect to do their work. A clinical MDS thus represents the core information about individual patients that is necessary to support health and social care practitioners working in multidisciplinary teams in the delivery of care to their patients. A MDS for mental health would contain, for example, data derived from reviews under the care programme approach and information from the Health of the Nation Outcome Scales (HoNOS), as well as information about services received or health resources consumed. Introducing a standardised structure and set of definitions would ensure that this information could be aggregated and comparisons reliably made, thus informing the commissioning of mental health care. If a joint information system with the local authority were in operation using the MDS, better coordination of social services, housing, education and health care might be achieved, leading to better-informed prioritisation of needs.

Healthcare Resource Groups

Healthcare Resource Groups (HRGs) have been devised to assist in the process of the internal management of resources and in contracting in the NHS. They are defined as groupings of treatment episodes which are expected to consume similar amounts of health care resources and are constructed to be clinically meaningful. They have been developed in relation to all inpatient episodes of care and encompass all diagnoses. In psychiatry, particular emphasis has been placed on including in HRGs items from the mental health MDS. Like this, HRGs in psychiatry are also linked to HoNOS.

However, it has been acknowledged (Sanderson et al., 1995), that HRGs in psychiatry are less useful than in other clinical specialties because they are poor predictors of length of stay, indicating that this is not closely linked to diagnosis but depends on factors such as the patient's own capabilities, their support networks, and the availability of community-based rehabilitation or continuing care. HRGs in psychiatry also need to recognise the demands made on service provision in the rehabilitation and maintenance phases of illness as well as the acute phase. Furthermore, to be of use in joint commissioning, the existing clinical details must be supplemented by information which reflects the social factors which contribute to mental illness and its treatment. These and other criticisms of HRGs were made in a recent report for the NHS Executive (Huxley et al., 1996), which concluded that additional non-clinical attributes need to be identified and incorporated within HRGs. However, the development of HRGs is a 'data hungry' exercise, since their scope and reliability need to be tried out on data from as many healthcare interventions as possible.

Linking datasets

With the aim of testing the application of HRGs in mental health, the feasibility of linking eight PSSRU/CEMH research datasets has been explored. As the primary objective for each study was the evaluation of relative cost-effectiveness, each separate dataset contains variables reflecting the elements of 'care packages', their associated costs and the needs and outcomes of individuals. The costs of care packages for each project were estimated by PSSRU/CEMH researchers and so followed a single methodology. Information on clients' characteristics, however, was subject to different design criteria depending on the aim of the evaluation and the academic disciplines of collaborating researchers. One of the major tasks, therefore, was to identify variables that could be standardised across each project. These were selected to key into the MDS via HoNOS and to be consistent with other work on variables associated with severe mental illness. Specifically, this work includes the Matching Resources to Care (MARC) system which identifies twenty variables (see figure 1 for examples) on five dimensions, or axes, which have been found empirically to identify people with the characteristics of severe mental illness (Huxley et al., 1997). They are also consistent with numerous cost function analyses of mental health care conducted on the same PSSRU/CEMH datasets, showing which variables predict costs most reliably.

Exploratory work has found that the potential linked database could contain information pertaining to over 3,300 people, with the potential for adding more cases as studies are completed. It would comprise a minimum of 40 'key' variables, to include identifiers for each study or treatment group, broad diagnostic categories, psychological and social functioning variables, indicators of risk (aggression or self-harm), psychiatric history and demographic information.

Figure 1 Matching resources to care: definition of severe mental illness

A person will be said to have the characteristics of severe mental illness if they have five characteristics from a list of 20 (in four groups) including:

History

☐ The person has had two or more admissions to hospital in the last two years

☐ The person is known to have problems in keeping appointments

☐ The person has previously shown aggression towards family members or others

Illness

☐ The person has a psychotic illness

Current behaviour

☐ The person is at serious risk of attempting suicide

Current circumstances

☐ The person has serious problems in their personal care

☐ There is a serious risk that their present living situation will collapse and they will need to go into a form of institutional care

A further 40 variables measuring service use and cost will complete the dataset. The identification of the key variables has been driven as much by availability of the data as by existing information on the importance of each indicator. Nevertheless, a linked database has enormous potential to aid development of HRGs, by providing empirical data on which they can be tested and refined. It could also inform policy and practice through the robust analysis of associations between service utilisation, costs, needs and the outcomes generated by different intervention modes.

Conclusion

The testing and development of mental health MDS, HRGs and the linking of datasets are all ‘work in progress’, and important related projects are under way in other places. However, the approach indicated above, whereby colleagues build upon one another’s experience and expertise is evidence of a highly productive collaboration. The creation of datasets which will furnish mental health research with increasingly relevant and reliable information is a mammoth task in which the PSSRU and the CEMH are playing a small but significant part.

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Key points

☐ Researchers, managers and planners have mutual interest in consistent and reliable data.
☐ Work has been undertaken on the acceptability and feasibility of minimum datasets and healthcare resource groups — these are described.
☐ Existing datasets have been examined with a view to testing MDS and HRGs.
☐ These are examples of collaboration between the PSSRU and CEMH and between academia and government.

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Child and adolescent mental health problems and economic analyses

Martin Knapp

Just three days after Christmas last year, a 16-year old young man was found at his home in southern England with gunshot wounds to his stomach. In the back garden was his dead father, who had shot himself. Until the previous July, the young man had been resident in a special school where the aggression, temper tantrums and repetitive behaviour associated with his obsessional compulsive disorder had been contained. Since returning home his behavioural problems had become more pronounced. The headline in the *Guardian* newspaper was simple: The tragic father who could not cope.

Earlier in the year, during a research interview, the mother of another boy, this time with conduct disorder, had described despairingly the material damage done to the family home and the psychological stress on all members of the household as a result of his antisocial behaviour. The 10-year old's outpatient treatment was having some success, but there were still many problems at school (where he had been formally recognised to have special educational needs) and fights at home. Family holidays were an impossibility. The woman described movingly how the boy's two younger siblings detested him. She herself was being treated for depression.

Both cases illustrate some of the inter-personal tensions and family difficulties so often associated with a mental health problem in childhood or adolescence. The outcome in the first, tragic case is thankfully highly unusual, but every child and adolescent psychiatric department in the country would be able to produce many cases broadly similar to the second. Certainly there is no shortage of research evidence on the so-called family burden of mental ill-health (e.g. Göpfert, Webster and Seeman, 1995; Twigg, 1992).

Unmet needs

The prevalence of mental health problems among children and young people is the subject of nosological debate, but is probably higher than most members of the general public might expect. Rutter's classic Isle of Wight study in the 1960s found prevalence rates of 20 per cent with symptoms and 7 per cent with psychiatric disorder (Rutter, Tizard and Whitmore, 1970). More recently, Thompson et al. (1996) found behavioural problems in 13 per cent of children.

However, only a minority of children with behavioural problems see a specialist psychiatrist or psychologist. Others will be treated by primary care doctors, or their symptoms will simply go unrecognised. Cooper and Goodyer (1993) found that none of the sixty or so girls with major depression in their study in three Cambridgeshire secondary schools was in contact with specialist mental health services. Other local studies have reported similar unmet needs (e.g. Light and Bailey, 1993). The influential Health Advisory Service (HAS) report published in 1995 surprised few people with its conclusion that:

> mental health services for children and adolescents are, essentially, unplanned and historically determined. Their distribution is patchy and they are very variable in quality and composition. The work they do seems unrelated in strength or diversity to systematically considered local need (p.11).

The under-treatment of child and adolescent mental health problems is not a peculiarly British phenomenon. The longitudinal Ontario Child Health Study provides a comprehensive account of unmet needs, whilst a review of US evidence five years ago concluded:

> whereas one child in five has a [formerly diagnosed] DSM disorder, and perhaps one in 10 has significantly impaired functioning, only one in 20 receives any kind of mental health care, and only one or two in 100 are treated in a specialty mental health setting. Service availability is far lower than need (Costello et al., 1993, p.1109).

Service patterns

The 1995 HAS report is one of a number of recent publications to have drawn attention to the mismatch between the prevalence of morbidity and the availability of resources to meet it. The HAS also documented evidence which pointed to an urgent requirement for better coordination of services in the UK. In its March 1997 report, the all-party House of Commons Health Committee took up similar themes:

> The effective functioning of child and adolescent mental health services relies on close collaboration between a wide number of agencies and professionals. Much of the evidence we have received suggests that such cooperation does not always happen in practice (p.xliv).

Many research studies in this field have pointed to the comprehensive nature of children’s needs and the consequent (potential) utilisation of a range of services with a wide cost base (Kurtz, Thornes and Wolkind, 1995). For example, antisocial behaviour has implications that are not all directly or even mainly related to health care, but which impact upon schools, social services agencies, the criminal justice system and elsewhere (see Knapp, 1997, for a summary of the international evidence). The implications for families, as the two cases noted earlier so graphically illustrate, can be huge.

Conduct disorder, the most common mental health problem in childhood, is characterised by aggressive and antisocial behaviour (Kazdin, 1987). It can be responsible for scholastic failure, poor peer relations and delinquency in adolescence (Farrington and West, 1981). Maughan and Rutters’ (1998) informative review of evidence on continuities in antisocial behaviour between childhood and adulthood makes plain the potentially large long-term costs. For example, it is well-known that conduct disorder has a low rate of remittance compared to other childhood disorders and persists into adult life. Re-referrals are common. This disorder severely impairs individual development and social functioning, and a substantial proportion of children with conduct disorder go on to have psychiatric and other medical problems in adult life, and a higher risk of poor social functioning, unemployment, broken marriages, criminality and imprisonment (Maughan and Rutter, 1998).

Similarly, childhood depression is associated with increased chances of both depression and higher rates of health service utilisation in adulthood. Hyperactivity and obsessional disorders also tend to persist beyond adolescence. These are well-charted waters in child psychiatry and psychology, but there have been virtually no accompanying studies of the service consequences in adulthood, the direct and indirect cost ramifications in childhood or in later years, or of the cost-effectiveness of different treatment modes.

Research evidence and gaps

Failure to take these economic implications into account when considering how much and what type of mental health care to plan, purchase or provide could produce a worryingly partial understanding of the broad impact of different policies and practices.

Growing awareness in many quarters of the need for careful evaluation of the economic consequences, both short-term and long-term, of mental health problems in childhood and adolescence has produced increasing numbers of requests for economic studies (Knapp, 1997). In contrast to these expressed demands for economic data, there have been very few completed studies. Long-term follow-up studies which explore the social and personal consequences in adulthood of childhood mental health problems are particularly rare, and none to date appears to have included an economic dimension (Knapp, 1998).

Research principles

Current CEMH and PSSRU studies share a number of common principles, and each seeks to build on the accumulated experiences of previous research in the child mental health field and more widely.

1. Each of our studies aims to describe service utilisation patterns in a comprehensive manner, and to calculate their associated (direct) costs. This means including costs for all agencies. Some are also aiming to calculate indirect costs associated with unemployment, relationship breakdown and criminal activity.
2. A second common activity is to examine the associations between these service use patterns and costs, on the one hand, and current psychological well-being, social supports, family and household characteristics, health-related behaviours, stressors and social participation on the other. Within-sample variations in costs and outcomes can be very marked, and it is usually informative to explore the reasons for them.
3. It is also helpful to examine the links between childhood and adulthood service use and costs, and particularly to see if there are educational, behavioural and emotional characteristics of sample members as children (and of their families at that time, including their own health and educational needs) which help to predict service use and costs in adulthood. Covariate influences will need to be included in the analyses, and we try to ensure that the necessary data are collected and examined.
4. Costs measure, inter alia, the skilled health and other resources which are provided to children and adults, and it would be reasonable to expect that they would be linked to the outcomes of the interventions, albeit in complex ways. Where data allow, another principle running through our studies is to look at the cost-outcome links, not just in standard cost-benefit or cost-effectiveness analyses but also through multivariate statistical analyses.

Most of our current and imminent studies reflect on social or public policies as they relate not only to children with mental health problems, but also to health and social care more generally. One or two of them can look at the adulthood correlates of childhood poverty, educational disadvantage, divorce, lone parenthood, and being in local authority care. Over the next year, the results from these studies will be reported and discussed. Other studies, such as the long-term follow-up of Professor Rutter's original Isle of Wight sample will be completed a little later. Together, these studies should be able to cast a little light on an area which hitherto has remained unilluminated (for some details, see the *work in progress* section on page 64).

Conclusion

The enormous pressures on health, education and social services resources make it wildly unrealistic to imagine that society could spend its way out of the present (and enduring) situation of under-resourcing and poor coordination. Moreover, the new UK government elected in May 1997 has committed itself to the kind of fiscal environment which rules out significant increases in public spending, whilst the competition for funds within the public sector is as fierce as ever. These factors emphasise the need for economic and social as well as clinical evaluations of services for children and adolescents with mental health problems. Unfortunately, policy makers or commissioners of care trying to make allocation decisions about services for children with mental health problems currently have relatively little evidence of this kind to inform their decisions.

Current CEMH and PSSRU studies address only a small number of the issues facing policy-makers and professionals in relation to child and adolescent mental health problems and their treatment. However, by demonstrating the feasibility of such studies and, of course, the value of the information they can generate, we hope that further research would be encouraged.

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Key points

- Some estimates of the prevalence of psychiatric problems among children and adolescents approach 20 per cent.
- Problems in childhood and adolescence have potentially large economic consequences throughout the lifecycle.
- Relatively few of these children or adolescents receive (specialist) treatment.
- Services from different agencies are unco-ordinated and prone to perverse incentives.
- To date few economic evaluations have been conducted.
- Current PSSRU and CEMH research will report in 1998 and 1999.

Quality of life assessment in social care settings

Sherrill Stone, Peter Huxley and Stefan Priebe

Introduction

The first thing to say is that, compared to where we were twenty or more years ago, we have come a long way, or gone round in a large circle if you prefer. When a multidisciplinary team in a psychiatric hospital conducted an assessment of a new patient in the UK in the late 1950s and 1960s, there was a full social assessment conducted by a psychiatric social worker. A community-based social worker, called a mental welfare officer, conducted follow-up care in the community and used what we would now recognise as clinical case management. We did not consider the concept of quality of life in relation to this work, even though the areas in which the psychiatric social worker and the mental welfare officer worked concerned the same life domains of the patient and family — finances, housing, work, family relations, social and leisure activities — which form the basis of contemporary quality of life assessment. After the 1970s the situation changed, so that these social care providers were removed from the hospitals and the multidisciplinary teams and we lost the rounded approach to assessment and the after-care capacity we previously enjoyed.

Recent years have witnessed an exponential growth in quality of life assessment in healthcare generally (Bowling, 1991). Despite conceptual criticisms of quality of life measurement in mental health (Holloway, 1996), the policy agenda continues to encourage the study of quality of life improvements as an outcome measure for mental health services. As the locus shifts from institutional to community care, clinical assessments need to be augmented with social information, since social factors are involved in the genesis and amelioration of mental health problems, and because symptoms and diagnoses alone are narrow measures of outcome and poor predictors of resource consumption. Furthermore quality of life assessment puts service-users' views at the centre of the care process. This paper describes quality of life assessment in social care settings and provides comparative findings from two large studies in the UK and Germany.

Issues in the development of the quality of life instruments

The Lancashire Quality of Life Profile (LQOLP) (Oliver et al., 1996) was developed for use in operational settings, and was made up of several components. We wanted a measure of mental health but could not often acquire this in the social services context, and so opted to include in the LQOLP the Affect Balance Scale, and the Self-esteem Scale of Rosenberg (Rosenberg, 1965). We also incorporated Cantril's ladder as a measure of overall well-being (Cantril, 1965), and we reduced Lehman's questionnaire (Lehman, 1983) but retained the original Andrews and Withey seven point rating scale (Andrews and Withey, 1976). The mean time taken at first application is just over half an hour, and the second application takes about 20 minutes because demographic data is largely known. Advances in measurement methodology are being made. The performance of the profile on various psychometric tests has been reported but more work is needed. Internal consistency reliability shows reasonable results (Oliver et al., 1996; Priebe and Oliver, 1998).

Some parts of the LQOLP were designed psychometrically, such as the affect-balance scale and the self-esteem scale; others were not. We introduced the measure as a 'profile' because we felt that it was inappropriate to aggregate scores from very different life domains, such as finance and social relationships, for instance. Our reservations about the aggregation of items on the LQOLP particularly applied to 'objective' rather than 'subjective' ratings.

In recent study of treatment for opiate-abusers in primary care (Davies and Huxley, 1997) we found that the mean of the scores across the life domains in the LQOLP (based on subjective ratings on a seven point scale from 'could not be better' [7] to 'could not be worse' [1]) behaved in a similar manner to global subjective well-being measures such as Cantril's ladder. However we remain cautious about single scores based on the mean score which includes objective or material circumstances. An operationally acceptable simple measure based on a single score is appealing but should not divert us entirely from the profile approach because different interventions may affect scores in individual domains differently and resulting data can be more informative for staff or commissioners.

The LQOLP has also been criticised by Dutch, French and French-Canadian collaborators and colleagues for failing to include measures that reflect the meaning of life rather than its quality (see van Nieuwenhuizen, 1997). There are two aspects to this, first the need for a domain that is rather more than just spirituality, and second a rating of the significance of individual domains in the life of the individual. A further challenge raised by Italian colleagues is the current exclusion of questions about subjective well-being regarding sexual relations.

Some authors argue that quality of life measures are insensitive to change over time. Barry and Crosby (1993) make this suggestion. However, they studied patients moving within a hospital, and it unsurprising that subjects' only change was on their ratings of living conditions. Similarly, Max Marshall (1997) found quality of life scores constant over time in a case management study; however clinical symptoms were also unchanged, suggesting that the interventions were ineffectual and that the quality of life instrument was not necessarily insensitive. Other studies such as the study of treatment for opiate users referred to earlier (Davies and Huxley, 1997) show that global ratings of quality of life do change over time making them amenable for use in service evaluations.

Who can use the LQOLP and when?

By following straightforward instructions almost anyone can become accustomed to using the assessment after a few attempts. It is quite useful to do this as a group exercise to begin with, or to assess one's own relatives! If the group is led by an experienced user then most problems that arise can quickly be addressed. Several of our studies have taught lay people and clients to use the assessment. Most responses are closed, or are subjective ratings by the user themselves and therefore there is little possibility of error.

Our experience of assessments conducted as part of routine practice suggests that the assessment should be undertaken by someone who does not know the respondent. This avoids the risk that the respondent will give higher ratings to someone that they know. For practical purposes, in a social services setting, if an outsider is unavailable then teams could swap and assess one another's cases. It has been used in longitudinal studies and could be used in this way in practice as a regularly repeated measure, as it is in the community services in Verona.

It is possible for individual workers to assess their own clients, and one could argue that if the same person conducts several assessments over time, the element of bias should be more constant. This raises the point that if there is a bias in client reporting quality of life to a professional, then presumably there must be some bias in reporting clinical symptoms and service satisfaction as well. We are in contact with social workers who have used the profile to assess clients in this way, and so far the utility of the profile, its results, and the feedback to clients are all reported to be a positive experience. This is consistent with our own impression from research interviews where the level of agreement to undertake the assessment again is, on average, about 90-95 per cent. Indeed, it has been reported that this assessment has provided clients of UK services with their first opportunity to discuss the areas of their lives of most significance to themselves.

By aggregating data from treatment programmes, residential settings, or different teams, the quality of life of those who access the services can be portrayed, and changes over time investigated. One can compare, cross-sectionally, the quality of life of clients coming into similar services in different agencies. The example below makes cross-cultural comparisons between Germany and the UK but this could just as easily be two London boroughs, two community teams, or two health or social services clients.

An illustration of comparative quality of life assessment

In this section we compare the quality of life of people with severe mental illness, from a study in the UK and a study in Germany (Kaiser et al., 1997). 66 per cent of the UK subjects (n=1279) and all of the German subjects (n=386) were suffering from schizophrenia.

Demographic comparisons of the two groups found that the Berlin patients were younger (21 per cent under 30 compared to 15 per cent) and more likely to be employed (34 per cent compared to 17 per cent). The Berlin patients were a more recently acutely ill group and therefore have a shorter history of mental illness compared with their English counterparts. They were no more likely to have been married, and had very similar living situations.

In most domains, the mean subjective well-being score for the UK subjects was lower, indicating lower well-being. When comparing those in work, there were no

Table 1 Comparison of subjective well-being scores by domain

Domain				UK n=1279		Germany n=386	
		t	p	n	mean	n	mean
Work[a]	— all sample	–4.43	0.00	969	4.07	311	4.52
	— unemployed	–4.68	0.00	750	3.86	195	4.38
	— employed	0.96	0.34	188	4.86	125	4.72
Leisure		–2.30	0.02	1194	4.75	374	4.90
Finance		–6.71	0.00	1160	3.78	373	4.40
Living situation		–1.40	0.16	1181	4.71	378	4.81
Safety		–0.42	0.68	1172	4.90	372	4.93
Family		–3.95	0.00	1137	4.65	308	5.00
Social		–4.20	0.00	1162	4.63	376	4.93
Health		–2.83	0.01	1165	4.50	378	4.70
Mental health		–3.65	0.00	1135	4.16	373	4.51
Global well-being[b]		–2.38	0.00	1196	4.27	370	4.48
Subjective well-being[c]		–5.42	0.00	1204	41.44	379	44.40

Notes:
a. Satisfaction with employment situation and finances.
b. Mean of domain well-being scores.
c. Sum of domain well being scores.

differences in the subjective well-being of the UK and German patients. There were also no differences between the groups in feeling of subjective well-being for living situation or the closely related safety domain. The Berlin patients had significantly higher ratings of subjective well-being in terms of the family, health, social and leisure domains. These differences were reflected in a significantly higher total subjective well-being score based on the sum of the scores across the domains. One possible explanation is that the Berlin patients were in more active treatment than the UK group and consequently were in receipt of more appropriate or effective social care. Another possibility is that greater involvement in work produces improvements in other life domains, a phenomenon that has been observed elsewhere (Huxley and Warner, in press, and Huxley et al., in press). A further possibility is that the younger schizophrenia sufferers in the Berlin sample have more intact social and family lives, and that many of the UK sample have suffered greater attrition in these areas over the years.

The subjective well-being of the German subjects who were depressed showed less variation than the subjective well-being of depressed patients from the UK. Similar results were found in separate analysis of people in a study of case management using a standardised clinical assessment administered by trained clinicians. The data from the case management study has additional variables on personality, insight, side-effects of treatment and intelligence that may also help to explain more of the large variance in ratings of subjective well-being by UK subjects (Huxley and Stone, in preparation).

The presence of depression reduces ratings of subjective well-being across all life domains, but still permits the individual to distinguish between domains, to the same extent as non-depressed groups. Rating of employment and religion were not different in depressed and non-depressed groups for instance (subjective well-being in respect of religion was not collected for German subjects, so this finding relates only to the UK subjects). One intriguing hypothesis is that being in work or having strong convictions protects one against the impact of depressive mood as well as contributing to overall well-being.

Conclusion

Although debate about the use of quality of life assessment still rages in health and social care circles, we hope that the arguments and illustrations used in this paper will encourage others to consider using it.

Note: The original version of the LQOLP and instruction pack with papers about its use is available from Manchester University. It was published in Oliver, J.P.J., et al. (1996) *Quality of Life and Mental Health Services*, Routledge, London. A new much shorter instrument for use in operational settings (the Manchester Short Quality of Life Assessment (MANSA) by Priebe, Huxley, Stone and Knight) will shortly be available from the University (School of Psychiatry and Behavioural Sciences, Mathematics Building, Oxford Road, Manchester, M13 9PL. Telephone 0161 275 5221. Fax 0161 275 3924).

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Key points

☐ The policy agenda continues to encourage the study of quality of life improvements as an outcome measure for mental health services.
☐ The LQOLP was developed for use in operational settings and staff can become accustomed to using the assessment after just a few attempts.
☐ So far the utility of the profile, its results and the feedback to clients are all reported to be positive by social services staff.
☐ Comparisons of the quality of life of people with severe mental health problems in the UK and Germany found higher subjective well-being scores in the German sample.
☐ These findings may reflect the shorter history of mental illness and higher levels of employment in the German sample.
☐ Quality of life assessment is still widely debated, but it is hoped this article will encourage others to consider its merits.

Costs and outcomes of psychotherapeutic approaches to treatment of mental disorders

Daniel Chisholm

Research context

The advent of psychotropic drugs in the 1950's revolutionised the management of mental disorders, since when disorders such as anxiety, depression and schizophrenia have been treated predominantly by pharmaco-therapy. The therapeutic effect of these drugs in alleviating symptoms, however, is variable and usually accompanied by unwanted side-effects. It has been suggested, for example, that lithium carbonate is ineffective for at least 20 per cent to 40 per cent of patients with bipolar affective disorders, either due to an inadequate response or side effects (Priern and Potter, 1990), while extrapyramidal symptoms may occur in up to 40 per cent of those treated with anti-psychotics.

Variable rates of efficacy, delayed onset of action and problems associated with medication compliance (and ensuing relapse) among these psychotropic agents not only have obvious clinical implications, but also have a significant negative impact on the costs of care and treatment (Johnson and MacFarland, 1996). One estimate from the US suggests that hospital costs of readmission are as high as care for first episode cases, of which 63 per cent is due to lack of medication response and 37 per cent due to non-compliance (Weiden and Olfson, 1995). Psychotherapeutic responses to psychiatric disorders, on the other hand, are likely to improve compliance, and may be associated with a reduction in total costs, arising from reductions in inpatient treatment and decreases in work impairment (Gabbard et al., 1997).

Accordingly, trials are under way which seek to assess the efficacy associated with the addition of psychotherapy to usual treatment (usually pharmacotherapy alone). Three such trials at the Institute of Psychiatry (see table 1) also contain an economic component. The combination of costs and outcomes data enables examination of the extent to which psychotherapeutic approaches offer a cost-effective use of mental health care resources.

Table 1 Clinical trial characteristics

Title of trial[a] and principal investigators	Design	Costed sample	Key outcome measure(s)
Couple therapy in the treatment of depression (J. Leff, A. Asen, D. Dayson)	RCT[b] with 2 arms: (1) anti-depressants (2) couple therapy	 14 24	Beck Depression Inventory
The London-East Anglia trial of cognitive behaviour therapy for psychosis (E. Kuipers, P. Garety, P. Bebbington, G. Dunn)	RCT[b] with 2 arms: (1) 'treatment as usual' (2) 'treatment as usual' + CBT[c]	 28 26	Brief Psychiatric Rating Scale Personal Questionnaire
Cognitive therapy for bipolar illness — a pilot study of relapse prevention (D. Lam, J. Bright, S. Jones, P. Hayward, P. Sham)	RCT[b] with 2 arms: (1) 'treatment as usual' (2) 'treatment as usual' + CBT[c]	 11 12	Number of depression and mania episodes MRC Social Performance Schedule

Notes:
a. See references section for more details.
b. Randomised controlled trial.
c. Cognitive behavioural therapy.

Costing procedure

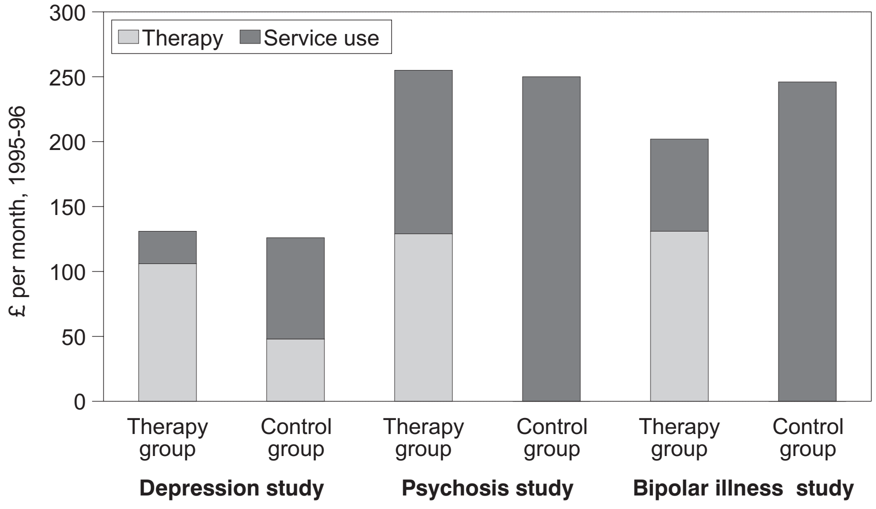
For each of these studies, costs of therapy were calculated, based on the number (and average duration) of sessions and the unit cost per hour of direct research therapist contact time. Service utilisation data were collected using variants of the Client Service Receipt Inventory (CSRI: Beecham and Knapp, 1992), which covered key hospital services (psychiatric and medical inpatient days and out/daypatient attendances) and community care contacts (GP, CPN, social worker, counsellor, health visitor). Unit costs — drawn from national estimates (Netten and Dennett, 1996) and calculated to represent long-run marginal opportunity costs — were attached to individuals' particular use of services. Subsequent aggregation enabled estimates of hospital, community and combined service costs to be derived. Informal caregiver support by family members or others and indirect costs (lost employment, reductions in well-being) were not costed in these studies.

Cost results

Although beset with sample size problems and the limitations implicit in making comparisons between very different client groups, there appears to be a discernible pattern arising from these three trials (figure 1):

- There is an additional cost associated with the provision of cognitive behavioural and/or couple therapy, although this cost is not in fact very large (approximately £100 — £130 per month);
- Use of hospital and community services by the intervention group over the treatment phase is 50-70 per cent lower than the control/comparison group. These differences are not statistically significantly (t-test of log-transformed data: p0.05), largely due to the small samples involved and the highly positively skewed distribution of service use;
- The combined cost of therapy and service use over the treatment period is very similar for both intervention and control groups in all three trials.

Figure 1 The costs of therapy and service utilisation



Notes: a. Psychosis and bipolar illness studies: drug therapy costs not included (similar for each trial arm).
b. Psychosis study: psychiatric inpatient costs only.

Cost and outcome relationships

For a new intervention to be cost-effective, it must either generate benefits that are proportionally greater than any additional costs or deliver at least equivalent benefits at reduced cost. Over the course of these three studies, there was a (statistically) significant improvement in the psychotherapy group's scores in the respective primary outcome measure (Kuipers et al., 1997, 1998; Lam et al., 1998; Leff et al., 1998), while the combined cost of therapy and service use was found to be neutral across the trial arms. (Service costs over the follow-up period are not reported here, but were lower in the intervention groups for all three trials.) These results therefore suggest that psychotherapeutic approaches in the treatment of mental disorder *may* be cost-effective. It is not possible to be more conclusive than this, owing to the small-scale nature of these studies and the marked skewing of service use data, both of which make statistical testing and inference hazardous. Larger studies that are appropriately powered to detect significant change in key economic parameters are required to demonstrate unequivocally the genuine cost-effectiveness of these interventions.

Key points

- ☐ Compliance problems with psycho-pharmacotherapy have obvious clinical implications and significantly impact on treatment costs.
- ☐ Three randomised controlled trials are currently investigating the efficacy and cost-effectiveness of adding psychotherapy to usual treatment.
- ☐ Early indications suggest the addition of psychotherapy may be cost-effective.
- ☐ Results based on larger samples are needed.

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Informal care and depression

Shane Kavanagh and Andrew Fenyo

Introduction

Depression is the most common mental disorder: a national survey in Britain found that 21 adults per 1,000 were suffering from a depressive episode and a further 73 per 1,000 had mixed anxiety and depressive disorder (Meltzer et al., 1995). Despite the popular misconception that depression is a minor condition, for some people it is associated with limitations in functioning and well-being that are comparable, if not worse than, those associated with chronic physical conditions such as arthritis or diabetes. Furthermore the prognosis for people with depression is not good. Limitations in functioning and well-being for depressed patients at a two year follow up were similar to, if not worse than those for chronic physical illnesses (Wells et al., 1989; Hays et al., 1995).

The writer Andrew Solomon provides a narrative of the disabling nature of his depression and the informal care he received from his father (Solomon, 1998).

> I can remember lying frozen in bed crying because I was too frightened to take a shower…Hoping that someone else could open the bathroom door… Evenings I was able to rise… I could sit up for dinner with my father… When I was defeated by the difficulty of getting a piece of lamb chop onto my fork he would do it for me. He would say he remembered feeding me when I was a child, and would make me promise, jesting, to cut up his lamb chops when he was old and toothless.

To place this graphic account of one family's experience in context, we employ secondary analyses of data on a group of patients originally included in a study of anti-depressants in primary care (Forder, Kavanagh and Fenyo, 1996).

Methods

The sample consisted of two groups of patients being treated for depression by general practitioners. The experimental group (of patients who started medication with a selective serotonin reuptake inhibitor) included patients with five or more symptoms from a checklist of DSM III-R (American Psychiatric Association, 1987) major depressive symptoms or illness rated by their general practitioner as being comparable to major depressive disorder, a clinical global impression score indicating at least mild severity and a duration of illness in excess of at two weeks. A comparator group (of patients who started medication with tricyclic anti-depressants) was matched to the experimental group with respect to: age, sex, previous episodes of depression, duration of depressive episode and severity of depression. For the purposes of this paper both groups are analysed together. Demographic details are provided in table 1.

The study was retrospective. Information was obtained from patient notes and interviews with both GPs and patients relating to the one year period following the commencement of medication.

Results

A significant minority (15 per cent) of people received help with some household activities. The mean number of hours of informal care received was 8.5 hours per week but this varied and some people received almost constant attention. Unsurprisingly, more severe depression was associated with a higher probability

Table 1 Receipt of informal care by people with depression

Characteristic		Numbers not receiving informal care	Numbers receiving informal care	Median weekly hours of informal care for those receiving it
All people		320	57	5.0
Age group	20-34	64	10	4.0
	35-49	133	15	10.0
	50-64	90	20	5.0
	65 and over	33	12	7.4
			(p=0.037)	
Gender	Male	89	9	6.0
	Female	232	48	5.0
			(p=0.058)	
Marital status	Married/living with partner	230	37	5.0
	Single	24	4	7.0
	Widowed/divorced/separated	67	16	5.0
			(p>0.10)	
Household type	Person lives alone	56	8	4.0
	Person lives with others	265	49	5.0
			(p>0.10)	
Severity of depression	Mild	52	1	0.0
	Moderate	251	49	5.0
	Severe	18	7 (p=0.004)	6.0
Co-morbidity				
Respiratory conditions	present	25	9	4.4
	absent	296	48	8.0
			(p=0.052)	
Gastro-intestinal conditions	present	66	15	4.8
	absent	255	42	6.0
			(p=0.10)	
Joint disease	present	89	25	4.5
	absent	232	32	6.0
			(p=0.014)	
Employment	Not employed	155	39	5.0
	Employed part-time	47	5	5.5
	Employed full-time	119	13	4.2
			(p=0.020)	

Note: The probabilities refer to chi-square tests on the association between receipt of informal care and the relevant characteristic.

of receiving informal care (table 1). Similarly, people with co-morbid physical conditions such as arthritis or other joint diseases were also more likely to receive informal care.

Receipt of informal care showed an interesting association with age. Depressed people in the youngest and older age groups were significantly more likely to receive informal care compared with people in middle age, although the latter group received the highest median hours of care. Women were also more likely to receive informal care but rather surprisingly, marital status or the living arrangements of the person showed no significant associations with receipt of informal care.

There were no significant associations between the number of informal care hours received and either morbidity or socio-demographic factors.

Conclusion

These findings highlight the significant proportion of people with depression who receive help with household activities from relatives and friends. This is just one component of the care and support provided by carers. For example, two people in this study had carers who gave up their employment in order to provide more care for their depressed relative.

The age and sex profile of this study sample was comparable to the Third Morbidity Study in General Practice (RCGP/OPCS/DHSS, 1986) and thus reasonably representative of patients *diagnosed* and *treated* for depression in primary care in England. Earlier studies have provided detailed insights into the burden on family members resulting from depression for people treated by specialist services (Fadden et al., 1987). In contrast this paper provides much more basic information for the much larger group treated by general practitioners.

To date, informal care has rarely been included in either side of the cost-effectiveness calculus. Carer inputs are rarely included as indirect costs due to debate about the appropriate valuation method and most clinical evaluations collect outcome information solely for the index patient.

Key points

- ☐ Depression can limit activities of daily living to a degree comparable with chronic physical conditions.
- ☐ Family members provide valuable support.
- ☐ 15 per cent of people with depression received help from family and friends with household activities.
- ☐ These people, on average, received 8.5 hours informal help per week.
- ☐ People in younger and older age-groups, with severe depression, co-morbidity and not in employment were more likely to receive informal care.

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Decision tree modelling in schizophrenia: methodological issues

Stephen Almond

Introduction

Schizophrenia has a profound impact on the quality of life of sufferers and imposes a heavy burden on families, health services and the wider society. For example, the estimated total direct and indirect health care cost for treating patients with schizophrenia and other non-organic psychoses in England for 1992/3 was £2.6 billion (Knapp, 1997).

The new atypical anti-psychotic drugs could potentially reduce the costs of schizophrenia care. Arguments centre on whether the expected clinical benefits of the atypical anti-psychotics over standard neuroleptic drugs are sufficient to reduce the use of mental health services and thus offset the higher prescription costs (Addington et al. 1993; Davies and Drummond 1993; Meltzer et al. 1993; Almond and O'Donnell 1998). To date, most studies of the new anti-psychotics have employed decision-analytic models to determine cost-effectiveness. This paper focuses on the methodological issues involved in developing these models and the complexities of applying them to schizophrenia care.

Model development

Decision tree models simulate clinical management and pathways of care. A comparison of treatments involves identifying possible events associated with care and their relative probabilities of occurring under each treatment. For a cost-effectiveness analysis, the models estimate the clinical effectiveness of treatments alongside costs. Various effectiveness (outcome) measures can be employed: ranging from simple relapse rates during treatment, to instruments such as the Brief Psychiatric Rating Scale (BPRS), or even Quality Adjusted Life Years (Chisholm et al., 1997). A drug treatment that is both less costly and more effective than its comparator is obviously *dominant.* However, results are not always so clear cut, and a drug may be more effective but at a greater cost. The cost-effectiveness decision then relies on which treatment produces the most favourable ratio of cost to units of effect (relapses avoided etc.).

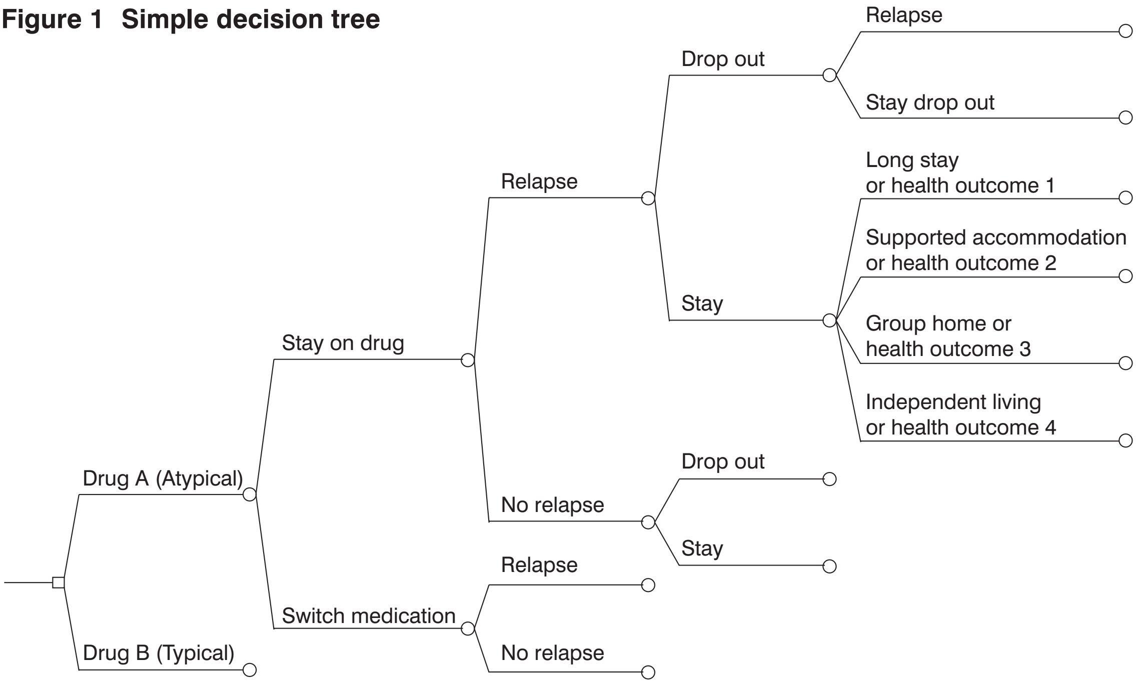
Basic decision trees are most easily applied to evaluations of treatments for conditions that are either cured or not cured by a single course of treatment. However schizophrenia is a long-term illness involving clinical events that can occur repeatedly. In such circumstances, the decision analysis can use a Markov process that essentially models the patient's progression through a number of treatment cycles. The number and duration of cycles in the model reflect recurring clinical events such as relapse, 'dropping out' of treatment and different health outcomes.

Figure 1 presents a simple decision tree representing a single cycle in a Markov model. When evaluating a new drug the most appropriate comparator is the drug or treatment most likely to be replaced. Therefore the decision tree shows a direct comparison between atypical (drug A) and typical (drug B) drug treatment.

The model includes a variety of events whose probability of occurrence influences the costs and effectiveness of care.

Continuation with treatment or switching of drugs: People may switch between drug treatments. This is usually associated with either the efficacy of

Figure 1 Simple decision tree



treatment or the side effects of treatment (not shown in this simple model). For new drugs where fewer data on the probability of switching treatment are available, a range of assumptions can be employed in the model.

Relapse: The return of active symptoms (or the significant worsening of symptoms that had been ameliorated) is perhaps the key parameter for modelling schizophrenia care. Relapse may necessitate much more intensive treatment, perhaps even hospitalisation and thus higher costs. Relapse rates are obviously influenced by compliance rates for treatment, which in turn are influenced by side effects (not shown in this simple model).

Drop out: Atypical drug therapy may be associated with lower rates for people stopping or ‘dropping out’ of treatment, possibly from improved clinical efficacy, higher compliance or lower relapse rates. In the simple model, people who have ‘dropped out’ of treatment can return to the model by relapsing or can remain ‘dropped out’ and incur no further costs.

For patients who remain on treatment, the endpoints for each treatment cycle can be defined by the patient’s health state (here divided into four categories) or by their place of treatment. When the endpoints are defined in terms of health states, the calculation of costs requires the estimation of a typical package of services (and therefore costs) for people with schizophrenia in that health state. This also involves estimating the proportion of people in different types of treatment facilities for each health state. If the endpoints are defined in terms of place of treatment such as a hospital or group home then calculation of costs is more straightforward and is equal to the costs of placement in those facilities (including services provided external to the facilities).

The costs for each cycle (including the costs for drug treatment) are then summed together to give the expected costs for each treatment.

Model data

The preceding section demonstrates the data-hungry nature of even simple models. First, information is required about the probabilities of clinical events occurring under different treatments, and then the service utilisation associated with the different events and the resulting health states must be estimated. Data comes from three main sources: randomised trials (or meta-analyses), other published literature on treatment pathways, etc. and ‘expert’ opinion. Randomised trials provide key clinical data but the atypical settings and service utilisation profiles associated with the trial often limit the generalisability. Publication and inclusion biases may also be issues. Expert opinion is usually the last resort when clinical or published data are unavailable, but may present ideal rather than actual outcomes. Hence, although the decision analytic approach is appealing, when it uses information from several sources, it is prone to bias and uncertainty (see Sheldon, 1996 for a full discussion).

Uncertainty and sensitivity analysis: hurdles to climb There are a number of issues that create difficulties for modelling schizophrenia care. By identifying these areas of uncertainty, the results can be subjected to sensitivity analysis where the probability of separate clinical events occurring or the service utilisation (costs) associated with them is varied either sequentially or in isolation. Even in the case of little or no uncertainty, sensitivity analysis can be used to derive the *source* of costs within the model.

- ☐ **Depot patients:** New atypical drugs are currently available only in oral form, and models have thus far compared treatments based on oral medication. The exclusion of patients who receive depot injections reduces the applicability of the models to a subset of people with schizophrenia (estimates of the proportion of UK patients receiving depot injections vary between 31 per cent (Crammer and Eccleston,1989) and 80-90 per cent (Johnson,1984)).
- ☐ **Switching therapy:** Switching between drug treatments can mean that the total costs attached to each drug treatment are partly derived from clinical events associated with other drug treatments. By employing ‘the intention to treat principle’, the relevant cost comparison for evaluating alternative drugs is between their expected costs *at the time of initial prescription.*
- ☐ **Relapse rates:** Although definitions of relapse vary (Lader,1995), most models use hospitalisation to define relapse because it is associated with readily available cost data. In the UK, it is unlikely that all patients are hospitalised following relapse and a rate of 67 per cent has been suggested (Hale and Wood,1996). If the probability of relapse is set conditional on compliance rates, further problems may be encountered with actually setting parameter values.
- ☐ **Drop out rates:** Decision trees are often designed just to calculate direct treatment costs. In schizophrenia care there are other indirect costs associated with the illness such as crime and unemployment. Excluding indirect costs and also costs for patients who drop out clearly disadvantages the drug treatment with the lower drop out rate. This is because more patients stay on this therapy and ultimately use more health care resources.
- ☐ **Resource utilisation:** The endpoints of this simple model reflect the distribution of patients across residential care settings. Although this is an appealing way of setting up costs, it is difficult actually to identify the probabilities for being in each treatment setting, especially if they are set conditional on relapse status. In the absence of prospective longitudinal data, the only information likely to be available is cross sectional data on the current distribution of patients, independent of their health states (see Kavanagh, Opit and Knapp, 1995).

Conclusion

Clinical pathways can be constructed (often with advice from clinicians) to reflect normal practice. Any uncertainties in the model, which are usually associated with the availability of data, can then be tested using sensitivity analysis. The most difficult problem associated with this type of modelling is the accurate attachment of costs to clinical events — this is particularly true for relapse and different health states, and accommodation status. However decision analysis, at the very least, is useful for estimating costs and outcomes when data from prospective economic studies are not yet available, and can also identify key areas for data collection in prospective studies.

Key points

- ☐ Schizophrenia imposes a large cost burden on sufferers, their families, health services and the wider society.
- ☐ New atypical anti-psychotic drugs are potentially cost-effective.
- ☐ Most research to date has employed decision analytic models.
- ☐ Key events in these models include switching between drugs, dropping out of treatment and relapse.
- ☐ The attachment of service utilisation packages to these events requires many assumptions that impact significantly on the results of the model and therefore require sensitivity analysis.

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Work in progress at CEMH and PSSRU

We summarise below some current CEMH / PSSRU research in the field of mental health not covered elsewhere in this *Review.*

The primary-secondary care interface

CEMH is currently involved in a number of studies that are exploring the cost-effectiveness of various service developments in primary care:

> A cross-sectional study of the integration of community mental health services in primary care, involving the comparison of an integrated service in Peckham with a service organised on traditional lines in Brixton (with Professor Sir David Goldberg and colleagues, Institute of Psychiatry).
>
> A randomised controlled trial of service-level agreements between general practitioners and secondary services for the care of the long-term mentally ill (with Dr Byng and colleagues, United Medical and Dental Schools).
>
> A randomised controlled trial of shared care between general practice and secondary services for patients with severe mental illness, involving the intervention of a mental health worker (with Dr Hemingway and colleagues, Kensington, Chelsea and Westminster Health Authority).

Contact: Daniel Chisholm, CEMH

Using the contingent valuation method to assess public preferences in anti-depressant prescribing policy

CEMH is currently exploring the validity of the contingent valuation method as a means of determining public preferences and willingness-to-pay valuations for the benefits of different aspects of anti-depressant prescribing policy. The study is concerned with three issues: preferences and valuations for selective serotonin reuptake inhibitors (SSRIs) versus tri-cyclic anti-depressants (TCAs) with specific reference to their relative side-effect profiles; preferences and valuations for long-term maintenance using anti-depressants to reduce the risk of recurrence of acute episodes of depression; and the value of reduced fatality risks linked to the prescribing of SSRIs compared to TCAs.

Funding: Pfizer Ltd ***Results:*** available late in 1998
Contact: Andrew Healey at CEMH

Secondary analyses of the Psychiatric Morbidity Surveys

The psychiatric morbidity surveys provide estimates of the prevalence of psychiatric conditions and the balance between services. Drawing on our previous work, we are employing these data to examine service use and care costs. Our primary objective is to paint a broad-brush picture of the costs of adult mental health care in Britain and address key policy concerns for commissioners and providers. For example, how many people are contact with services, what combinations of services do people use, and what is the association between disability, service utilisation and costs? We are currently reviewing relevant literature, collating unit costs data, and organising small-scale surveys and secondary analysis of other relevant data sets.

Funding: Department of Health ***Results:*** available late 1998 and 1999
Contact: Shane Kavanagh, PSSRU Kent and LSE

Children and adolescents

Some CEMH studies are focused on the service use patterns of children and adolescents in contact with specialist health care agencies, such as the costs of treating pre-school children with oppositional defiance disorder reported in last year's Mental Health Research Review by Jennifer Beecham and Catherine Topan.

Another study which concentrates on the childhood years is the CEMH component of a wider evaluation led by Professor Tony Cox (UMDS) and Dr Christine Puckering (Glasgow) which is examining the cost-effectiveness of a good parenting programme. The intervention is being offered in London and Scotland to families with young children on the Child Protection Register or where there are serious concerns about parenting skills.

Funding: Department of Health ***Results:*** available late 1998-1999

Some other CEMH research activities are linked to follow-up studies of adults who were either treated for mental health problems in childhood or adolescence or who took part in research studies in their earlier years. Three such studies are now underway.

Examination of the costs in adulthood (in terms of service utilisation, lost employment and so on) for two groups of former Bethlem-Maudsley child patients, half of whom were treated for depression and half for comorbid depression and conduct disorder.

Funding: Department of Health ***Results:*** available summer 1998

Adulthood (mid to late 20s) follow-up of 200 10-year olds included in the 1970 Camberwell Cohort Study. Half of this group exhibited anti-social behaviour as children and half did not. The study is basing its cost measures on data collected some years ago and not designed for the purpose, whereas the study of former child patients is able to design the data collection instruments.

Funding: Mental Health Foundation ***Results:*** available autumn 1998

Researchers at the Institute of Psychiatry, led by Barbara Maughan, Andrew Pickles and Michael Rutter, are conducting a long-term, prospective study of psychopathology, reaching from childhood to midlife. The study builds on the first systematic epidemiological studies in child psychiatry conducted in the Isle of Wight in the 1960s. CEMH is collaborating in the investigation of a number of economic questions, including the links between psychopathology in childhood and economic consequences in adulthood.

Funding: Medical Research Council ***Results:*** available mid 2000
Contact: Martin Knapp at CEMH

Provision for young adults with hemiplegic cerebral palsy

Parents and paediatric specialists generally agree that: health services are inadequate for individuals with hemiplegic cerebral palsy; graduation from children's to adult services is poorly planned; and although the majority of young adults with long-standing hemiplegia are largely independent, many continue to have physical and mental health needs that are unmet. Furthermore, a minority of young adults who have severe learning and physical disabilities and are heavily dependent on their parents receive little support.

Teresa O'Neil and Robert Goodman at the Children's Department, Institute of Psychiatry have assessed a representative sample of 81 18-24 year-olds with hemiplegic cerebral palsy and their parents concerning the nature of their everyday life, the transition to adult services, levels of disability, support services received and needs for services. Researchers from CEMH are exploring the service receipt patterns and estimating the costs of support for the young adults in the survey. Future work will involve the identification of unmet needs for services and the estimation of the associated costs. Information on service needs will be taken from the interview schedules and from assessments of an expert panel.

Funding: North Thames R&D ***Results:*** available mid 1998
Contact: Jennifer Beecham at PSSRU Kent or CEMH

Day activities survey

Day activity forms a central component in the care of people with mental health problems yet there is little information on the level of provision or the types of support available. In 1997 the PSSRU conducted a survey of all day settings in the South Thames area of England to provide an up-to-date picture of provision in day activity services. Data on 155 settings were collected by postal survey providing a broad description of the setting as well as information on staffing, the elements of support, finances and the users. The analysis will examine a number of hypotheses:

- ☐ Are there differences in service orientation (treatment, social support or work-related activities), staffing, number of places and users' characteristics between provider sectors (health, social services, and voluntary or private organisations)?
- ☐ Are there associations between the costs and service outputs, such as the types of support provided, number of places and user characteristics?
- ☐ Do the costs of provision vary depending on the provider sector, the type of setting, and its geographical location?
- ☐ To what extent does the health sector fund mental health day activity settings?

A second phase of research will take a more detailed look at a sub-sample of settings, aiming to describe them in a standardised way and to explore more fully the associations between the support provided, user needs and costs.

Funding: Department of Health ***Results:*** available mid 1998
Contact: Jennifer Beecham at PSSRU Kent or CEMH

Healthcare Resource Groups for people with learning disabilities

Healthcare Resource Groups (HRGs) are groups of treatments and procedures which are clinically similar and likely to use similar amounts of resources. Data on the personal characteristics of more than 2000 people with learning disability have been collected by Claude Pendaries (Invicta Community Care NHS Trust) from facilities across England. The PSSRU is conducting a supplementary collection of data on service utilisation and costs. Costs will be estimated for their service packages using existing information on unit costs and local service-specific data. The association between service use, costs and users' characteristics will be examined to inform the development of HRGs for people with learning disabilities.

Funding: National Casemix Office, NHS Executive ***Results:*** available late 1998
Contact: Adelina Comas Herrera at LSE

Estimating the costs of regulation of residential care for adults

The project will identify the costs incurred by health and local authorities incurred in each area of regulation activity through a postal survey to all inspectors and heads of inspection units in England and Wales. Inspection units regulate a wide range of services including those for people with mental health problems or learning disabilities. The causes of variation in regulation costs will be investigated and multivariate analysis will be used as a basis for predicting the costs of regulation. Findings will be used to inform policy and will enable the Department of Health to set cost-based fee levels and update these according to predicted costs.

Funding: Department of Health / Wales Office of Research and Development for Health and Social Care
Results: available late 1998 / early 1999
Contact: Jane Knight, PSSRU Kent (Email J.Knight@ukc.ac.uk)

Some recent CEMH and PSSRU publications

These two pages give brief details of selected recent publications.

CEMH Working Papers and PSSRU Discussion Papers, including those cited in this *Review*, may be purchased from Clare Valentine (PSSRU librarian, 01227 827773; C.Valentine@ukc.ac.uk) or Daphne Hargreaves (CEMH, 0171 919 3198; cemh@iop.bpmf.ac.uk). They can supply a full list of our mental health research publications, together with information on charges.

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 or book chapter (as are those below) we advise interested readers to obtain that publication from a library or bookshop.

Issue 10 of the *PSSRU Bulletin*, which covers the Unit's work as a whole, is available free of charge, and Issue 11 is planned for late 1998. The PSSRU also publishes a book series under the Ashgate imprint, monographs, and newsletters on various subjects.

The use of mental illness and learning disability hospital sites after closure
Ana Lowin, Martin Knapp, Jennifer Beecham
Psychiatric Bulletin, **22**, 1998, 129-130

Depression and dementia in care homes
Justine Schneider and Anthony Mann
Journal of Dementia Care, Nov/Dec 1997, **27**.

Impact of a dedicated service for male mentally disordered remand prisoners in North-West London: retrospective study
Timothy Weaver, F. Taylor, B. Cunningham, Shane Kavanagh, Anthony Maden, S. Rees
British Medical Journal, **314**, 1997, 1244-1245

At what cost? Using cost information for purchasing and providing community care for people with learning disabilities
Paul Cambridge and Martin Knapp
British Journal of Learning Disabilities, **25**, 1, 1997, 7-12

The costs of external services for elderly people living in institutions
Shane Kavanagh and Martin Knapp (1997), in Ann Netten and Jane Dennett (eds), *Unit Costs of Health and Social Care 1997*, PSSRU, Canterbury, 112-123

Costing services in family centres
Angela Hallam and Martin Knapp (1997) in Ann Netten and Jane Dennett (eds), *Unit Costs of Health and Social Care 1997*, PSSRU, Canterbury, 103-106

Versión española del European Service Mapping Schedule (Diagrama Europeo de Servicios)
Luis Salvador Carulla, Francisco Torres Gonzales, Sonia Johnson, Robert Kuhlman, José-Luis Vasquez Barquero and Jennifer Beecham (1997) *Archivos de Neurobiologia,* **60**, 2, 163-169

Costs of packages of care for older people with dementia
Ann Netten, Angela Hallam and Jane Knight (1997), in J. Moriarty and S. Webb, *Part of their Lives*, National Institute for Social Work, London, 101-119

Cost-effectiveness evaluation of compliance therapy for people with psychoses
Andrew Healey, Martin Knapp, Jack Astin, Jennifer Beecham, Roisin Kemp, George Kirov and Anthony David (1998) *British Journal of Psychiatry*, **172**, May, 420-424

The economic burden of drug addiction: social costs incurred by clients at intake to NTORS
Andrew Healey, Martin Knapp, Jack Astin, M. Gossop, J. Marsden, D. Stewart, P. Lehmann, C. Godfrey (1998) *British Journal of Psychiatry*, forthcoming

Versión española del CSRI: una entrevista para la evaluación de costes en salud mental
José-Luis Vasquez Barquero, Luis Gaite, Jesus Cuesta, Esther Garcia Usieto, Martin Knapp and Jennifer Beecham (1997) *Archivos de Neurobiologia*, **60**, 2, June, 171-184

Leçons britanniques sur le transfert des ressources: le système de dotation par patient
Jennifer Beecham and Alain Lesage (1997) *Santé Mentale au Québec*, **XXII**, 2, 170-194

Child care outcomes: economic perspectives and issues
Martin Knapp and Ana Lowin (1998) *Children and Society,* **12**, forthcoming

Economic evaluation and conduct disorders
Martin Knapp (1998) in Jonathan Hill and Barbara Maughan (eds) *Conduct Disorders in Childhood*, Cambridge University Press, Cambridge, forthcoming

Work schemes and mental health care: some guidelines for purchasers
Justine Schneider (1997) *A Life in the Day*, **1**, 1.

The costs of residential care for people with mental health problems in eight services

Daniel Chisholm, Martin Knapp, Jack Astin, Jennifer Beecham, Bernard Audini and Paul Lelliott (1997) *Journal of Mental Health*, **6**, 1, 85-99

The mental health residential care study: predicting costs from resident characteristics

Daniel Chisholm, Martin Knapp, Jack Astin, Paul Lelliott, and Bernard Audini (1997) *British Journal of Psychiatry*, **170**, 1, 85-99

Exploring quality of care measures

Justine Schneider (1997) *Care, the Journal of Practice and Development*, **6**, 7-20

Purchasers, providers and managed care: developments in the mental health market place

Shane Kavanagh (1997) *Current Opinion in Psychiatry*, **10**, 2, 153-159

Specialist work schemes, user satisfaction and costs

Justine Schneider and Angela Hallam (1997)*Psychiatric Bulletin*, **21**, June, 331-333

Costs of schizophrenia

Martin Knapp (1997) *British Journal of Psychiatry*, **171**, 6, 509-518

Economic outcomes and costs in the treatment of schizophrenia

Martin Knapp and Shane Kavanagh (1997) *Clinical Therapeutics*, **19**, 1, Jan-Feb, 128-138

Economic evaluations and interventions for children and adolescents with mental health problems

Martin Knapp (1997) *Journal of Child Psychology and Psychiatry*, **38**, 1, 3-26

The cost consequences of changing the hospital-community balance: the mental health residential care study

Martin Knapp, Daniel Chisholm, Jack Astin, Paul Lelliott and Bernard Audini (1997) *Psychological Medicine*, **27**, 681-692

Costing care in the hospital and in the community

Jennifer Beecham, Angela Hallam, Martin Knapp, Barry Baines, Andrew Fenyo and Michelle Asbury (1997) in Julian Leff (ed.) *Care in the Community: Illusion or Reality*, John Wiley & Sons, Chichester, 93-108

The costs of community-based care for first-ever patients: a case register study

Francesco Amaddeo, Jennifer Beecham, Paola Bonizzato, Andrew Fenyo, Michele Tansella and Martin Knapp (1998) *Psychological Medicine*, **28**, 173-183

The use of a case register for evaluating the costs of psychiatric care

Francesco Amaddeo, Jennifer Beecham, Paola Bonizzato, Andrew Fenyo, Martin Knapp and Michele Tansella (1997) *Acta Psychiatrica Scandinavica*, **95**, 195-198

The cost-effectiveness of community care for adults with learning disabilities leaving long-stay hospital in Northern Ireland

Jennifer Beecham, Martin Knapp, Sinead McGilloway, Michael Donnelly, Shane Kavanagh and Andrew Fenyo (1997) *Journal of Intellectual Disability Research*, **41**, 7, Feb, 30-41

QALYs and mental health care

Daniel Chisholm, Andrew Healey and Martin Knapp (1997) *Social Psychiatry and Psychiatric Epidemiology*, **32**, 2, 68-75

The mixed economy of reprovision

Martin Knapp, Jennifer Beecham and Angela Hallam (1997) in Julian Leff (ed.) *Care in the Community: Illusion or Reality*, John Wiley & Sons, Chichester, 37-47

Economic evaluation and inpatient services

Jennifer Beecham (1998) in Jonathon Green and Brian Jacobs (eds) *The Inpatient Psychiatric Treatment of Children*, Routledge, London

Evaluacion de costes en salud mental y en las minusvalias psiquicas. Costes y consecuencias a largo plazo: atencion comunitaria a pacientes con retraso mental

Jennifer Beecham, Lesley Hayes, Martin Knapp and Paul Cambridge (1997) *Monografias de Psiquiatria*, **9**, 4, July-August, 41-48

Economics and mental health: an aid to decision-making

Andrew Healey and Martin Knapp (1998) in Charles Brooker and Julia Repper (eds) *Serious Mental Health Problems in the Community*, Ballière Tindall, London

Psychotherapy: individual differences in cost and benefit

Martin Knapp and Andrew Healey (1998) in Nancy E. Miller and Katherine Magruder (eds) *The Cost-Effectiveness of Psychotherapy: A Guide for Practitioners, Researchers and Policy-Makers*, John Wiley & Sons, New York and Chichester

Mental health care in London: costs

Daniel Chisholm, Martin Knapp and Ana Lowin (1997) in S. Johnson et al. *London's Mental Health*, King's Fund, London, 305-330

Economic evaluation of psychological interventions for schizophrenia

Martin Knapp and Andrew Healey (1998), in Til Wykes (ed.) *Outcome and Innovation in Psychological Treatment of Schizophrenia*, John Wiley & Sons, Chichester and New York, 259-282

The costs of community-based care for first-ever patients: a case register study

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The Personal Social Services Research Unit was established in 1974 at the University of Kent at Canterbury. Two further sites opened in 1996 — 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.

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