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Payment by Results in Mental Health: A Review of the International Literature and an Economic Assessment of the Approach in the English NHS

CHE Research Paper 50

Payment by Results in Mental Health: A Review of the International Literature and an Economic Assessment of the Approach in the English NHS

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Glossary and acronyms

Adverse selection	If insurance companies set premiums based on the average experience of a population, high risk individuals have a greater incentive to buy insurance than low-risk individuals. This may mean that premiums exceed expected liabilities (i.e. do not cover costs incurred by insurers).
Asymmetry of information	Healthcare professionals and patients have different information: professionals have clinical effectiveness and safety, while patients know more about their own preferences and, sometimes, health status. Insurance companies know less than insured persons about the latter's health status and risky behaviours.
Coinsurance	The insured person shares the insured loss with the insurer.
Copayment	The sum paid by the insured person under a coinsurance arrangement.
Cost Sharing	User charges relating to expenditure on health care.
Cost Shifting	Activity through which costs are shifted from one decision maker to another.
Deductible	Fixed sum paid by insured person if the event insured against occurs. Known as 'excess' in the UK.
Moral hazard	Ex ante: the effect that being insured has on behaviour, increasing the possibility of the event insured against occurring. Ex post: insurance reduces the price of care, increasing demand by insured persons. Derives from price elasticity of demand.
Supplier-induced demand	The creation of additional demand by providers. Its existence is contentious.

Source: AJ Culyer (2005) The Dictionary of Health Economics. Edward Elgar Publishing, Cheltenham.

AC	Autonomous Communities (Spain)
AWBZ	Exceptional Medical Expenses Act (a Dutch mandatory national insurance scheme for long-term care)
CACS	Comprehensive Ambulatory Care System (Canadian system for acute primary care visits)
CMG	Case Mix Group (Canadian system for acute care inpatient visits)
CMI	Case Mix Index
CMS	Centers for Medicare and Medicaid (US)
DBC	Diagnose Behandeling Combinatie (Diagnostic Treatment Combination; DRG-based system for Dutch inpatient care)
DRG	Diagnostic Related Group
FFS	Fee-for-Service
HoNOS	Health of the Nation Outcome Scales
InPAC	Integrated Packages Approach to Care
IPF	Inpatient Psychiatric Facilities (US)
IZAs	Intramuraal ZorgArrangement ('Intramural Care Arrangement') (NL)
MH-CASC	Mental Health Classification and Service Costs (Australia)
OMHRS	Ontario Mental Health Reporting System
P4P	Pay-for-Performance
PbR	Payment by Results
PCT	Primary Care Trust
PPS	Prospective Payment System
RAI-MH	Resident Assessment Instrument-Mental Health (Canada)
SARN	Summary Assessment of Risk and Need
SCIPP	System for the Classification of Inpatient Psychiatry (Canada)
SHI	Social Health Insurance
SWPD	SCIPP Weighted Patient Day (Canada)
TWG	Technical Working Group (Canadian assessor of SCIPP)
Zvw	Zorgverzekeringswet (Dutch Health Insurance Act 2006)
ZZP	Zorgzwaartepakketten (Dutch care packages)

Abstract

The use of casemix-based funding mechanisms is increasing internationally. This funding approach potentially offers incentives for a range of diverse objectives, including improvements in efficiency, quality of care and patient choice. However, to date, the application of this approach to mental health care has been limited and there is no long-term experience to inform policy and practice.

In England, the Department of Health plans to extend the scope of Payment by Results, an activity-based funding approach, to mental health. The Care Pathways and Packages Clusters comprise a set of 21 'care clusters' that together form 'currencies', or units for contracting and commissioning mental health services. Each cluster defines a package of care for a group of service users who are relatively similar in their care needs and therefore resource requirements. At the time of writing, the currencies are being refined and tested at several sites in England. In addition, costing exercises are underway to investigate the resource implications of the currencies. The intention is that from April 2010 these currencies can be used for commissioning and benchmarking, using local prices agreed between commissioners and providers. Options for moving to a national tariff will also be explored, although its feasibility is unclear.

The University of York was asked by the Department of Health to assess the Care Pathways and Packages Clusters from an economic perspective. This report examines the international literature on payment mechanisms for mental healthcare services. These approaches are described and critiqued, drawing on relevant theoretical and empirical research to explore the strengths and weaknesses of payment mechanisms. Implications for the proposed Care Pathways and Packages Clusters are explored and recommendations are outlined.

Executive summary

Background

The use of activity-related funding mechanisms is increasing internationally. This funding approach potentially offers incentives for a range of diverse objectives, including improvements in efficiency, quality of care and patient choice. However, to date, the application of this approach to mental health care has been limited and there is no long-term experience to inform policy and practice.

In England, the Department of Health plans to extend the scope of Payment by Results, an activity-based funding approach, to mental health. The Care Pathways and Packages Clusters comprise a set of 21 'care clusters' that together form 'currencies', or units for contracting and commissioning mental health services. Each cluster defines a group of service users who are relatively similar in their care needs and therefore resource requirements. At the time of writing, the currencies are being refined and tested at several sites in England. In addition, costing exercises are underway to investigate the resource implications of the currencies. The intention is that from April 2010 these currencies can be used for commissioning and benchmarking, using local prices agreed between commissioners and providers. Options for moving to a national tariff will also be explored, although its feasibility is unclear.

Objective

The University of York was asked by the Department of Health to assess the Care Pathways and Packages Clusters from an economic perspective. Our objective was to identify different methods for funding mental health care, and to explore whether these approaches could shed light on the potential strengths and weaknesses of the proposed approach for PbR in England, the Care Pathways and Packages Clusters.

Methods

We undertook a comprehensive literature review of methods for commissioning mental health services. An information scientist from the Centre for Reviews and Dissemination, University of York, devised a search strategy for relevant electronic databases (Medline, Embase, HMIC, Econlit and PsycInfo). The searches were limited to publications in the English language published between 2006 and 2008. As many potentially relevant policy documents were not expected to be listed on these databases, a web search was also undertaken.

Over 400 potentially relevant publications were identified. These were screened for relevance and papers were ordered or retrieved directly from the web.

For each country where sufficient information was identified, we extracted data on the healthcare system, its approach to mental health care and documented relevant empirical studies. This information was tabulated. For countries that had made extensive efforts to develop a funding strategy for mental health (whether or not subsequently adopted), further details were identified and reported as a narrative, with supplementary web searches conducted if necessary. Finally, findings from the review were used to inform an economic critique of the potential strengths and weakness of the Care Pathways and Packages Clusters approach that is currently being developed for PbR.

Results and recommendations

For many countries, few details of the mechanism(s) used to pay for mental healthcare services were identified. However, five countries have invested considerable time and effort to developing mental healthcare payment mechanisms.

In Australia and New Zealand, classification systems were trialled, but not subsequently implemented for payment purposes. Further details of these approaches are provided in section 1 (Australia) and section 3 (New Zealand) of the Results section of the report. New payment systems for mental health have been recently introduced in the Netherlands (section 4) and the United States (section 5). The new system in Canada (section 2), which applies only in Ontario, is at the implementation stage and has not yet been used to pay for mental health services. These systems offer insights into the

potential strengths and weaknesses of the proposed English approach, the use of Care Pathways and Packages Clusters as a basis for commissioning and, potentially, as the basis of a PbR tariff.

Recommendation 1: Implement the new funding system gradually

In all countries that have introduced, or considered the introduction of, casemix-based funding for mental health, implementation has followed and been informed by experience in the acute care sector. The mental health funding systems covered in this review have – without exception – been introduced gradually (over a period of years), monitored carefully and updated regularly. Risks of financial instability at the provider level have been minimised by progressively moving existing providers from the old funding mechanism to the new one. Experiences in the US, Canada (Ontario), and the Netherlands underscore the need for careful and stepwise implementation, with timetables used to facilitate, support and encourage the process rather than to dictate the pace of change.

England is already pursuing a gradual approach to the implementation of PbR in mental health and the Care Pathways and Packages Clusters approach has been developed in an iterative fashion. First, the currency (clusters) has been developed, refined and is being tested by a small number of providers. Some providers are concurrently undertaking costing exercises on these clusters. The next step will be to begin commissioning using local tariffs. It is still unclear whether a national PbR tariff will be feasible, but if it is to be introduced then carefully designed pilot evaluations would be a sensible first step. These could help assess financial risks for providers and potential efficiency savings at the NHS level. The occurrence of any unintended consequences (e.g. cost-shifting) in other parts of the healthcare system or non-healthcare sectors could also be explored.

Recommendation 2: Consider the use of budget neutrality adjustments and reserve the right to adjust tariff methodology to counter potentially destabilising impacts

The US Medicare psychiatric inpatient payment system was mandated by the Balanced Budget Refinement Act (1999). The Act also required that the new system should be budget neutral. To achieve this, adjustments were made to the tariff in the form of percentage reductions. For example, as improved coding of comorbidities was an expected consequence of the new funding system, a 'behavioral offset' adjustment was made in the form of a 2% reduction to tariff. The US Department of Health and Human Services also reserve the right to adjust the size of this reduction if improvements in coding prove to be greater than anticipated and so jeopardise the requirement for budget neutrality.

Our understanding is that the extension of PbR into mental health is meant to be cost neutral: it implies a change in allocation method, rather than a change in the overall mental health budget. Experience in primary care, where the GP Quality and Outcomes Framework (QOF) resulted in higher-than-expected provider income, may be relevant for mental health. Primary care and mental health specialist care share a similar clinical focus (i.e. on chronic conditions with acute exacerbations) and in both the new funding system involves the introduction of new data reporting systems. Reasons for the large increase in primary care expenditure included a failure to assess baseline activity prior to the introduction of the QOF and the absence of a cap on total provider income. As the intention is to introduce currencies nationally, baseline activity can be assessed to inform expected income distributions and help set the appropriate level for national tariffs. Furthermore, the Department of Health could build regular reviews of adjustment factors into the tariff methodology to mitigate cost pressures upon PCTs.

Recommendation 3: Consider top slicing budgets to maintain financial stability

The US experience suggested that the introduction of a new funding system could have winners and losers. This could potentially destabilise local health economies and/or have financial consequences on other parts of the public sector.

If tariffs for mental health are based on average costs, some providers will experience a drop in income whilst others will see revenues increase. Whilst some of the 'losers' may be able to reduce inefficiencies, adjustments for unavoidable costs at provider level are needed to ensure the payment system is fair and to avoid 'skimping'. The Market Forces Factor adjustment will be even more important than for acute care, since mental health care is relatively more staff-intensive. Phasing in the new system over several years, guaranteeing a minimum percentage income for all providers

during this transition phase (in the US, this was set at 70% of income under the old system), and making appropriate compensation for outlier cases will all help to stabilise provider income. These centrally-administered adjustments could be funded by top slicing the total mental healthcare budget.

Recommendation 4: Consider adjusting payments by length of stay

In the US, length of stay was found to be a major explanatory variable for cost variation and, for this reason, the Americans have opted for a per diem unit of payment. The Ontario system separates length of stay into three parts that vary by their resource intensity: admission phase (days 0 to 5), post-admission phase (days 6 to 730) and long-term phase (more than two years). Both the US and Canadian systems adjust payments for interrupted stays. The Dutch DBC system, which applies only to the first year of care, separates tariffs for length of stay from those for treatment. The Dutch length of stay tariffs depend on underlying provider costs, but it is not clear whether asymmetry of information thwarts payers' ability to validate provider costs (i.e. providers may be able to claim for higher tariffs than are justified by their true costs).

The chronic nature of much mental illness and its unpredictable prognosis means that the choice of payment unit is critical. The US and the Netherlands have linked funding to length of stay, rather than using a simple episode-based approach; this is also the intention in Ontario. Our understanding is that, under the Care Pathways and Packages Clusters approach, costs are to be calculated for each cluster episode defined by review dates. If a unique fixed tariff applies to each cluster, regardless of its position in the treatment pathway, this may fail to adjust for the higher initial cost incurred in the admission phase. For example, cluster 8 occurring at the onset of the treatment pathway may be associated with higher costs than cluster 8 occurring at the end of the treatment pathway. However, this needs to be confirmed by empirical evidence from the costing exercises. If cluster costs are found to vary by position in the pathway, then failure to reflect this in the tariff could incentivise inappropriate admission and discharge behaviours.

Recommendation 5: Use the classification system to help standardise and improve the quality of care

The US has not developed a patient classification system, instead using per diem payments based on national average costs that are then adjusted to reflect patient and provider characteristics. The Netherlands and Canada (Ontario) have each developed psychiatric classification systems. In the Netherlands, the DBCs used for inpatient medical care combine diagnostic and treatment specifications. These payment units are focussed and well-defined. To complement this approach, care packages (ZZPs) have been developed to address broad patient need, covering psychological problems, functioning, cognitive and behavioural problems. Like the DBCs, ZZPs specify staff inputs, but also specify setting characteristics. In Ontario (Canada), the focus is on inpatient care only. Like the Dutch system, the Ontario approach specifies both diagnosis and staff input although interventions are less explicit than the Dutch DBCs. The US system, although not based on DRGs, adjusts payment for a range of factors including staffing intensity.

The Care Pathways and Packages Clusters classification system addresses both clinical and non-clinical needs. Care pathways have been mapped, although the degree of clinical consensus for these is unclear. Nonetheless, they offer a starting point from which to develop consensus. The English approach will require a more systematic approach to data collection and reporting. This offers an opportunity to collect additional data on resource use and process or outcome measures that can help evaluate quality and cost-effectiveness [1], and so inform the debate on what constitutes best clinical practice. Over time, it may be possible to introduce Pay-for-Performance (P4P) elements into the system, so that good practice is appropriately rewarded. However, P4P using a target based approach can encourage 'tunnel vision', in which non-incentivised activity is displaced [2] and would counteract the holistic approach embodied in the Care Pathways and Packages Clusters.

Background

The evaluation of funding mechanisms for mental health care begs a central question: what sort of service does the payment mechanism seek to reward and incentivise? Specifically, which services are to be provided, how they are to be delivered, where they are to be delivered and by whom are the criteria by which the performance of funding mechanisms may be judged. In economics, these concepts are known collectively as 'allocative efficiency', the extent to which an economy delivers the goods and services that society wants [3] (p. 81).

In most developed countries, the provision of mental health services seeks to balance an aspiration for community-based care with the duty to protect the public. Fragmentation of delivery and financing are common to almost all OECD countries, although the "confluence of moral hazard, adverse selection and the existence of a high proportion of public funding" results in low levels of private insurance coverage for mental health [4](p. 58). Community-based arrangements are preferred to hospital-dominated approaches on the grounds of "human rights, relative effectiveness, social inclusion and the expressed preferences of service users" [3](p. 80). However, whether community-based care is cost-effective is less clear. In general, the trend towards deinstitutionalisation is more apparent in Western than in Central and Eastern Europe [5], with little change observed in Bulgaria, Hungary, Slovakia and Slovenia [6]. Furthermore, the boundaries between health and other sectors, such as social care, differ between and within countries, provision and funding may be poorly coordinated, and offer little incentive for funding to follow individuals along the care pathway [7].

Determining the appropriate financing of mental health is challenging for several reasons. First, there is a complex relationship between mental and physical health, which may make a polarised approach (separating payments for physical and mental illness) disincentivise holistic care. People with mental ill health are more likely to suffer from physical ill health, partly because mental illness can reduce the capacity for self-care. Furthermore, recovery from physical illness may be slowed or impeded by mental ill health [8]. In addition, people with certain physical conditions, such as diabetes, coronary heart disease and cancer, are at higher risk of mental ill health. Second, mental ill health typically imposes social costs and benefits ('externalities') on non-health sectors. For example, people with mental ill health may also have social needs and their illness can impose costs on other sectors such as social services, education, employment and the criminal justice system [9, 10]. Payments that reflect only healthcare costs and benefits may send inappropriate signals to providers. Third, mental ill health may be acute or chronic and the course of the illness may vary unpredictably over time [11]. Payments that fail to account for this heterogeneity may encourage over- or under-provision of care. Fourth, there are shortcomings in both the availability and quality of activity data for mental health [11], which thwart the development of robust remuneration. Lastly, provision of mental health services is highly heterogeneous: "extreme practice variation is the norm rather than the exception", at least in the UK [11]. This means that any transition from a locally negotiated payment system to an unmanaged national one may cause severe financial instability, at least in the short run.

Mental health care is characterised by a diversity in provision, which covers long-term and acute care, and medical, paramedical, mental, rehabilitative and social services [12](p. 152). On the supply side, the methods used for financing and reimbursing mental health services affect their provision and availability [12](p. 140). However, there may be a time lag between increased funding being made available and improvements in the provision of services, particularly where these rely on availability of relevant labour. On the demand side, rates of service utilisation by people with mental health problems remain low [3] (p. 85). At the individual level, low uptake reflects stigma, impaired ability to make informed choices and to seek help, financial barriers [13] (p. 32) and involuntary detention. At the level of the purchaser (e.g. a third party payer), pressures on budgets from other parts of the healthcare system may lead them to 'disinvest' in mental health. Depending on how it is designed, the payment mechanism can exacerbate or ameliorate imbalances between supply and demand.

Mental health funding and financing

In Western Europe, the proportion of total healthcare expenditure devoted to mental health ranges from around 4% in Portugal to around 13% in England and Luxembourg. In Eastern Europe, the proportions are generally at the lower end of this range. However, differences in the accounting definitions of what constitutes 'mental health expenditure' mean that these statistics are indicative rather than definitive [3]. The percentage of GDP spent on total health care is often used as an

indicator of a country's commitment to health promotion and health-related quality of life [3]. In Western Europe in 2004, this indicator ranged from 6.9% (in Luxembourg) to 11.1% (in Germany) [9]. The contribution of public financing to total healthcare expenditure ranged from 51.3% (in Greece) to 85.2% (in Sweden). Financing arrangements include a mixture of tax funding, social insurance and voluntary (private) insurance, with out-of-pocket charges levied in many parts of Europe. In some countries, there is direct and specific funding for mental health. For example, pilots in Belgium are underway to fund home care services for people with mental health problems directly by federal government rather than from social insurance. Germany has different rules for mental health services characterised by long durations of care as these are the responsibility of social welfare agencies rather than the sickness funds [9]. The Netherlands, which switched from a Social Health Insurance system to one of mandatory private insurance in 2006, operates a separate compulsory insurance scheme for long-term illness (including mental illness). In countries with voluntary insurance, some types of treatment for mental problems may often be excluded from coverage, e.g. psychotherapy. In Portugal, which devotes only 4% of its health budget to mental health, the tax-based healthcare system is supplemented with voluntary private insurance and tax deductions are available for mental health services not provided by the public system [9]. Portugal has one of the highest levels of out-of-pocket payments, constituting around one-third of all healthcare expenditure. However, exemptions from user charges apply to those with chronic mental illness or disabilities [9]. In England, some private insurance via employers includes treatment for mental health problems (e.g. due to occupational health issues) and some privately purchased policies include some coverage, usually with maximum days or cost caps. People with mental health problems may be exempt from user charges, although prescription charges, such as those in England, may fall disproportionately on this group of patients [9]. The bulk of mental health services are funded on a historical block contract basis, or through specifications of inputs such as number of beds [11], which offer little incentive for efficiency.

Casemix financing mechanisms

In Western Europe, there has been increasing use of diagnostic related group (DRG) tariffs in both tax-based and social health insurance (SHI) based healthcare systems to reimburse mental health services. This has sometimes led to underfunding, "as reimbursement rates have not always fully taken into account all the costs associated with chronic mental health problems" [3] (p. 86). Research suggests that psychiatric casemix reimbursement needs to account for length of stay, diagnosis, degree of social support, assistance with activities of daily living, disease severity, legal status and referral source, and 'dangerous' behaviour [14]. If appropriate risk adjustment is not undertaken, then funding problems may arise [13](p. 35). Well-constructed DRGs, supported by good data on utilisation and unit costs, "can be an effective way of ensuring that sufficient resources are transferred to secondary and specialist mental-health related services. There is a danger… that the complexity of mental health might mean that DRG costs are underestimated." [3] (p. 91). This may lead to inappropriate shortened stays or exclusion from treatment [6]. On the other hand, linking reimbursement to reported casemix may encourage 'over reporting' of mental health symptoms, or 'upcoding' patients, to boost profits, as has been the case in Bulgaria [6, 15].

Retrospective DRG funding for mental health was introduced in Austria in 1997, but payments underestimated complexity and costs associated with psychiatric care and mental health providers faced large deficits. Payments were subsequently increased and now psychiatric wards cover their costs or even generate surpluses [9]. DRG payments for general hospitals and fee-for-service for outpatient services were introduced in Italy in 1992. It was argued that these underestimated costs and the shortfalls are now made up by funds from the national or regional health service.

A DRG system is used in general hospitals in Portugal, but not applied to psychiatric hospitals. In Spain, specific DRGs are used for mental health problems but are widely seen as inaccurate. In France, there is an ongoing process of information collection on mental health service utilization and psychiatric consultations in order to help define casemix and adjust payment systems – France may move to a DRG system [9]. Details of the Dutch DRG system are reported in the Results section.

The Australian casemix study (MH-CASC) derived a classification system based on age, diagnosis, functioning and severity [16]. Although resource use between classes was found to have a 'clinical logic', the degree of variation observed reflected differences in provision. In other words, the lack of consensus on "which treatments are most effective for which patients" meant that the classes based

on service user attributes alone were not suitable for predicting resource use. This lack of consensus on optimal treatment pathways is also a feature of the UK system [17].

Mental health in the English NHS

The UK typically spends around 9% of GDP on health with 85% of expenditure from the public sector [18]. Expenditure on mental health varies widely across England, with a four-fold variation in per capita spend by primary care trusts (PCTs) [19](p 20). There is also poor integration of care [8, 20] and a lack of consensus on optimal treatment pathways; recent research has highlighted geographical and inter-professional variations in referral practices, packages of care, approaches to prioritisation, and perceptions of the appropriateness of care [17].

Payment by Results (PbR) is an activity-based funding mechanism that is used to pay for NHS hospitals services in England. Despite its title, PbR does not reward results, in the sense of paying for health outcomes, but remunerates 'activity' using Healthcare Resource Groups (HRGs) as the payment units. The current system, HRG4, contains almost 1,400 HRGs located within 24 diagnostic-related chapters; for example, chapter A is for Nervous System HRGs, chapter D includes Respiratory System HRGs and chapter T is reserved for mental health currencies.

Although PbR is labelled as an activity-based funding system, around 40% of the HRGs are purely condition-based and do not specify activity at all: for example, there are HRGs for 'Brain Tumours or Cerebral Cysts' and for 'Multiple Sclerosis'. Of course, the payment is *for* activity, but exactly what, when, by whom and where is left to clinical discretion. Whilst the remaining 60% of HRGs are for procedures, interventions or treatments relating to a condition, many HRGs use the term 'procedure' or 'intervention' without further definition. Therefore, although payment is for 'activity', this does not diminish clinical discretion over the care pathway.

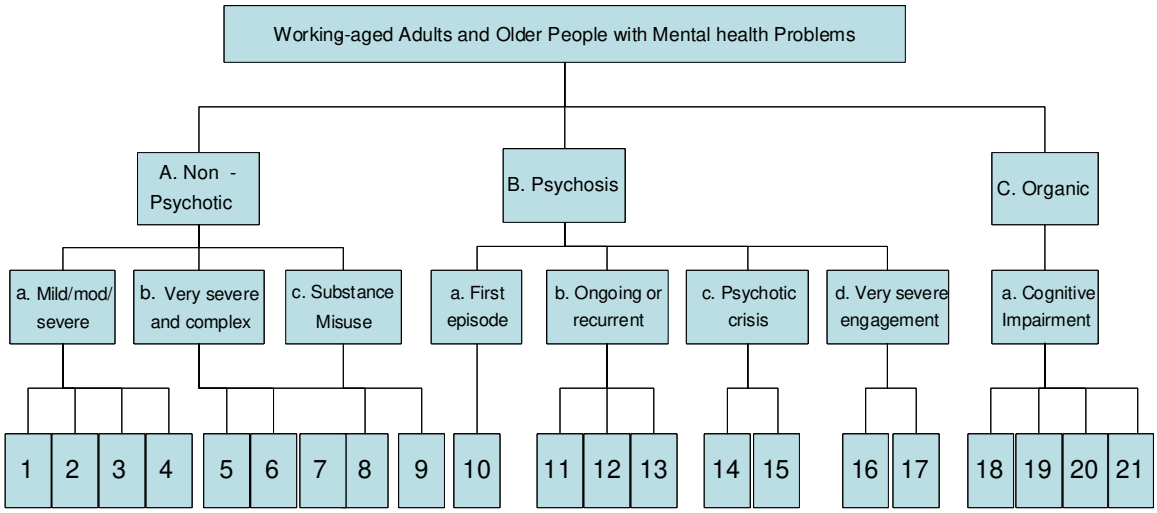
Tariffs are based on national average costs and cover inpatient, outpatient and emergency acute care, although tariffs are mandatory only for a subgroup of HRGs. The national tariff is adjusted by a Market Forces Factor to reflect unavoidable local differences in factor prices for staff, land and buildings [21]. Inpatient tariffs are based on national average length of stay within each HRG, but there are length-of-stay adjustments for short stay emergency admissions and for very long stays. Separate tariffs are available for elective and non elective care, and there are adjustments for specialised services [22].

PbR does not imply additional funding levels, but rather a different allocation method within existing budgets (i.e. is intended to be cost neutral). The main aims of PbR are to increase efficiency, reduce waiting times through an expansion of activity, improve the quality of care and facilitate patient choice by allowing funding to follow the patient [22]. A consultation on the future of PbR identified mental health as a priority area [23]. In his reports on the next stages for the NHS, Lord Darzi highlighted mental health as a priority area for developing clinical pathways [24] and, to "recognise and reward quality improvement", advocated that national currencies for mental health should be available for use from 2010/11 [25] (para 4.23). 'Currencies' are a common set of units for contracting and commissioning mental health services. The aspiration is that the introduction of currencies "will allow the comparison and benchmarking of mental health services, supporting good commissioning" [25](para 4.23).

The development of currencies is focused on specialist (inpatient, outpatient and community-based) services for adults of working age and older people. A Clinical Decision Support Tool (CDST) has been developed by a specialist mental health Trust [17]. The CDST comprises of a set of 21 "clinically meaningful Care Clusters each containing service users who are relatively similar in their care needs and therefore resource requirements" [26]. Costing exercises are currently underway to test this premise and to provide empirical evidence on how resource use varies within and between the clusters and to inform the transition from currencies to local or national tariffs [27].

The CDST was derived from an iterative process involving the "assessment of service users needs, statistical cluster analysis of assessment scores and expert multidisciplinary opinion" [26]. Whilst the classification is based on both clinical and non-clinical need [11, 17], the 21 clusters are located within three clinical 'superclasses' that are the first step in the classification process: organic disease, psychotic disorders and non-psychotic disorder (Figure 1). Although the care clusters are not based

on diagnosis, people with similar diagnoses and similar levels of symptom severity are likely to be found within the same cluster.



Source: South West Yorkshire Mental Health NHS Trust 2008 [26] (used with permission)

Figure 1: Relationship of the 21 care clusters

Service users are to be allocated to a cluster on the basis of 'need'. Two alternative clustering tools are under evaluation: SARN, the Summary Assessment of Risk and Need, and HoNOS PbR [28]. The tools are both modified versions of the Health of the Nation Outcome Scales (HoNOS) instrument. HoNOS PbR has two parts: the first covers the 12 items from HoNOS and addresses current problems occurring during the last fortnight; part two covers historical problems [29]. SARN covers historical and current problems in a more integrated manner, but this makes it more difficult to extract 'pure' HoNOS scores. In terms of content, the tools are similar with differences centring on a small number of items (e.g. suicide vs. non-accidental self-injury). Both tools rate items such as behaviour, substance misuse and physical illness on a five-point scale (0, no problem to 4, severe or very severe problem). The expected needs assessment scores for one of the care clusters (from SARN) are shown in Figure 2. Red cells indicate likely scores; yellow cells indicate items where some cluster patients may score; and blank cells indicate items where cluster patients are unlikely to score. The number for each item maps onto the 12 HoNOS scales (e.g. scale 11 in HoNOS is 'Problems with living conditions') [17].

The care clusters form the currencies that the Department of Health intends to be used for commissioning. In addition, one specialist mental health trust has developed standardised care packages for each cluster known collectively as the 'Integrated Packages Approach to Care' (InPAC). Each package describes the care activities required to meet the needs of people within a single cluster. Broad diagnostic and historical information informs the different care plans, which are based on clinical guidelines and on NICE guidance. The packages contain 'core elements', which all patients within a cluster will receive, 'essential elements' that only some will receive and 'variance elements' that will sometimes be required [26]. Care packages should guide, but not override, clinical decisions. The patient journey will involve periodic clinical assessment, although 'care transition points' that move patients from one cluster to another may also occur from unscheduled reviews. To be useful for commissioning, longer episodes should be disaggregated into shorter periods and aligned with Care Programme Approach (CPA) reviews [11]. Whilst there is to be national consistency in the use of clusters and the assessment tool (HoNOS PbR or SARN), the care options within each cluster are to be developed locally: apart from NICE guidance, there is therefore no nationally defined set of care packages [28].

Description: This group suffers from moderate to severe disorders that are very disabling. They will have received treatment for a number of years and although they may have improvement in positive symptoms considerable disability remains that is likely to affect role functioning in many ways

Diagnoses: Likely to include:F32 Depressive Episode (Non-Psychotic), F33 Recurrent Depressive Episode (Non-Psychotic), F40 Phobic Anxiety Disorders, F41 Other Anxiety Disorders, F42 Obsessive-Compulsive Disorder, F43 Stress Reaction/Adjustment Disorder, F44 Dissociative Disorder, F45 Somatoform Disorder, F48 Other Neurotic Disorders, F50 Eating Disorder, and some F60 Personality Disorder

Impairment: Likely to seriously affect activity and role functioning in many ways.

Risks: Unlikely to be a major feature but child protection may be an issue if any responsibility for young children.

Course: The problems will be enduring

No	Item description	Score				
		0	1	2	3	4
6a	Hallucinations and Delusions					
6b	Strong Unreasonable Beliefs					
7	Depressed mood *					
8	Other symptoms *					
3	Substance Misuse					
4	Cognitive Problems					
5	Physical Illness					
9	Relationships					
10	Activities of daily living					
11	Living conditions					
12	Occupation					
1	Behaviour					
2a	Suicide					
2b	Repeat Self-Harm					
13	Child Protection					
14	Engagement					
15	Vulnerability					

Figure 2: Needs Assessment scores for Care Cluster 7, Enduring Non-Psychotic Disorders (High Disability)

Objective

Our objective was to identify different methods for funding mental health care, and to explore whether these approaches could shed light on the potential strengths and weaknesses of the proposed approach for PbR in England, the Care Pathways and Packages Clusters.

Methods

We undertook a comprehensive literature review of methods for commissioning mental health services. An information scientist from the Centre for Reviews and Dissemination, University of York, devised a search strategy for relevant electronic databases (Medline, Embase, HMIC, Econlit and PsycInfo). The searches were limited to publications in the English language published between 2006 and 2008. As many potentially relevant policy documents were not expected to be listed on these databases, a web search was also undertaken. Details of the search strategies are reported in the Appendix.

Over 400 potentially relevant publications were identified. These were screened for relevance and papers were ordered or retrieved directly from the web.

For each country where sufficient information was identified, we extracted data on the healthcare system, its approach to mental health care and documented relevant empirical studies. This information was tabulated. For countries that had made extensive efforts to develop a funding strategy for mental health (whether or not subsequently adopted), further details were identified and reported as a narrative, with supplementary web searches conducted if necessary. Finally, findings from the review were used to inform an economic critique of the potential strengths and weakness of the English Care Pathways and Packages Clusters approach that is currently being developed for PbR.

Results

For many countries, few details of the mechanism(s) used to pay for mental healthcare services were identified. Table 1 provides an overview of findings from all countries where evidence was found. However, a small number of countries have invested considerable time and effort to developing mental healthcare payment mechanisms. Details of these systems that have been devised, and sometimes tested and adopted, are reported as a narrative. The countries for which greater detail is given are Australia, Canada, New Zealand, the Netherlands and the United States. A glossary of terms and acronyms is provided in Glossary and acronyms section (above).

Table 1: A summary of mental health financing systems

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
Austria	Federal country with 9 provinces. Health care financing is mixture of federal and provincial responsibilities. Social insurance is main model for health care: 50% of funds for health care come from mandatory payments into sickness schemes; most of rest from tax funds invested by provincial and federal governments and from out-of-pocket payments [3] (p. 70). Premium is not based on health status and varies with income. Access is not based on premium paid. Strong notion of medical care so anything not likely to be curative (e.g. long-term care) is not covered by health insurance system. For social services provided by regions (Länder), out-of-pocket payments may constitute up to one-third of the total cost [30].	Performance related DRG system for hospital care, GPs and psychiatrists paid flat rates and FFS [3] (p. 70). The DRG system is known as the Performance Orientated Hospital Financing System (LKF). Many of the services required are provided in the social care sector not in health care due to the focus of the latter on curative approaches. Social care sector is funded differently (v few funded completely via public funds) mainly from pensions and long-term care allowances, with scope for some costs to be recovered from private savings of patients and their relatives (about two thirds of expenditure funded this way). Reimbursement of hospitals is retrospective and via DRGs introduced in 1997. Provincial institutions hold budgets for all public hospital care that are fixed (receive funds for the insurance system and taxation). If hospitals expenditure exceeds allocation the hospital bears consequences not the payer. Reimbursement in social care is different and is based on principle of subsidiarity; most services partly funded by out-of-pocket payments, but great variation between the 9 provinces [3] (p. 70, 75). In Lower Austria there are separate flows of funds and although the provincial Social Care Fund is meant to be a central institution for resource allocation and distribution, their role, according to some has been marginal [31]. People with longer-term mental health problems are often 'transferred' to social care; but great public sector funding of health care	Zechmeister et al (2002) argue that the incentive structure in the financial system works against the aims of reform to establish integrated community-based mental health care and to reduce over-supply in hospital care and under supply in social care setting [31]. Analyse the incentive mechanisms in place in Lower Austria. Concludes that the disparate financing mechanisms and the lack of co-ordination create incentives for hospital providers to maximise activity and limited opportunities for expansion of community services. Even where psychiatric hospitals have been closed, care is still provided in hospital-focused locations such as wards within general hospitals. In social care there are often monopoly providers who select financially most attractive patients.	No

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
		incentivises greater hospital use – "trans-institutionalisation rather than deinstitutionalisation" [3] (p. 71). Several provinces have been involved in mental health reform in terms of decentralization and deinstitutionalization.		
Australia	Universal compulsory health insurance system (Medicare) funded by taxes and Medicare levy. Covers primary care, hospital care and pharmaceuticals. Private insurance covers private inpatient charges.	Australia's mental healthcare system is highly heterogeneous [32], although public psychiatric hospitals and private psychiatry services form two key components. Spending on mental health care in 2005 was around 6.8% of all healthcare expenditure [33]. Mental health care in Australia is financed by 'third party' funders (governments and private health insurers) and out-of-pocket payments from service users. Medicare subsidises all private FFS consultations, including psychiatry services but geographical access to private psychiatry remains highly uneven and some have suggested reform of the Medicare Benefit Schedule (i.e. changing the fees for psychiatric consultations) to encourage supply to under-served populations [34].	Decreasing consumer subsidies led to reductions in consumption [35]. The Australian MH-CASC study created a casemix classification for specialised mental health service [16].	Yes
Canada	National Health Service with mix of public (tax) and private funding. Hospital and physician services are publicly funded; there are also publicly and privately funded services (e.g. long-term care, pharmaceuticals); and some are purely privately funded (e.g. cosmetic surgery). Federal funds are distributed between ten provinces and three territories. Public funding covers around 70% of total healthcare expenditure.	There are two national casemix systems in Canada that include components for mental health related hospital visits. These are the Comprehensive Ambulatory Care System (CACS) for acute primary care visits and the Case Mix Group (CMG) for acute care inpatient visits [25]. The Ontario Mental Health Reporting System (OMHRS) collects data on patients' mental and physical health, social support and service use. Over the next few fiscal years, these data will be phased into the Ontario hospital funding formula through a casemix assessment tool known as the System for the Classification of Inpatient Psychiatry	No empirical studies identified	Yes

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
		(SCIPP). SCIPP is a casemix methodology that uses risk-adjustment methods to allocate patients to one of 47 groups based on clinical characteristics and the phase of the patient pathway.		
Denmark	National Health Service with universal coverage. Entitlement to hospital, primary, tertiary, long-term and home care defined in law; this includes hospital drugs. Financing and planning delegated to five regions. Funded by taxes and block grants from state with user charges for drugs, dental care and physiotherapy. Around 30% of the population has private insurance to cover drug costs.	Around 7.5% of the healthcare budget is spent on mental health. Severe and enduring mental problems are usually treated only in collaboration with or supervised by community and hospital psychiatric services, whereas common mental health problems are generally treated by General Practitioners [36]. Denmark also has multidisciplinary teams for crisis care, home treatment, assertive outreach and rehabilitation.	No empirical studies identified	No
France	Statutory Social Health Insurance system reimburses insured patients for preventative, curative, rehabilitative and palliative care. All residents are insured for basic health care. Services covered and reimbursement rates are identical in all three main schemes. The SHI funds 75% of healthcare expenditure and 85% of the population also has complementary private insurance. Around 76% of healthcare funding is from the public sector.	France spends around 11.5% of its healthcare budget on mental health. GPs identify and refer and treat people with common mental health problems, with practice based on tradition and professional ethics rather than policy or legislative requirements. France is unusual in having a high level of psychiatric beds and good provision of community-based services [36].	No empirical studies identified	No
Germany	Self-regulated Social Health Insurance (SHI) system, funded by mandatory income-related contributions (typically 12-16% of income)[37]. The German healthcare system is considered to have no overall budget constraint. Around 90% of the population is covered, with the SHI providing ambulatory, pharmaceutical and hospital care. Slightly less than 80% of healthcare funding is from the public sector.	Characterised by a shift from asylums and institutional care to community services. Overall picture is one of fragmented system of provision and funding – "the German disease" [38]. Responsibility for mental health services is shared between 16 federal states with the result that there is considerable variation in provision between areas. There is no national coverage but the federal states are required to provide services if private, volunteer or other organisations do not provide these.	No empirical studies identified Fragmentation of services and budgets has potential to produce perverse incentives in terms of treatment packages. Shift to DRG funding for general hospital care not expanded to psychiatric care – impact is unclear.	No

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
	Payment generally by fee-for-service with compulsory enrolment in social health insurance plans but latter directly reimburse only the costs of inpatient care and medications; the insurance plans transfer global outpatient budgets to medical management organisations of physicians in office practice; pension funds usually pay for rehabilitative care [38]. Reunification of East and West Germany in 1990 presented many challenges to the healthcare system.	Provision of inpatient care is the responsibility of the federal states whilst outpatient and community mental health services (largely independent providers) are organised by local authorities, presenting a problem of integration as the organisation, funding and staffing of each sector is separate. Insurance companies reimburse acute treatment costs of mentally ill if they are eligible for benefits which often they are not (early retirement or unemployment). Social welfare pays for acute inpatient, outpatient and rehabilitation for those without insurance or pension funds. For those eligible, disability funds, pension funds or the federal Bureau of Labour cover costs of rehabilitation care as the focus is on the prevention of loss of work skills. Other elements of care (sheltered accommodation, reintegration measures) usually funded by the social welfare system. Gap between medical and psychosocial care means that the long-term needs of chronically mentally ill are funded from social welfare and as individuals bear a proportion of these costs depending on their income and assets, this can mean families and patients share a lot of the costs [39]. Data are not reliable but expenditure on mental health treatment is estimated to be around 10% of the total health budget; two-thirds of expenditure covered by insurance and a third by social welfare [38]. DRG-based funding is mandatory in general hospital care (from 2005), psychiatric care was excluded in order to avoid incentives to reduce hospital length of stay inappropriately and some commentators believe the DRG system may have serious repercussions for inpatient psychiatric facilities that were (in 2007) exempt		

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
		from DRG financing. Separation of funding for inpatient and outpatient care has meant that potential savings from deinstitutionalisation have not been passed into community sector and there is much debate on the nature of reform needed to create more integrated and comprehensive budgets for care (e.g. managed care models).		
Italy	Comprehensive National Health Service (Servizio Sanitario Nazionale; SSN) financed by general taxation levied at the regional level [9]. Most care is provided free of charge. The State defines 'essential levels of care' and devolves remaining powers to 19 regions and two autonomous provinces [9], who have almost full control over Local Health Units and independent NHS hospitals. Three-quarters of healthcare funding is from the public sector.	Persons with severe mental illness are exempt from user charges [9]. Most non-medical services are provided by informal care (families). DRGs were introduced in 1992, but systematic underfunding has led to shortfalls that are met from national or regional healthcare budgets [9].	No empirical studies identified	No
Netherlands	Major reform in 2006 replaced the SHI system (63%) and private insurance (37%) with a single mandatory private insurance system with regulated market competition. All residents must purchase a basic health plan from a free choice of insurers and may also purchase a complementary plan to cover other services (e.g. adult dental care, psychotherapy, physiotherapy, etc.). For the basic package, which covers acute care provided by hospitals, GPs and specialists, drug and devices costs, risk selection is prohibited and insurers receive risk-adjusted capitation payments funded by government (for under 18s and low-income) and employee contributions. The Exceptional Medical Expenses Act (AWBZ) is a mandatory national insurance scheme for long-term care and some preventative	Much mental health care provided by integrated institutions. New mental health funding system is being phased in: the first year of medical inpatient psychiatric care is funded by the Health Insurance Act. The payment unit for these are DBCs (Diagnostic Treatment Combinations'). In addition to DBC 'treatment codes' which are paid by the day, there are DBC codes for duration of stay. All other medical psychiatric care and non-medical psychiatric care is paid by a separate mandatory insurance scheme (the AWBZ) using care packages known as ZZPs. Each ZZP incorporates three components: client profile; functioning and weekly client hours (with and without day care); and care setting characteristics. Nursing /supportive care ZZPs cover care for various conditions including physical incapacity and dementia. Mental	No empirical studies identified	Yes

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
	services [9].	Health ZZPs cover all other mental illness.		
New Zealand	New Zealand operates a predominantly (78%) publicly funded healthcare system (taxation and accident insurance) with the remainder of expenditure funded by private insurance and out-of-pocket payments. Decision-making is decentralised to District Health Boards (DHBs), who are responsible for purchase and provision. GPs, primary health organisations (PHOs), rest homes and midwives are independent and contracted to supply services by DHBs or the Ministry of Health. Most health care is provided free of charge, but primary care is funded by fee-for-service.	The "Mason Inquiry Report" of 1996 crystallised many of the previous developments in mental health in NZ and argued for cash injection, better planning and the need to address stigma and discrimination against people with mental health problems. The Mental health Commission was subsequently established and oversees and monitors implementation of national strategy. A major investment has been made in mental health services with an increase of 125% between 1995/6 and 2002/3 although there is some concern that it may not be translated into better services [40]. Major strand of policy development has been the growth of consumer voice as evidenced by the growth of networks and support groups and substantial progress in consumer participation [40].	A large scale exercise (Mental Health Classification and Outcomes Study - CAOS) to develop a system of casemix classification for mental health services was undertaken in NZ in 2003 using data provided from 8 district health boards covering the whole range of psychiatric services [41, 42]. The aim was not to develop a funding mechanism but to address the issue of casemix in mental health in order to tackle issues related to quality, utilisation, outcomes, development of care protocols. It used "episodes of care" which related to a period of contact in one treatment setting rather than to an illness episode or a patient management plan and covered community and inpatient care. The aim was to identify patient characteristics that explained the resource use and costs of care. Resource use data was collected along with HoNOS measures (plus specific versions for older people and children), a global "focus of care" measure that addresses goal of care plus various other measures to capture severity. Regression analysis was undertaken to define classes aiming to use patient characteristics rather than services delivered as cost drivers; minimise variation within classes and maximise variation between classes; make clinical sense; and be suitable for routine data collection. Forty-two classes (20 inpatient and 22 community) were identified through the	Yes

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
			above process: for adults, certain HoNOS items, focus of care rating, legal status and ethnicity all were predictive of costs; for children and youth, diagnosis (for inpatient only), age and certain HoNOS items were predictive. Nine variables were therefore used in the classification system: (a) service attributes: a direct service measure, length of stay (in the inpatient category); (b) consumer attributes: age, ethnicity for adults; HoNOS for adult inpatient; diagnosis for child and youth inpatient; HoNOS for child/youth; (c) blend of service and consumer measures: assessment episode only (community category), legal status (adults), FOC (adults). Ethnicity had a major impact on case complexity and including it in the classification system is a novel approach.	
Norway	Regional Health Authorities funded by grants from central government; municipalities are funded by central government grants and by local taxes. RHAs manage hospital and community services. Municipalities provide primary care, social care and housing.	Out of pocket payments are 'modest', with most services financed by taxation. Block grants fund mental health care and other specialist services [3] (pp. 78-9). As hospital care for physical conditions is reimbursed by DRG system, there is concern that funds are diverted from mental health to somatic care, so grants are earmarked. Proposals for mental health care to be funded under DRG (activity-based) system.	No empirical studies identified	No
Spain	National Health Service established in 1995 and guarantees basic health care to all Spanish citizens. Financed mainly by central taxation, the NHS provides health promotion, inpatient, outpatient and pharmaceutical care, but excludes dental, social and community care. Ten percent of the population has private healthcare	"In Spain, psychiatric care is one of the most neglected areas within the health system." [43](p36). Suffers because of lack of co-ordination and fragmented responsibilities. Psychiatric care apart from hypnosis and psychoanalysis is included in the package of benefits covered by the NHS. Specific DRGs	No empirical studies identified	No

Country	Overview of healthcare system	Key features of mental healthcare system	Empirical studies	Further detail in report
	insurance. Most care free of charge at point of use. Most provision is public. Some user charges apply, especially for medication. Governance and full responsibility for health and social care is decentralised to 17 autonomous regions with the result that there is variation and lack of co-ordination across boundaries [43] [9].	are used for mental health problems but are widely seen as inaccurate [9]. It is unclear whether these are used for reimbursement. There is concern that as responsibility for some aspects of mental health care passes from health to social service sector, access may be compromised for some people due to different eligibility criteria. Many mental health services fall into discretionary social services [9].		
United States	The US has a decentralised, multi-payer system with mixture of private and public finance with 45% public insurance funds (60% if employer based contributions by government are included). Medicare and Medicaid (CMS) are the main public insurance programs, supplemented by programs for specific populations such as the Department of Veterans Affairs (VA). However, CMS coverage is "far from complete" and there may be high deductibles and coinsurance obligations. Medicare covers around 45% of beneficiaries' healthcare costs with the remaining covered by private insurance or out-of-pocket expenditure [37]. Employer-based private insurance is another major funding source. Around 45m Americans are uninsured and a further 16% are underinsured [37].	Since 1960s, US mental healthcare system changed from a centrally planned, state-owned and operated system to one dominated by market forces, still with large proportion of public funding. The US mental healthcare system is "in a period of transformation and experimentation". Medicaid is the "basic backbone" of care for persons with serious and persistent mental health problems [12]. A Prospective payments system (PPS) has applied to Medicare psychiatric inpatient care since 2005 [12, 14]. The VA is exempt from this process [44]. Private health plans sometimes use pay-for-performance schemes to encourage high quality care [45].	RAND Health Insurance Experiment (HIE) [12]. Medicare casemix reimbursement found to increase documentation of mental health symptoms [15]. Prospective payment system for inpatient psychiatric services: no empirical studies identified.	Yes

1. Australia

Brief description and history

Australia operates a universal compulsory health insurance system (Medicare) that is funded by general taxation and the Medicare levy. Introduced in 1975, Medicare (previously known as 'Medibank') aims to provide equal access to basic care, and to encourage efficient provision [32]. Changes to the Medicare benefit schedule for mental health were introduced in 1996. Medicare covers primary care, hospital care and pharmaceuticals. Private insurance covers private inpatient charges.

Key features of current system

Australia's deinstitutionalisation programme began in the 1950s and has resulted in decreased provision of long-term care and an increase in community-based services. The 1992 National Mental Health Strategy required the states and territories to reform their mental health services in return for funding and a commitment to monitor mental healthcare expenditure. The Strategy's central aim was to improve the quality, and expand the range, of community-based mental health services whilst maintaining expenditure on specialised mental health services [33]. Since then, new community-based services have been established and most acute services have been transferred from separate psychiatric institutions to general hospitals, integrating mental health services into the mainstream healthcare system. However, access to crisis services and to services that are responsive to patient need remains uneven, reflecting underlying workforce-related issues including supply, distribution and quality [33, 46].

In July 2006, the Council of Australian Governments agreed to the National Action Plan on Mental Health 2006-2011. The Plan provides a strategic framework that emphasises coordination and collaboration between government, private and non government providers, with the aim of building a more connected system of health care and community support for people affected by mental illness [33, 46].

Australia's mental healthcare system remains highly heterogeneous [32], although public psychiatric hospitals and private psychiatry services form two key components. Spending on mental health care in 2005 was around AUS$3.9bn, or 6.8% of all healthcare expenditure [33]. Mental health care in Australia is financed by 'third party' funders (governments and private health insurers) and out-of-pocket payments from service users. Medicare subsidises all private fee-for-service (FFS) consultations, including psychiatry services, but geographical access to private psychiatry remains highly uneven and some have proposed reform of the Medicare Benefit Schedule (i.e. changing the fees for psychiatric consultations) to encourage supply to under-served populations [34]. In 1996/7, limits on the maximum number of annual psychiatric consultations subsidised by Medicare at the standard rate were imposed, significantly reducing total Medicare expenditure [35].

In 1993, Australian Health ministers agreed to develop a casemix-based funding and management system for Medicare. This approach was favoured over an approach based on historic costs or input costs because payments that are activity-based can incentivise productivity and shorten inpatient stays thereby encouraging community-based care. The Mental Health Classification and Service Costs (MH-CASC) study was therefore commissioned to develop a casemix funding system, although the approach was not subsequently adopted [47, 48].

Empirical studies

Mental health classification and service costs (MH-CASC) study

The Australian Mental Health Classification and Service Costs (MH-CASC) study focused on specialised mental health services, which are provided in inpatient (acute and non-acute) and community settings [16]. Collecting data on 18,000 service users over a 3-month period and covering 25% of Australia's private and public mental health services, the prospective

observational study aimed to create a national casemix classification with associated cost weights.

The study produced a classification system with 42 groups: 19 for community episodes and 23 for inpatient episodes. The groups were based on clinical attributes, such as diagnosis (ICD-10 codes), severity and functioning (using HoNOS amongst other assessment tools), focus of care (e.g. acute or maintenance), legal status, and other psychosocial factors. Service users included children, adolescents and adults of working age and older people.

The MH-CASC experiment involved six steps in the costing methodology.
1: Adjustments made to expenditure recorded by the study sites
2: Sites' basic cost centre structures defined
3: Sites' cost centre structures refined to match activity data
4: Overhead costs distributed to patient care cost centres
5: Staff-related expenditure distributed to patient care and non-patient care events
6: Overheads distributed to patient care and non-patient care events

Although patient factors (casemix) were found to be a cost driver, the 'signal' was found to be relatively weak. Costs were explained more by variation in provider behaviour, differences in the ways that health services treat similar patients. The reasons for provider-level variation were not formally identified, but could include differences in State or Territorial mental health policies, local resource availability, or clinician-level factors [16]. The setting-specific nature of costs was a key reason why the casemix approach was not adopted as a funding mechanism [47].

Reform of the Medicare benefit schedule

Doessel (2007) explored the effect of changes to the Medicare benefit schedule in late 1996 and early 1997 [35]. Two of the changes involved reimbursement: first, reimbursement rates for psychiatric consultations were reduced from 85% of the Medicare schedule fee to 50% when annual utilisation reached 50 consultations. This policy was moderated by a second amendment, the addition of an item to cover patients with chronic mental disorders. The aim was to reduce 'overservicing' of patients, as 1% of psychiatric service users accounted for 16% of Medicare benefits for these services. Practitioners could charge patients a fee in excess of the Schedule fee, so the out-of-pocket payment was equal to the difference between the total fee and the reimbursement. Lowering the reimbursement level when the utilisation cap was exceeded sharply increased the consumer payment and would be expected to reduce the quantity demanded. To moderate this effect, the practitioner could respond by reducing his/her fee in line with the insurance rebate. However, practitioner income would be maximised by switching supply to other patients who could be charged the full fee. The third policy change was a 'fee-freeze' on Schedule fees for medical practitioners. This was also expected to increase users' out-of-pocket payments and so reduce demand.

The Australian government had predicted that the effect of the first policy would be to reduce 1999/00 Medicare expenditure on psychiatric consultations by around AUS$4m. The study authors found this to be an underestimate, with the composite effect of the reimbursement policies amounting to over AUS$5m and the fee freeze almost doubling that saving [35]. The composite policy significantly reduced psychiatric consultations. This suggests the presence of 'ex post moral hazard', i.e. that insurance cover led to over supply.

Private psychiatric services

In a separate study, the relationship between the supply of private psychiatric care paid for by fee-for-service (FFS) and the full price of those services was explored by Williams and Doessel (2008) [32]. Utilisation rates varied geographically and had – almost uniformly – declined since 1996, reflecting changes to the Medicare benefit schedule described above. As prevalence rates are similar across states, geographic variation in uptake suggests that there may be geographical differences in access. Potentially, these could be due to demand-side variables, such as price, income or socio-economic characteristics, or to supply side factors, such as the supply of labour (medical healthcare workers). The reasons

underpinning differential access remain unclear, but unmet need and met non-need are possible consequences [32].

Economic critique

The MH-CASC study found wide, and unexplained, variation in provider costs. Therefore, the casemix methodology, which was based on average resource use, was not implemented. The reasoning behind this decision is not transparent, but a payment mechanism based on average cost can cause financial instability [49], particularly if cost variations reflect factors outside of providers' control (such as local healthcare policies). Moreover, if average cost is systematically lower than the cost of 'best practice', then rewarding providers on the basis of average cost may have unintended adverse consequences on the quality and quantity of care.

2. Canada

Brief description and history

Canada operates a National Health Service financed from a mix of public (tax) and private funding. Hospital and physician services are publicly funded; there are also publicly and privately funded services (e.g. long-term care, pharmaceuticals); and some are purely privately funded (e.g. cosmetic surgery). Federal funds are distributed between ten provinces and three territories. Public funding covers around 70% of total healthcare expenditure.

Key features of current mental healthcare system and financing mechanisms

In 2006, Canada spent around CAN$8bn on mental health care [13] (p. 14). This includes CAN $6bn of government expenditure on hospitals and clinicians, with the remaining costs incurred by private insurers on pharmaceuticals and out-of-pocket expenditure by consumers (e.g. copayments on pharmaceuticals). Public sector expenditure on mental health is around 5.4% of total healthcare expenditure [13](p. 28).

• Patient identifiers • Personal items • Referral items • Mental health service history • Assessment information • Mental state indicators • Substance use and excessive behaviours • Harm to self and others • Behaviour disturbance • Cognition • Self-care	• Communication/vision patterns • Health conditions and possible medication side effects • Stressors • Service utilization/treatments • Control procedures/observation • Nutrition • Role functioning and social relations • Resources for discharge • Psychiatric diagnostic information • Service interruptions • Medications
Source: http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=services_omhrs_about_e Accessed 04/03/09	

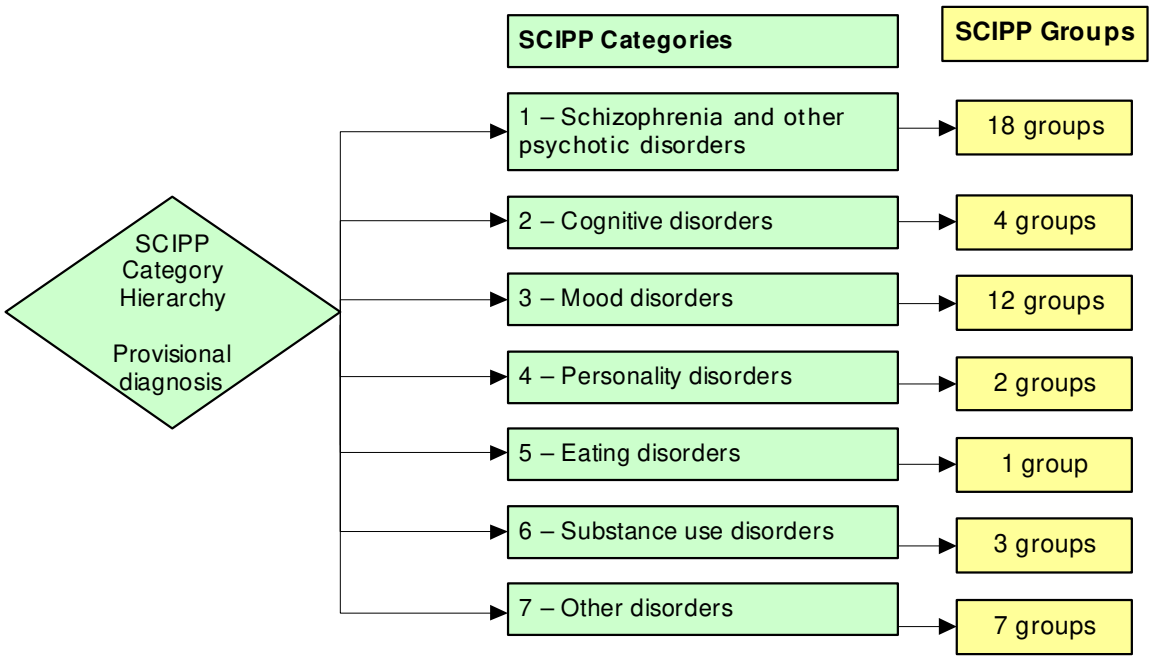
Figure 3: OMHRS data elements in the Minimum Data Set-Mental Health

There are two casemix systems in Canada that include components for mental health related hospital visits. These are the Comprehensive Ambulatory Care System (CACS) for acute primary care visits and the Case Mix Group (CMG) for acute care inpatient visits [50]. Since October 2005, Ontario has also collected activity data on Ministry of Health designated adult mental health beds as part of the Ontario Mental Health Reporting System (OMHRS). OMHRS data are collected using the Resident Assessment Instrument-Mental Health (RAI-MH) which includes the Minimum Data Set-Mental Health (see Figure 3), data on 32 quality indicators and 12 outcome measures, and 28 assessment protocols.[1] This provides information on patients' mental and physical health, social support and service use. Hospitals collect data at admission and discharge, and when an individual has a significant change in health status, and every three months for individuals who stay longer than three months.[2] The intention is that over the next few fiscal years, these data will be phased into the Ontario hospital funding formula through a casemix assessment tool known as the System for the Classification of Inpatient Psychiatry (SCIPP).

Ontario System for the Classification of Inpatient Psychiatry (SCIPP)

The Ontario System for the Classification of Inpatient Psychiatry (SCIPP) was developed by a collaborative group that included academics, Ministry of Health representatives and the Ontario Hospital Association (Figure 4). This system is not yet used to inform payment, but the intention is that it will be.

[1] http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=services_omhrs_about_e, accessed 04/03/09
[2] http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=services_omhrs_e, accessed 04/03/09



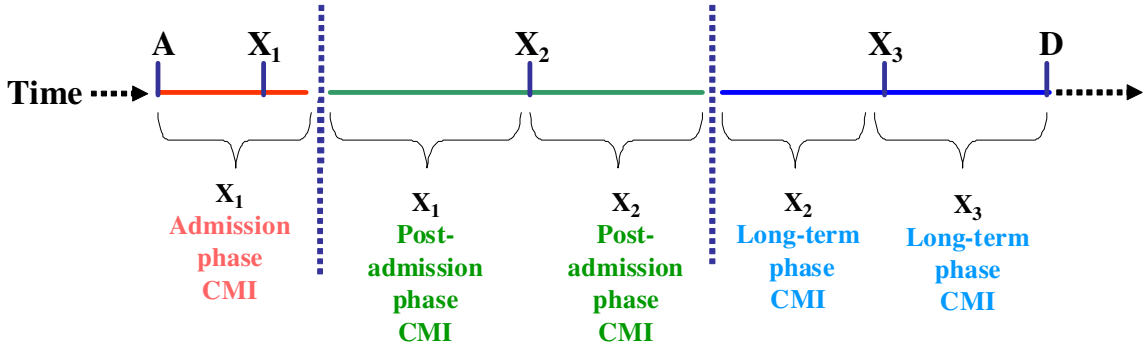
Source: Murphy 2008 [50](used with permission)

Figure 4: Ontario System for Classification of Inpatient Psychiatry (SCIPP)

Data on around 2000 patients were collected between September 1999 and December 2000. Data on staff time were collected to derive wage-weighted per diem patient-level variable costs [50]. A Technical Working Group (TWG) overviews the implementation process, evaluating both the data and the SCIPP methodology. Modifications to the SCIPP tool made in response to TWG recommendations include the addition of a group for short-stay assessments (less than 72 hours); a group for unplanned discharge assessments; refinements to the substance abuse category; adjustments for service interruptions; and the addition of items to collect comorbidity data. Data on staff time are unavailable for short-term assessments. To address this, there is a mandatory requirement to report provisional diagnosis and costs are proxied by average resource use for the admission phase [51](para 2.2.2). To develop Case Mix Index (CMI) funding values that reflect total cost, data from OMHRS, SCIPP weighted patient day (SWPD), the discharge database and cost data will be combined. Costings are based on hospital-level financial data and are broken down into direct costs and overheads [51] (para 6.2).

SCIPP uses clinical criteria to group adult mental health assessments into one of seven categories and 47 groups, with each group having an associated Case Mix Index (CMI) that reflects nursing, non-nursing and total staff costs. There are two additional categories for records with no provisional diagnoses (category 8) and records for Short Stay episodes (category 0). In categories 1 to 7, episodes are subdivided into three phases and weighted according to resource intensity (see Figure 5):

- admission phase (days 0 to 5, usually the most resource intensive phase)
- post-admission phase (still undergoing treatment, but of lower intensity than the admission phase; days 6 to 730)
- long-term phase (after two years; day 731 onwards)



Source: Murphy 2008 [50](used with permission)

Figure 5: SCIPP weighted patient groups

The SCIPP weighted patient day (SWPD) reflects both patient data from OMHRS and the episode (resource intensity) phase. Weights are relative to costs for the 'average' mental health patient in Ontario. The aspiration is that weights will be recalculated annually [50].

Empirical studies

Ontario System for the Classification of Inpatient Psychiatry (SCIPP)

No formal evaluations of the SCIPP system were identified. However, the Technical Working Group evaluates the system on an ongoing basis. Use of SCIPP for funding purposes has yet to be implemented.

Economic critique

The economic implications of the SCIPP will partly depend on exactly how it is used to inform the hospital funding system; at present, this is unclear. The system takes account of both clinical and resource factors: while diagnosis is crucial for the initial classification (see Figure 4), subdivisions within each category vary by staffing costs. Furthermore, each episode is adjusted for length of stay and location in the treatment pathway so that average daily payments will be lower when length of stay is longer. This helps discourage unnecessary delays in discharge. To remove incentives for providers to 'game' the system by discharging and then readmitting patients to take advantage of the higher admission phase payments, 'service interruption' days are simply subtracted from the patient day count [51]. This approach applies to any interruption in stay, regardless of provider or patient motivation (there may be genuine and medically sound reasons for patients to be discharged for short periods, for example to test whether they are well enough to live at home again).

The OMRHS dataset includes a wide range of risk factors, outcomes and quality measures that could be used to adjust payments and ensure the system is fair. However, as Canadian hospital services are wholly publicly funded, there is a risk that a fully costed payment system that covers longer-term care may encourage privately funded long-term care institutions to shift costs and practise 'adverse selection' by referring (or providing financial incentives to shift) more complex cases to the public system. The intention to recalculate costs annually and the routine measurement of patient characteristics, outcomes and resource use means that it should be possible to assess whether, and to what extent, these unintended consequences arise and to adjust the payment system accordingly.

3. New Zealand

Brief description and history

New Zealand operates a predominantly (78%) publicly funded healthcare system (taxation and accident insurance) with the remainder of expenditure funded by private insurance and out-of-pocket payments. Decision-making is decentralised to District Health Boards (DHBs), who are responsible for purchase and provision. GPs, primary health organisations (PHOs), rest homes and midwives are independent and contracted to supply services by DHBs or the Ministry of Health. Most health care is provided free of charge, but primary care is funded by fee-for-service.

Key features of current mental healthcare system and financing mechanisms

The Mason Inquiry Report of 1996 crystallised many of the previous developments in mental health in New Zealand and argued for cash injection, better planning and the need to address stigma and discrimination against people with mental health problems. The Mental health Commission was subsequently established and oversees and monitors implementation of national strategy.

A major investment has been made in mental health services (125% increase between 1995/5 and 2002/3) although there is some concern that this additional funding may not be translated into better services [40].

A major strand of policy development has been the growth of consumer voice as evidenced by the growth of networks and support groups and substantial progress in consumer participation [40].

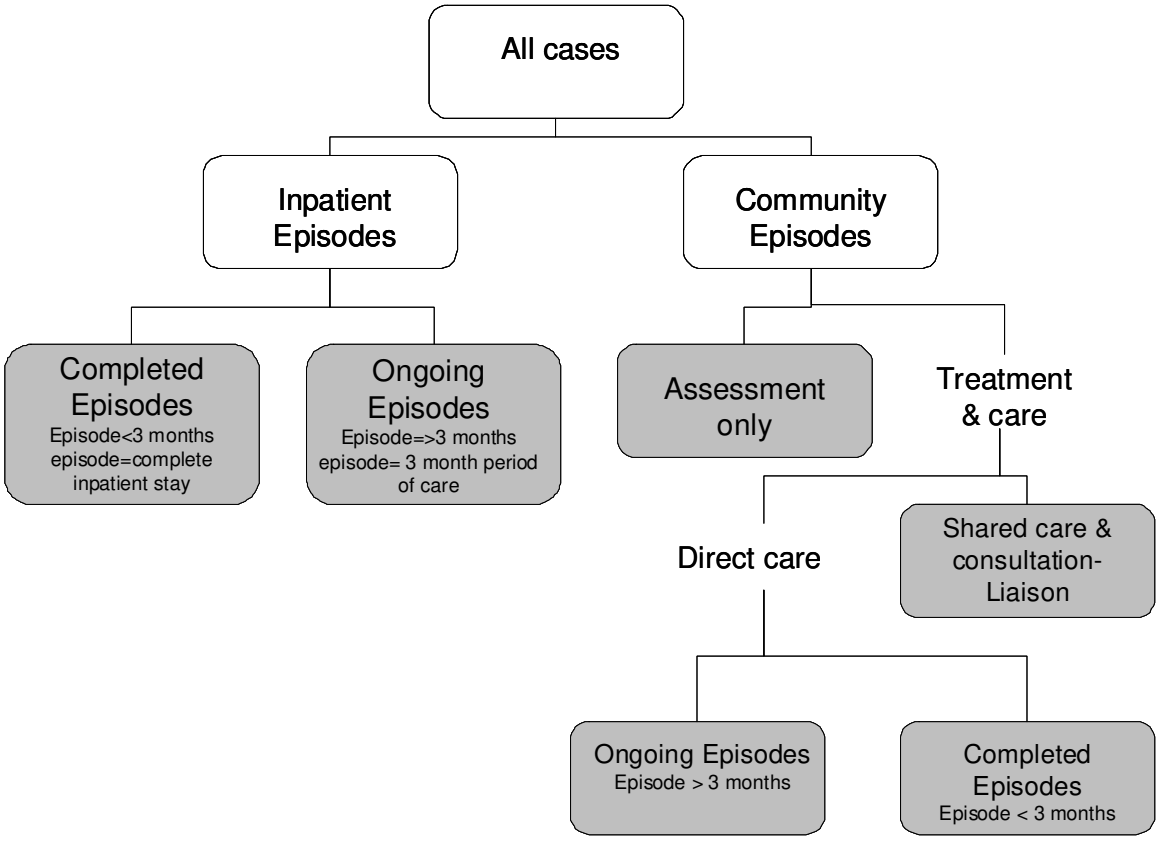
Empirical studies

NZ-CAOS study

A large scale exercise (Mental Health Classification and Outcomes Study: NZ-CAOS) to develop a system of casemix classification for mental health services was undertaken in New Zealand in 2003 using data provided from eight district health boards covering the whole range of psychiatric services [41, 42]. The aim was not to develop a funding mechanism but to address the issue of casemix in mental health in order to tackle issues related to quality, utilisation, outcomes, and the development of care protocols.

The study used ‘episodes of care’ which related to a period of contact in one treatment setting rather than to an illness episode or a patient management plan and covered both community and inpatient care. The aim was to identify patient characteristics that explained the resource use and costs of care. Resource use data were collected along with HoNOS measures (plus specific versions for older people and children), a global ‘focus of care’ (FOC) measure that addressed goal of care plus various other measures to capture severity. Regression analysis was undertaken to define classes aiming to use patient characteristics rather than services delivered as cost drivers; minimise variation within classes and maximise variation between classes; make clinical sense; and be suitable for routine data collection.

Forty-two classes (20 inpatient and 22 community categories) were identified through the above process: for adults, certain HoNOS items, FOC rating, legal status and ethnicity all were predictive of costs; for children and youth, diagnosis (for inpatient only), age and certain HoNOS items were predictive. Nine variables were therefore used in the classification system: (a) service attributes: a direct service measure, length of stay (in the inpatient category); (b) consumer attributes: age, ethnicity for adults; HoNOS for adult inpatient; diagnosis for child and youth inpatient; HoNOS for child/youth; (c) blend of service and consumer measures: assessment episode only (community category), legal status (adults), FOC (adults). The resulting episode of care model is shown in Figure 6.



Source: Gaines 2003 (p. 21)[42] Reproduced with permission

Figure 6: Episode of Care model (New Zealand)

Ethnicity had a major impact on case complexity and including it in the classification system is a novel approach. However, it limits the transferability of the system to other settings [42].

Like the Australian MH-CASC study, the NZ-CAOS study found significant variation between providers, much of which was considered to be 'random'. The heterogeneity in service provision was reflected in wide cost variations. The intention was to use this casemix classification system for benchmarking purposes and the study recommended that it should be incorporated into routine clinical practice and refined in the light of routinely collected data.

Economic critique

As authors acknowledge, the study was based on reflecting current practice and not on best practice.

Gaines et al 2003 also note that there may be factors in addition to consumer characteristics that are driving cost differences including resource availability, types of services available and individual clinician practice [42].

The motivation for the classification system was not to develop a funding system and the authors note that an episode payment model such as that used with DRGs would not be sufficient in mental health. The Ministry of Health stated that there was no immediate plan to move towards purchasing on a casemix basis for mental health services.

4. The Netherlands

Brief description and history

The Dutch healthcare system is characterised by 'managed competition' [52]. Under the 2006 Health Insurance Act (Zorgverzekeringswet, Zvw), all residents of the Netherlands are mandated to buy a basic benefits package from a choice of private health insurers. There are financial penalties for residents who fail to comply with the Act. Insurers are obliged to accept every resident in their area of activity. This is facilitated by a risk equalisation fund and prevents direct or indirect risk selection. The aim of the Health Insurance Act is to create strong price competition between health insurers and to improve the efficiency of healthcare provision [52].

The insured pay a nominal premium to the health insurer. Everyone with the same policy will pay the same insurance premium. The Health Insurance Act also provides for an income-related contribution to be paid by the insured. Employers contribute by making a compulsory payment towards the income-related insurance contribution of their employees. Until 2008, everyone who paid health insurance premiums was entitled to a rebate of up to €255 if no claim was made during the preceding year. The scheme was known as the 'no-claim rebate rule'. In 2008 the no-claims scheme was replaced by a compulsory annual excess (deductible) of €150. People with unavoidable long-term health expenses, for example due to chronic illness or disability, are offered financial compensation.[3]

The Exceptional Medical Expenses Act (AWBZ) is a mandatory national insurance scheme for long-term care [9]. This scheme is intended to provide the insured with chronic and continuous care which involves considerable financial consequences, such as care for disabled people with congenital physical or mental disorders.[4]

Key features of current mental healthcare system and financing mechanisms

Around 80% of mental health secondary care is provided by 39 regionally-based 'integrated institutions that provide care in inpatient and outpatient settings with psychiatrists playing a dominant role in provision of care [53]. Longer-term care is funded under the AWBZ and is free to users at the point of access, except that a small copayment is applicable for psychotherapy. The integrated institutions have developed care programmes, based on diagnosis, that outline care pathways and outputs. These integrated institutions have allowed substitution of clinical services by day care, home care and supported housing [30].

Other secondary care providers are private practices (e.g. psychotherapists) and independent institutions, with primary care largely provided by GPs, psychologists and social workers. Recently, mental health care has shifted away from primary care and towards specialised services (secondary care). This is partly because of the 'monopolisation' of mental health care by the integrated institutions, which has focused care towards medical specialisation. In addition, heavy workloads for GPs have increased referral rates for people with mental health problems.

The funding system for psychiatric care is changing from one that is based on institutional budgets to one where funding reflects service users' care needs.[5] From January 2008, the first year of inpatient medical psychiatric care and all medical psychiatric care in other settings is covered by the Health Insurance Act. The Exceptional Medical Expenses Act (AWBZ) funds all non-medical psychiatric care (in any setting) and inpatient medical psychiatric care after the first year [54].

Inpatient medical psychiatric care is reimbursed by a DRG-based system (Diagnose Behandeling Combinatie; 'Diagnostic Treatment Combination'; DBC). In 2009, there were 19

[3] http://www.minvws.nl/en/themes/health-insurance-system/default.asp, accessed 09/02/09
[4] http://www.minvws.nl/en/themes/exceptional-medical-expenses-act/, accessed 09/02/09
[5] http://www.minvws.nl/dossiers/zorgzwaartebekostiging/voor-medewerkers-in-de-zorg/vraag-en-antwoord/default.asp#a1 accessed 17/03/09

categories (containing 145 'product' codes) for therapeutic interventions (Table 2) and 15 length of stay categories (70 codes, which vary by provider cost) (Table 3). Tariffs vary by treatment duration, therapy received and length of stay and are based on actual labour, material and capital costs that were first collected in 2005 [55]. Providers are paid a fixed price both for the type of intervention and for the length of stay [55-57].

Table 2: Dutch DBC codes and tariffs for inpatient medical psychiatric interventions

Treatment category	DBC codes	2009 Tariff (€)		Adjustment factors							
		Min	Max	TREATMENT DURATION	PHARMACO-THERAPY	PSYCHO-DIAGNOSTIC	OTHER DIAGNOSTIC	CRISIS	PSYCHO-THERAP	CREATIVE THERAPY	
No treatment in 24-hour stay	001	0	0	y							
Indirect time	002 to 006	46	1,315	y							
Diagnostics	007 to 012	133	2,124	y		y					
Crisis	013 to 017	105	1,997	y							
Short treatment	018 to 026	104	1,644	y	y						
Attention deficit disorder	027 to 031; 131 to 132	1,036	31,072	y		y					
Pervasive development disorders	033 to 038; 133 to 134	1,050	27,749	y	y						
Other childhood disorder	040 to 042; 135 to 136	1,069	12,939	y							
Delirium or other dementia	044 to 049; 137 to 138	958	33,754	y	y			y			
Alcohol	051 to 054; 139 to 140	834	30,310	y							
Other addiction	056 to 060; 141 to 142	858	31,300	y	y						
Schizophrenia	062 to 068; 143 to 145	935	43,415	y	y		y				
Depression	070 to 078; 146 to 147	979	34,972	y		y			y	y	
Bipolar	081 to 087; 148 to 149	955	26,892	y	y			y			
Anxiety	089 to 098; 150 to 151	966	35,241	y		y	y		y		
Adjustment	100 to 105; 152 to 153	883	28,918	y					y		
Other Disorders	107 to 112; 156 to 157	875	26,241	y					y		
Other Diagnoses	114 to 119; 156 to 157	953	26,438	y	y			y			
Personality Disorder	121 to 129; 158 to 159	1,023	37,625	y			y		y		

Source: NZA 2009 [57]

Table 3: Dutch DBC codes and tariffs for inpatient medical psychiatric stay

Length inpatient stay	DBC codes	2009 Tariff (€)	
		Min	Max
No stay	000	0	0
0 to 3 days	011 to 015	195	1,665
3 to 7 days	021 to 025	480	4,246
7 to 14 days	031 to 035	972	7,950
14 to 21 days	041 to 045	1,671	13,528
21 to 42 days	051 to 055	2,983	25,999
42 to 63 days	061 to 065	4,891	40,542
63 to 84 days	071 to 075	5,671	56,552
84 to 126 days	111 to 115	9,377	81,672
126 to 168 days	121 to 125	14,490	123,693
168 to 210 days	131 to 135	19,527	166,696
210 to 252 days	141 to 145	21,372	182,446
252 to 308 days	151 to 155	27,432	234,176
308 to 364 days	161 to 165	31,755	271,079
over 364 days	171 to 175	35,163	271,320

Source: NZA 2009 [56]

Care under the AWBZ was originally to be funded using IZAs (Intramuraal ZorgArrangement; 'Intramural Care Arrangement') as the payment unit [47]. The IZAs described a client profile and the requisite functions of care and were based on average costs of care [58]. In 2007, the payment units were renamed as 'Zorgzwaartepakketten' (ZZP; care packages) and the transition to a new funding system began.[6] After a year's trial, the new funding system was introduced in January 2009 and the aim is that this system will be fully functional by 2011.[7]

Eligibility for AWBZ mental health services is determined by diagnosis, which must be a DSM psychiatric disorder.[8] The packages describe the amount and type of required care and each package is assigned a maximum tariff [59]. In 2009, there were 52 care packages (ZZPs) for three types of service:[9]

1. nursing and personal care (10 care packages)
2. mental health services (13 care packages)
3. disabled services (29 care packages)

Each ZZP incorporates three components:

- client profile;
- functioning and weekly client hours (with and without day care);
- care setting characteristics.

In each ZZP, the client profile gives a detailed description of the typical client group, their average scores on a range of 'limitation' assessments, the proportion with active or passive psychiatric problems, and the key aims of treatment/ support. These are shown graphically in Figure 7 to Figure 13 (inpatient or institutional setting) and Figure 14 to Figure 19 (sheltered accommodation). Code names are available in Table 7.

[6] http://www.minvws.nl/rapporten/lz/2006/zorgzwaartepakketten-sector-ggz.asp accessed 17/03/09
[7] http://www.nza.nl/nza/Nieuws/ZZP-tarieven/ accessed 19/03/09
[8] http://www.cvz.nl/ accessed 18/03/09
[9] http://www.minvws.nl/dossiers/zorgzwaartebekostiging/documenten/zorgzwaartepakketten-2009/default.asp accessed 17/03/09

Figure 7: ZZP 1B GGZ

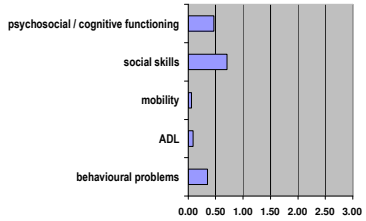


Figure 8: ZZP 2B GGZ

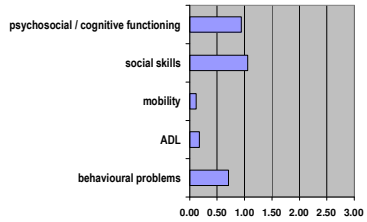


Figure 9: ZZP 3B GGZ

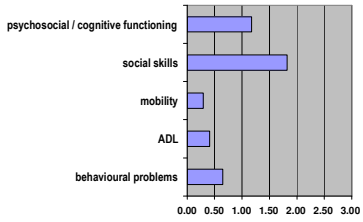


Figure 10: ZZP 4B GGZ

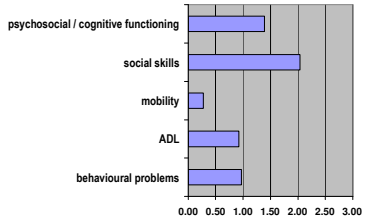


Figure 11: ZZP 5B GGZ

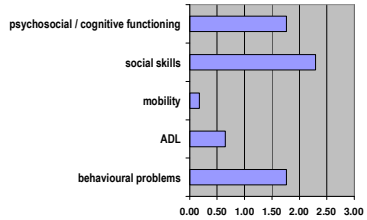


Figure 12: ZZP 6B GGZ

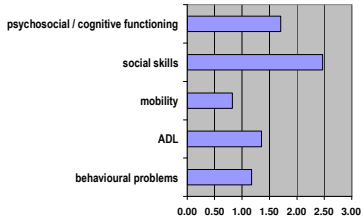


Figure 13: ZZP 7B GGZ

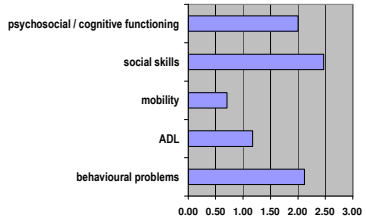


Figure 14: ZZP 1C GGZ

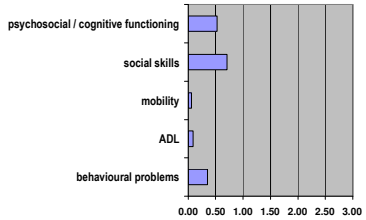


Figure 15: ZZP 2C GGZ

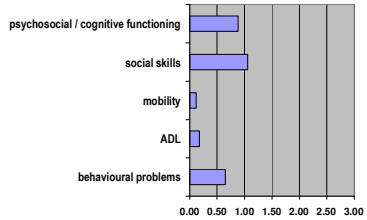


Figure 16: ZZP 3C GGZ

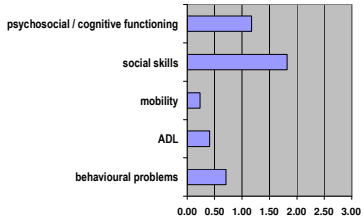


Figure 17: ZZP 4C GGZ

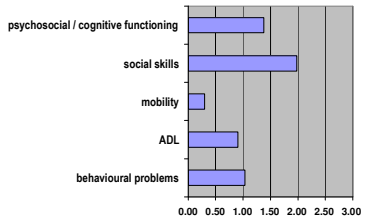


Figure 18: ZZP 5C GGZ

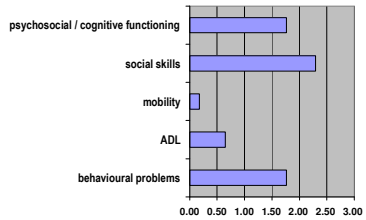
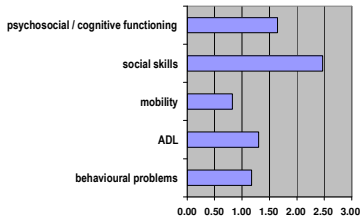


Figure 19: ZZP 6C GGZ



Average care times are estimated on the basis of contact and non-contact time and cover time spent assisting client functioning, giving personal care and giving nursing care. Day care use and therapist use are also specified for each ZZP. Tariffs are informed by these estimates.

Care for organic disorders, such as dementia, is covered by some of the 'nursing and personal care' packages (see Table 4).

Table 4: Dutch care packages (ZZPs) for nursing and personal care, 2009

CODE	TITLE	CLIENT PROFILE	Total weekly care time
ZZP 1 VV	Sheltered housing with some support	Usually no psychiatric or behavioural problems. Dominant condition: somatic disease / condition. This can also be (early stage) psycho-geriatric illness / disease	3.0 to 5.0 hours
ZZP 2 VV	Sheltered housing with support and care	Usually no psychiatric or behavioural problems. Dominant condition: somatic disease / condition. This can also be (early stage) psycho-geriatric illness / disease	5.5 to 7.5 hours
ZZP 3 VV	Sheltered housing with support and intensive care	Usually no psychiatric or behavioural problems. Dominant condition: somatic disease / condition.	9.5 to 11.5 hours
ZZP 4 VV	Sheltered housing with intensive counselling and comprehensive care	Dominant condition: psycho-geriatric illness / disease, but can also somatic	11.0 to 13.5 hours
ZZP 5 VV	Sheltered housing with dementia intensive care	Dominant condition: psycho-geriatric illness / disease	16.5 to 20.0 hours
ZZP 6 VV	Sheltered housing with intensive care and nursing	Dominant condition: somatic disease / condition. Examples of client groups are: clients with severe somatic restrictions (for example, permanent brain injury, Parkinson's, chronic heart failure, muscular); Clients with early-stage complex diseases with / without behaviour problems	16.5 to 20.0 hours
ZZP 7 VV	Sheltered housing with intensive care, due to specific diseases, with emphasis on support	Dominant condition: somatic disease / disorder or a psycho-geriatric illness / disease. Examples of client groups are: adults with severe and permanent non-congenital brain injury; clients with a severe degree of dementia in combination with behavioural problems (especially common among young dementia patients); people with Korsakoff's syndrome; older people with complex physical problems in combination with active psychiatric problems; elderly needing geriatric care as a result of deafness/ blindness	20.0 to 24.5 hours
ZZP 8 VV	Sheltered housing with intensive care, due to specific diseases, with emphasis on care / nursing	Dominant condition: somatic disease / condition. Examples of client groups are: Clients in the last (terminal) stages of the disease, such as Huntington's, ALS, MS or severe rheumatism; high-dependency Clients with Kosakoff's syndrome	24.0 to 29.5 hours
ZZP 9 VV	Recovery-oriented nursing and care	The dominant basis for this customer profile will be both a somatic illness / disease as a psycho-geriatric illness / disease, provided there is a rehabilitation situation.	18.0 to 22.0 hours
ZZP 10 VV	Protected stay in intensive-terminal palliative care	The dominant bases for this client profile may be a somatic illness / disease as a psycho-geriatric illness / disease	26.5 to 35.5 hours

Tariffs for 2009 have been published [60] and details are given in Table 5 (Nursing and Personal Care) and Table 6 (Mental Health).

For mental health, there are two basic categories: category B for inpatients (7 care packages) and category C for patients requiring support in sheltered accommodation (6 care packages)[61]. Table 7 provides details of the client profile and care requirements for these care packages.

Table 5: 2009 Dutch daily tariffs for Nursing and Care packages (incl. dementia)

Code	Care package	2009 Tariff (€)
Z11	Per day ZZP 1VV excl. day care incl. therapy	56.44
Z13	Per day ZZP 1VV incl. day care incl. therapy	60.90
Z21	Per day ZZP 2VV excl. day care incl. therapy	72.08
Z23	Per day ZZP 2VV incl. day care incl. therapy	76.54
Z31	Per day ZZP 3VV excl. day care incl. therapy	87.25
Z33	Per day ZZP 3VV incl. day care incl. therapy	109.13
Z41	Per day ZZP 4VV excl. day care incl. therapy	99.58
Z43	Per day ZZP 4VV incl. day care incl. therapy	121.46
Z51	Per day ZZP 5VV excl. day care incl. therapy	136.45
Z53	Per day ZZP 5VV incl. day care incl. therapy	159.46
Z61	Per day ZZP 6VV excl. day care incl. therapy	136.49
Z63	Per day ZZP 6VV incl. day care incl. therapy	159.50
Z71	Per day ZZP 7VV excl. day care incl. therapy	160.66
Z73	Per day ZZP 7VV incl. day care incl. therapy	190.33
Z81	Per day ZZP 8VV excl. day care incl. therapy	187.26
Z83	Per day ZZP 8VV incl. day care incl. therapy	216.92
Z91	Per day ZZP 9VV excl. day care incl. therapy	132.83
Z93	Per day ZZP 9VV incl. day care incl. therapy	189.14

Table 6: 2009 Dutch daily tariffs for Mental Health Care Packages

Code	Care package	2009 Tariff (€)
Z212	Per day ZZP 1GGZ-B incl. day care excl. therapy	71.06
Z213	Per day ZZP 1GGZ-B incl. day care incl. therapy	92.91
Z222	Per day ZZP 2GGZ-B incl. day care excl. therapy	104.83
Z223	Per day ZZP 2GGZ-B incl. day care incl. therapy	124.73
Z232	Per day ZZP 3GGZ-B incl. day care excl. therapy	114.14
Z233	Per day ZZP 3GGZ-B incl. day care incl. therapy	136.50
Z242	Per day ZZP 4GGZ-B incl. day care excl. therapy	131.59
Z243	Per day ZZP 4GGZ-B incl. day care incl. therapy	155.16
Z252	Per day ZZP 5GGZ-B incl. day care excl. therapy	142.26
Z253	Per day ZZP 5GGZ-B incl. day care incl. therapy	166.28
Z262	Per day ZZP 6GGZ-B incl. day care excl. therapy	193.11
Z263	Per day ZZP 6GGZ-B incl. day care incl. therapy	217.70
Z272	Per day ZZP 7GGZ-B incl. day care excl. therapy	257.57
Z273	Per day ZZP 7GGZ-B incl. day care incl. therapy	296.14
Z310	Per day ZZP 1GGZ-C excl. day care excl. therapy	54.93
Z311	Per day ZZP 1GGZ-C excl. day care incl. therapy	76.79
Z312	Per day ZZP 1GGZ-C incl. day care excl. therapy	54.93
Z313	Per day ZZP 1GGZ-C incl. day care incl. therapy	76.79
Z320	Per day ZZP 2GGZ-C excl. day care excl. therapy	88.72
Z321	Per day ZZP 2GGZ-C excl. day care incl. therapy	108.60
Z322	Per day ZZP 2GGZ-C incl. day care excl. therapy	88.72
Z323	Per day ZZP 2GGZ-C incl. day care incl. therapy	108.60
Z330	Per day ZZP 3GGZ-C excl. day care excl. therapy	98.02
Z331	Per day ZZP 3GGZ-C excl. day care incl. therapy	120.37
Z332	Per day ZZP 3GGZ-C incl. day care excl. therapy	98.02
Z333	Per day ZZP 3GGZ-C incl. day care incl. therapy	120.37
Z340	Per day ZZP 4GGZ-C excl. day care excl. therapy	118.11
Z341	Per day ZZP 4GGZ-C excl. day care incl. therapy	141.68
Z342	Per day ZZP 4GGZ-C incl. day care excl. therapy	118.11
Z343	Per day ZZP 4GGZ-C incl. day care incl. therapy	141.68
Z350	Per day ZZP 5GGZ-C excl. day care excl. therapy	128.78
Z351	Per day ZZP 5GGZ-C excl. day care incl. therapy	152.80
Z352	Per day ZZP 5GGZ-C incl. day care excl. therapy	128.78
Z353	Per day ZZP 5GGZ-C incl. day care incl. therapy	152.80
Z360	Per day ZZP 6GGZ-C excl. day care excl. therapy	162.39
Z361	Per day ZZP 6GGZ-C excl. day care incl. therapy	186.97
Z362	Per day ZZP 6GGZ-C incl. day care excl. therapy	162.39
Z363	Per day ZZP 6GGZ-C incl. day care incl. therapy	186.97

Table 7: Dutch Mental Health Care Packages (ZZP GGZ)

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week: Residential care	Day care	Treatment	Total time	Residence characteristics
ZZP 1B GGZ	Supervised continuing stay (group B)	• psychiatric disorder, mental disorder (including addiction) • disorder necessitates institutional care in safe non-demanding environment • some loss of self-direction, possibly disturbed circadian rhythm • low intensity general daily supervision • support in relation to the cognitive / psychological functions, especially in concentration, memory and thinking, motivation and psychosocial well-being • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition)	General support: yes Personal care: yes Nursing care: yes Average: 4.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 5	When therapist care required. Average: 1.1 hours	Excluding day care: 4.5 to 6.5 hours Including day care: 7.5 to 9.5 hours	Setting: treatment department Night: on demand / sleep watch. Delivery: according to agreement and on demand
ZZP 2B GGZ	Stay with extensive structured supervision (group B)	• psychiatric disorder, mental disorder (including addiction) • disorder necessitates institutional care in safe non-demanding supervised environment • loss of self-direction and disturbed circadian rhythm • clients have problems with social relationships, limited decision making skills, resolution skills and ability to undertake and carry out complex tasks • continuous extensive daily assistance with life skills and all cognitive / psychological functions • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition), though condition may deteriorate and manipulative / reactive behaviour may persist.	General support: yes Personal care: yes Nursing care: yes Average: 9.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 6	When therapist care required. Average: 1.1 hours	Excluding day care: 9.5 to 11.5 hours Including day care: 12.0 to 14.5 hours	Setting: treatment department Night: watch whilst awake / in vicinity. Delivery: continuously in vicinity
ZZP	Stay with	• psychiatric disorder, mental disorder	General	If used:	When	Excluding	Setting: treatment

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
3B GGZ	intensive supervision (group B)	(including addiction) • condition necessitates institutional care in safe non-demanding supervised structured environment • loss of self-direction and a disturbed circadian rhythm • major problems maintaining social relationships and little interest/ capacity for engaging in society • significant limitations in decision making and resolution skills, undertaking simple and complex tasks • intensive and continuous supervision required • daily intensive counselling needed for social skills • intensive support for all cognitive / psychological functions. • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition), with ongoing treatment needed to prevent further relapse • psychiatric symptoms sometimes treatment resistant	support: yes Personal care: yes Nursing care: yes Average: 10.5 hours	Avg. number of half-days: 4 Avg. group size: 5	therapist care required. Average: 1.1 hours	day care: 10.5 to 13.0 hours Including day care: 13.5 to 16.5 hours	department Night: watch whilst awake / in vicinity. Delivery: continuously in vicinity
ZZP 4B GGZ	Stay with intensive supervision and care (group B)	• serious psychiatric disorder, serious mental disorder (including addiction) • disorder necessitates institutional care in protected and supervised environment • intensive support and care due to (somatic) health needs • daily intensive counselling for social skills • loss of self-direction and a disturbed circadian rhythm • major problems maintaining social relationships and unable to participate in society • significant limitations in decision making	General support: yes Personal care: yes Nursing care: yes Average: 13.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 5	When therapist care required. Average: 0.9 hours	Excluding day care: 13.0 to 15.5 hours Including day care: 16.0 to 19.5 hours	Setting: treatment department (possibly secure ward) Night: watch whilst awake / in vicinity. Delivery: continuously in vicinity

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
		and resolution skills and in undertaking simple and complex tasks. • intensive support needs for all cognitive / psychological functions. • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition), with ongoing treatment needed to prevent further relapse • often need help with daily personal care and support for behavioural problems. • treatment aimed at controlling behavioural problems • psychiatric problems generally acute					
ZZP 5B GGZ	Continued stay with intensive counselling and behavioural management (group B)	• serious psychiatric disorder, serious mental disorder (including addiction) • disorder necessitates intensive institutional health care with intensive, secure and structured supervision • daily intensive counselling within highly structured schedule for social skills • poor or non-existent capacity for social relationships and lack decision-making and resolution skills, ability to undertake simple and complex tasks • intensive support for all cognitive / psychological functions • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition), with ongoing treatment needed to prevent further relapse • constant supervision for serious behavioural problems including manipulative, compulsive, destructive and reactive behaviour and verbal aggression; self-harming behaviour possible	General support: yes Personal care: yes Nursing care: yes Average: 15.0 hours	If used: Avg. number of half-days: 5 Avg. group size: 5	When therapist care required. Average: 0.9 hours	Excluding day care: 14.0 to 17.5 hours Including day care: 17.0 to 21.5 hours	Setting: secure long-term treatment department Night: watch whilst awake / in vicinity. Delivery: continuously in vicinity

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
		• psychiatric symptoms difficult to control, and regular medication titration needed.					
ZZP 6B GGZ	Stay with intensive monitoring and intensive nursing care (group B)	• serious psychiatric disorder, serious mental disorder (including addiction), in combination with a somatic disorder, physical and / or mental disabilities • disorder necessitates intensive institutional care with appropriate adaptations (e.g. wheelchair access) and intensive, secure supervision • daily intensive support needed for social skills • no interest in / ability for social participation • lack decision-making and resolution skills and ability to undertake simple and complex tasks • intensive support for all cognitive / psychological functions • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition) but condition may decline and treatment needs may be ongoing or increase • extensive need for assistance with ADL and mobility and behavioural problems • nursing care for physical health problems • psychiatric symptoms difficult to control	General support: yes Personal care: yes Nursing care: yes Average: 19.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 4	When therapist care required. Average: 2.3 hours	Excluding day care: 19.5 to 24.0 hours Including day care: 22.5 to 27.5 hours	Setting: secure long-term treatment department Night: watch whilst awake / in vicinity. Delivery: continuous direct supervision in vicinity 24 hours / day
ZZP 7B GGZ	Secure stay due to extreme behavioural issues with very intensive supervision (group B)	• very serious psychiatric disorder, very serious mental disorder (including addiction) • disorder necessitates intensive institutional treatment in a highly structured and secure environment. • lack all decision-making and resolution skills and unable to undertake simple and complex tasks • unable to maintain social relationships	General support: yes Personal care: yes Nursing care: yes Average: 28.5 hours	If used: Avg. number of half-days: 5 Avg. group size: 3	When therapist care required. Average: 2.3 hours	Excluding day care: 27.5 to 33.5 hours Including day care: 32.5 to 39.5 hours	Setting: secure treatment department Night: watch whilst awake / in vicinity. Delivery: continuous supervision in vicinity

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
		and extreme behaviour problems preclude participation in society • daily intensive counselling needed with highly structured schedule for social skills • intensive support for all cognitive / psychological functions • treatment objective to facilitate discharge to home or to placement in sheltered accommodation or stabilization and maintenance (for chronic condition), with regular medication and treatment reviews required • some help with ADL and frequently require nursing care (incl. medication) • outdoor access only under supervision • extreme behavioural problems: verbal and physical aggression, destructive, manipulative, compulsive, uncontrolled and reactive behaviour. Self-harming likely. Capacity to learn behavioural skills very limited • psychiatric symptoms difficult to control.					
ZZP 1C GGZ	Sheltered living with supervision (group C)	• mild psychiatric disorder, mild mental disorder (including addiction) • disorder necessitates protection and stability in a safe and non-demanding environment • some loss of self-direction and possibly a disturbed circadian rhythm • good mobility, no behavioural problems general daily low-intensity supervision for social skills • limited support for personal care • some support for cognitive / psychological functions • support objective is stabilization and maintenance or development	General support: yes Personal care: yes Nursing care: no Average: 4.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 5	Therapist care not required.	Excluding day care: 3.5 to 5.5 hours Including day care: 6.5 to 8.5 hours	Setting: sheltered / protected live (clustered or group living near or in 'mother house'), small protective housing, offices. Night: watch whilst awake / asleep Delivery: by agreement and on demand
ZZP 2C	Sheltered living with structured	• psychiatric disorder, mental disorder (including addiction)	General support: yes	If used: Avg.	Therapist care not	Excluding day care:	Setting: sheltered / protected living.

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
GGZ	supervision (group C)	• disorder necessitates continuous monitoring in a structured, stable and protected environment • extensive daily assistance with social skills • loss of self-direction and a disturbed circadian rhythm • difficulty maintaining social relationships and participating in society • limited decision-making and resolution skills and ability to undertake complex tasks • extensive support for all cognitive / psychological functions • treatment objective is stabilization and maintenance or development • limited support with personal care and no mobility problems • behavioural problems manageable with continuous supervision	Personal care: yes Nursing care: no Average: 9.5 hours	number of half-days: 4 Avg. group size: 6	required.	8.5 to 10.5 hours Including day care: 11.5 to 13.5 hours	Night: watch whilst awake / in vicinity Delivery: continuous in the vicinity
ZZP 3C GGZ	Sheltered living with intensive supervision (group C)	• psychiatric disorder, mental disorder (including addiction). • disorder necessitates intensive supervision in a protected, stable and structured environment • daily intensive counselling needed for social skills • loss of self-direction and a disturbed circadian rhythm • major problems with maintenance of social relationships and unable/ uninterested in participating in society • significant limitations in the decision-making and resolution skills and undertaking simple and complex tasks • intensive support needs for all cognitive / psychological functions • treatment objective is stabilization and maintenance or development;	General support: yes Personal care: yes Nursing care: no Average: 9.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 5	Therapist care not required.	Excluding day care: 9.5 to 12.5 hours Including day care: 12.5 to 15.0 hours	Setting: sheltered / protected living. Night: watch whilst awake / in vicinity Delivery: continuous in the vicinity

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
		deterioration possible • supervision /encouragement for personal care • behavioural problems manageable with continuous supervision • psychiatric symptoms sometimes difficult to control, and treatment/ medication review may be required.					
ZZP 4C GGZ	Sheltered living with intensive supervision and care (group C)	• complex psychiatric disorder, complex mental disorder (including addiction), possibly in combination with a somatic disorder, physical and / or mental disabilities • disorder necessitates intensive support in a protected and possibly secure environment with appropriate adaptations • daily intensive counselling needed for social skills • loss of self-direction and a disturbed circadian rhythm • major problems with maintenance of social relationships and unable to participate in society. • significant limitations in decision-making and resolution skills and ability to undertake simple and complex tasks • intensive support needs for all cognitive / psychological functions • treatment objective is stabilization and maintenance or development • often need help with daily personal care but not usually for mobility • support needed for behavioural problems • psychiatric problems controlled with medication and intensive support.	General support: yes Personal care: yes Nursing care: yes Average: 13.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 5	Therapist care not required.	Excluding day care: 12.0 to 15.0 hours Including day care: 15.0 to 18.5 hours	Setting: sheltered / protected living (possibly also secure). Night: watch whilst awake / in vicinity Delivery: continuous in the vicinity
ZZP 5C GGZ	Sheltered living with intensive counselling and behavioural	• complex psychiatric disorder, complex mental disorder (including addiction), possibly in combination with a somatic disorder, physical and / or mental	General support: yes Personal care: yes	If used: Avg. number of half-	Therapist care not required.	Excluding day care: 13.5 to 16.5 hours	Setting: sheltered / protected living (possibly also secure). Night: watch whilst awake

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week Residential care	Day care	Treatment	Total time	Residence characteristics
	management (group C)	disabilities. • disorder necessitates intensive care and intensive counselling in a secure and protected environment • support needed for all types of daily tasks • daily intensive counselling needed for social skills, with a highly structured schedule • lack of interest in / ability to maintain social relationships to participate in society • lack decision-making and resolution skills and ability to undertake simple and complex tasks • intensive support needed for all cognitive / psychological functions • treatment objective is stabilization and maintenance or development • help with several aspects of ADL. There may be somatic problems as a result of self-neglect • serious behavioural problems requiring intensive supervision, including manipulative, compulsive, destructive and reactive behaviour; relatively limited learning ability, and verbal aggression; may self harm.	Nursing care: yes Average: 15.0 hours	days: 5 Avg. group size: 5		Including day care: 16.5 to 20.0 hours	/ in vicinity Delivery: continuous in the vicinity
ZZP 6C GGZ	Sheltered living with intensive support and intensive nursing care (group C)	• complex psychiatric disorder, complex mental disorder (including addiction), in combination with somatic disorder, physical and / or mental disabilities. • disorder necessitates intensive supervision and care in secure, structured and protected residential environment • support for tasks in all spheres of life. • daily intensive counselling needed for social skills with a highly structured schedule • lack of interest in / ability to maintain	General support: yes Personal care: yes Nursing care: yes Average: 19.5 hours	If used: Avg. number of half-days: 4 Avg. group size: 4	Therapist care not required.	Excluding day care: 17.5 to 21.5 hours Including day care: 20.5 to 25.0 hours	Setting: 24 hour residential service. Night: watch whilst awake / in vicinity Delivery: continuous in the vicinity available 24 hrs/day

ZZP code	Code Name	Client profile (summary)	Functions and time per client per week				
			Residential care	Day care	Treatment	Total time	Residence characteristics
		social relationships to participate in society • lack decision-making and resolution skills and ability to undertake simple and complex tasks • intensive support for all cognitive / psychological functions • treatment objective stabilization and maintenance, development • extensive need for assistance including with mobility • behavioural problems controlled with support • psychiatric problems controlled with medication and intensive counselling.					

Empirical studies

No empirical study of the new reimbursement system was identified. We understand that research on the implications of the new insurance system is in progress (personal communication, University of Nijmegen).

Economic critique

It has been suggested that recent reforms have increased fragmentation "by separating the responsibility (and financial risk) of acute medical treatment for mental illness from long-term mental care" [62]. In part, this separation reflects the dual financing systems operating in the Netherlands, with compulsory private insurance for medical care on the one hand, and compulsory social insurance for long-term care (AWBZ) on the other. There is a risk that operating these two systems in tandem will provide incentives to cost-shift. For example, medical psychiatric care is, for the first year, covered by private health insurance. If this causes severe financial pressures for the private health plans, they may try to influence providers to reclassify patient need as 'non-medical' so that financial responsibility shifts to the AWBZ. If health plans are unable to exert influence in this way, then providers appear to benefit by increasing activity levels.

The payments made for medical care appear relatively generous and appear to pose little threat to quality of care; conversely, it is not clear that they offer incentives for efficiency. Moreover, the current system of DBC tariffs pays a similar length of stay payment regardless of duration of stay; it therefore does not appear to encourage early discharge, possibly in order to counter the potential incentive to cost-shift. The DBC tariffs reward providers for treating patients, with higher payments for more severe cases (see Table 2). This could incentivise providers to upcode patients, to practise adverse selection, and to deliver medically unnecessary treatments. For non-medical care, detailed specification of the care packages may help standardise and improve the quality of care, although reimbursement appears less generous than under the medical DBC system. Whether this is in fact less generous depends on provider costs in the various settings.

5. United States

Brief description and history

The US healthcare system incorporates private and public sector funding and provision of healthcare services. However, even if services are provided and funded within the public sector, services are rarely free to service users at the point of access and around 46 million (15% of the population) have no insurance cover, with a further 16 million 'underinsured' [37]. Public funding for all healthcare services is around 45% [63], but the corresponding proportion for mental health (also known as 'behavioral health' in the US) is higher at 63% [12](p. 141)[64].

Key features of current mental healthcare system and financing mechanisms

In the 1960s, the US mental healthcare system changed from a centrally planned, state-owned and operated system to one dominated by market forces, albeit whilst retaining a large proportion of public funding [4](p. 48). Enacted in 1965, Medicare (for persons aged 65 and over) and Medicaid (for those on low incomes and/or disability) have together substantially improved access to mental health care [12]. Administered by the Centers for Medicare and Medicaid services (CMS), these insurance-based systems mean that people with mental illness can generally exercise choice over their care, with providers competing for business on the basis of price, quality and convenience [4].

The US mental healthcare system is "in a period of transformation and experimentation" [12](p 157). The goals are to develop an appropriate public framework that includes an appropriate financing structure that reflects mental health needs, prioritising those who are most seriously impaired and promote efficient and effective use of the available resources [12](p. 157). Coverage of mental health needs is a 'patchwork' of private health insurance, Medicaid, Medicare, other public mental health programmes, state mental health authorities and out-of-pocket payments [12](p. 152). There is broad agreement that, for psychiatric hospital care, "money should follow the patient" [12](p. 152).

In 2001, the US spent $104bn on mental health ($85bn) and substance abuse ($19bn), which comprises 7.6% of all healthcare expenditure [12](p. 141). Most mental health expenditure (63% in 2001) is paid for by the public sector, with the major payer being Medicaid (43% of public sector expenditure) [64]. In contrast, the public sector funds less than half (45%) of all healthcare expenditure in the US [63, 64].

Delivery landscape

Medicaid is "the basic backbone" of care for people with serious and persistent mental health [12](p. 147). Funded by both state and federal governments, Medicaid includes mandatory services such as 'basic' hospital and outpatient care. In addition, states may provide optional services including medications, clinical, psychological and occupational therapy, screening and diagnostic services. These services attract a variable subsidy from the federal government [12](p. 153). This approach has "perpetuated an inpatient bias", limiting the opportunities for Medicaid funds to develop community mental health services and support systems. Geographical variations in provision are also apparent [12](p 154).

In 1963, the Community Mental Health Centers Program was introduced to encourage a shift from "total institutions" (public hospitals) towards community-based treatment provided by psychiatrists, psychotherapists, and social workers [4](p. 51). However, the chosen financing approach of using 'seed funding' to build capacity, coupled with a remit to serve a broad patient population meant that these outpatient centres focussed on providing services for lower-cost and less severely ill people. Their impact on shifting the care setting was therefore modest [4](p. 59). Instead, federal legislation to provide income and housing to disabled persons facilitated the use of community support for those with serious mental illness, and reduced the price of care paid by states [4](p. 61).

Cost-sharing

Prior to the introduction of parity legislation in 1996, higher levels of cost-sharing were applied to mental health than to other disease areas. Insurers justified this because demand for mental health services is more responsive to price than is medical care (i.e. there is a higher risk of moral hazard). Restrictions on service use remain greater in mental health than in non-mental health, despite moves by some states to outlaw this practice [4](p. 59). The practice occurs both for private and public payers: for example, employers routinely impose higher cost-sharing requirements and limits on hospital use; and Medicare imposes 50% copay on psychiatric outpatient visits (the copay for medical outpatient visits is 20%) and limits lifetime coverage for psychiatric hospital care to 190 days (there is no corresponding restriction for general hospital care) [64](p. 452).

Carve-outs and carve-ins

Carve-outs and carve-ins have been described as "one of the most important developments in the financing of behavioral health services over the past decade" [65]. Since the advent of managed care in the 1990s, mental health care has increasingly been 'carved out' from other services and organised, managed and provided by private companies [12](p. 150). Medicaid makes frequent use of these companies, which are known as Managed Behavioural Health Organisations [64]. Companies sometimes, although not always, agree to manage the financial risk on a capitated basis [65]. This enables recruitment of specialist networks and discourages adverse selection, because the plan specifically caters for consumers with mental health needs. In addition, caps on utilisation rates, rather than cost-sharing, has been the usual approach adopted by behavioural plans to contain costs [4](p. 67-8). However, the plans represent a barrier to the integration of mental and non-mental health care. 'Carve-ins' occur when health plans insource their mental health care, but the business management of mental and physical health care remains separate. This approach therefore does not address the problem of adverse selection [65]. Nonetheless, carve-ins facilitate more co-ordinated and holistic care plans for patients with highly complex conditions and can address both medical and psychiatric needs [8](pp 15-16).

Use of DRGs

Casemix varies by type of US mental hospitals. Compared with other hospitals, state and country mental hospitals have a relatively higher proportion of admissions for schizophrenia. Similarly, Veterans Affairs mental hospitals treat a high proportion of patients with schizophrenia, but also treat a high proportion of patients with substance abuse. Public mental hospitals treat relatively more patients with more serious and chronic mental illness, and community general hospitals and private psychiatric hospitals treat a larger proportion of patients with affective disorders (i.e. a disorder characterised by a major disturbance of mood e.g. bipolar disorder) [12](p 145-6).

When Medicare was established in 1965, payment for hospital services was based on 'reasonable costs' [44]. Legislation to cap these costs was introduced in 1982, but concerns remained about the growing costs of medical and hospital care [12](p. 144). In 1983, a prospective payments system (PPS) was introduced for acute hospitals: providers were paid a fixed, predetermined payment for an inpatient stay for patients covered by one of 468 diagnostic related groups (DRGs). Initially, psychiatric hospitals and psychiatric units within acute hospitals were exempted from the PPS system because of wide variations in treatment costs for patients with a common diagnosis and the difficulty in reliably predicting cost for a diagnostic group; previous research efforts to develop a psychiatric discharge-based PPS had failed [44]. The Balanced Budget Refinement Act (1999) mandated the development of a per diem PPS for inpatient psychiatry with a requirement of budget neutrality for Medicare [14]. The planned introduction year of 2002 was postponed by three years due to challenges of setting prices that would neither distort the care process nor reduce the quality of care [12](p. 144).

Until 2005, psychiatric hospitals and psychiatric units in general hospitals had been reimbursed by a 'reasonable cost-based payment system' [44]. Phased in over a 3-year

period, the Inpatient Psychiatric Facilities Prospective Payment System (IPF PPS) gradually replaced this 'reasonable cost' system for most hospitals (although Veterans Affairs hospitals are exempt) [64]. Under the IPF PPS, the calculation of per diem payments begins with the federal average routine cost of an inpatient day of psychiatric care, comprising operating cost, capital cost and ancillary costs. This 'Federal per diem base rate' is then adjusted by patient characteristics (age, DRG, comorbidity, use of electroconvulsive therapy) and provider ('facility') characteristics (e.g. rurality, teaching status, local wage rates, existence of a qualifying emergency department and cost-of-living adjustment) [14, 44, 64]. Adjustments for principal diagnosis are applied only for a subsample of DRGs and are made relative to the most frequently reported DRG (i.e. the DRG for psychoses) [44]. The original 15 DRGs that operated from 2005 to 2007 were replaced in October 2007 by the 17 new 'Medicare Severity' DRGs (MS-DRGs). The impact of this change upon the psychiatric scheme is considered to be 'negligible' [66].

To improve patient access and encourage efficiency whilst maintaining the quality of care, payment rates are subject to a plethora of adjustment factors [44]. Variable per diem adjustments reflect the higher cost incurred in the early days of a psychiatric stay; this seeks to remove incentives to delay discharge without good medical grounds [64]. An 'interrupted stay policy' treats readmissions within a short time period (around 3-5 days) as if they were part of a continuous stay. Therefore, the first days of these 'readmissions' are not paid the higher initial per diem rate, but the lower rate that would have been paid had the patient not been discharged. This policy aims to discourage inappropriate premature discharges undertaken for financial gain. The payment system also incorporates three 'budget neutrality adjustments', funded by top slicing around 20% from the per diem base rate [44]. First, outlier payments compensate for variations in staffing intensity (i.e. disproportionate amounts of staff time spent caring for the most difficult patients) [14], and are triggered at a fixed-dollar threshold [44]. Second, stop-loss payments ensure that a provider's total PPS payments are no less than 70% of the payment received under the 'reasonable cost' scheme. This adjustment applied only during the transitional period (2005-2008) and only to existing providers – new providers were paid fully by the IPF PPS [66]. Lastly, 'behavioral offset' adjustments reflect expected changes in provider coding practices (e.g. improved coding of comorbidities) due to the new payment system [44]. Estimates suggest that the per diem approach and adjustment factors explain a high percentage of cost variation (85%). Payments are updated annually to ensure rates "reflect the payment levels intended by the statute" (p. 66975) and adjustment factors will be recalculated when sufficient data are available [44] (p. 66966). An example of a payment calculation is given in Table 8.

In a separate initiative, to reimburse behavioural health clinicians (e.g. clinical psychologists, psychiatric nurses) for their role in the assessment and treatment of *medical* problems, a small number of 'health and behavioral' codes were introduced in 2002. Funded from medical budgets, the codes fund the assessment and treatment of 'biopsychosocial' factors affecting physical health or injury [67]. There is no requirement for a psychiatric diagnosis; rather, reimbursement is for assessment and treatment of patients with a diagnosis of a physical illness. For example, a treatment might be the provision of smoking cessation support for people with coronary heart disease. Whilst Medicare reimburses these codes nationally, Medicaid's coverage of the codes is 'limited' and varies nationally and regionally in terms of which categories are covered and which providers are eligible [67]. As US primary care physicians GPs currently "end up offering mental health services for free", there are plans to develop codes for reimbursing primary care mental health services [68].

Some private health plans use pay-for-performance (P4P) schemes to "link financial compensation to the delivery of safe, effective, evidence-based health care" [45]. Anthem Blue Cross Blue Shield (Virginia) has run a scheme specifically for mental health workers since 1996. Based on data from audits, administrative claims databases and patient satisfaction surveys, the measures seek to be 'clinically meaningful and fair', should be targeted at practices where there is characterised wide variation in provider performance and should be developed in consultation with practitioners. For example, one measure assesses the proportion of patients with at least 10 outpatient visits in the previous 24 months who have received a prescribed antidepressant during that period [45].

Table 8: Illustrative payment calculation
EXAMPLE OF PAYMENT CALCULATION

Type of Adjuster	Example-Related Data	Adjustment Factor
Age	Patient Age =68 years of age	1.10
DRG	Principal Diagnosis--DRG 426 Depressive Neuroses	0.99
Comorbidity	Comorbidity--491.20 Obstructive Chronic Bronchitis without exacerbation Chronic Obstructive Pulmonary Disease Category	------
	Comorbidity--519.02 Mechanical complication of Tracheostomy – Tracheostomy Category	1.06
	Comorbidity--250.53 Diabetes with ophthalmic manifestations Diabetes Category	1.05
	Comorbidity--250.73 Diabetes with peripheral circulatory manifestations Diabetes Category (second diagnosis in same comorbidity category)	-----
ECT Treatments	None received	-----
Variable per diem adjustment	10	------
Patient admitted after IPPS discharge	No	------
Day 1	Facility with a Full-service ED	1.31
Day 2		1.12
Day 3		1.08
Day 4		1.05
Day 5		1.04
Day 6		1.02
Day 7		1.01
Day 8		1.01
Day 9		1.00
Day 10		1.00
Rural Location	Yes	1.17
COLA	No	-----
Teaching	No	-----
Wage Index Factor	Based on IPF location in North Dakota	0.7743
*Federal Per Diem Base Rate		575.95
Labor Portion of Federal Per Diem Base Rate	0.72528 x 575.95	417.73
Non-Labor Portion of the Federal Per Diem Base Rate	0.27472 x 575.95	158.22

*Federal Per Diem Base Rate (found in the addendum) $575.95

Source: [44] (p. 66942) (ED: emergency department ; COLA: Cost-of-living adjustment)

Empirical studies

Planned IPF PPS evaluations

Undertaken prior to the introduction of the Inpatient Psychiatric Facilities Prospective Payment System (IPF PPS), a regulatory impact analysis by the US Department of Health and Human Services assessed the expected budgetary impact on Medicare and redistributive effects between provider types. The system was expected to reduce the income of psychiatric units (which are part of a hospital, and typically treat higher complexity cases) and increase the income of for-profit, not-for profit and public hospitals. Plans to update the regression analysis used to identify cost drivers will be undertaken when sufficient data are available, and per diem rates recalculated to ensure the requirement of budget neutrality is met. Pilots for the introduction of a casemix assessment tool were also planned [44]. We identified no reports on these planned evaluations, but findings from several studies of other US payment systems for mental health are reported below.

RAND Health Insurance Experiment

Undertaken over a 15-year period, the RAND Health Insurance Experiment (HIE) randomised 7000 working-aged adults to insurance plans with different cost-sharing obligations [12](p. 148). Importantly, the HIE sample underrepresented those with serious mental illness. The key finding of the trial was that 'modest' cost sharing reduced use of services with negligible effects on health for the average person. [10] Demand for outpatient mental health visits was found to be more responsive to price than other types of medical care; factors affecting use

[10] http://www.rand.org/health/projects/hie/

included mental health status, insurance plan, educational level and age (higher use by better educated, or younger, individuals). One arm of the HIE trial was a prepaid group practice. Prepaid group practices include a primary care physician, who acts as gatekeeper for hospital referrals and a mix of medical and nonmedical staff. HMOs commonly use prepayment plans for psychiatric care [12](p. 149). Compared with the 'free care' fee-for-service experimental group, admissions were 40% lower and expenditures were almost 30% less, despite the absence of financial barriers for patients in both groups [12](p. 150); this suggests that providers were influencing access (i.e. a supply-side effect). However, outcomes for sicker and poorer patients were worse in the prepaid group.

Evaluation of nursing homes

State Medicaid programmes vary in the way they reimburse nursing homes [15]. In some states, reimbursement is directly linked to reported casemix, potentially providing a financial incentive to 'upcode' patient severity. However, data from the same source, the Minimum Data Set (MDS), are also used for quality monitoring and are used to derive some of the quality indicators used by the public to inform choice of nursing home. For example, incidence of cognitive impairment is used to determine reimbursement but is also a quality indicator. This provides conflicting incentives for reporting of mental health symptoms. Bellows and Halpin (2008) conducted a multilevel regression analysis of reimbursement in 13,000 US nursing homes, comparing reported casemix in states where reimbursement was linked to casemix and those where it was not. The study found that MDS casemix reimbursement had a statistically significant positive impact on four mental health indicators that were also used to determine reimbursement. The effect ranged from a 9% increase (for reported incidence of cognitive impairment) to a 49% increase (for the prevalence of depression symptoms). However, there was no association between the use of casemix reimbursement and four comparator indicators that were not used to determine reimbursement. Therefore, casemix reimbursement appears to influence reporting of mental health symptoms. A possible explanation for this finding is that casemix reimbursement improves data accuracy, but upcoding is an alternative interpretation. The authors caution against the proposed introduction of a pay-for-performance scheme that rewards achievement on quality indicators, arguing that this could disincentivise the recognition and documentation of mental disorders which are an important precursor to improving the quality of care [15].

Economic critique

The US Inpatient Psychiatric Facilities Prospective Payment System (IPF PPS) has recently been implemented for psychiatric care and, from January 2009, all eligible psychiatric providers will be fully funded for Medicare patients under this system. It appears that there has been – as yet – no corresponding reform of payment systems for non-acute psychiatric care, despite evidence that reimbursement systems for community care are inadequate [67-69]. There is therefore a risk that the new IPF system could distort care pathways, encouraging a shift towards institutional care and discouraging integrated care, particularly if, as expected, the system reduces psychiatric units' income and increases income for psychiatric hospitals. Other potential threats include the danger that providers may compromise the quality of care by reducing costs inappropriately, 'upcode' patients to boost profits, or practise adverse selection [22].

To address these risks, the IPF PPS is complex and many adjustments and 'counter incentives' have been built into its design. These are intended to encourage efficiency (by linking payment to average cost), to encourage appropriate duration of care (i.e. discourage premature or delayed discharges), and to ensure the system is budget neutral. In short, lessons from the use of PPS in the acute sector have informed the application of PPS to the psychiatric sector.

Under IPF PPS, each per diem payment is patient-specific. Per diem payments are based on the federal average routine cost of an inpatient day of psychiatric care, comprising operating cost, capital cost and ancillary costs. This should encourage efficiency, since the difference between cost and payment is provider profit or surplus. To ensure payment is fair, and

accounts for unavoidable cost differences, the payment is adjusted for a range of patient and provider characteristics, identified by a cost regression analysis. Per diem payments, although attractive for their high explanatory power for cost variation, could distort length of stay. To counter this, per diem payments are higher for the beginning of an inpatient stay and fall steadily over a 21-day period. There are also rate adjustments for interrupted stays and readmissions which occur within a set period. Recognising that outlier cases can threaten providers' financial stability, the IPF PPS incorporates compensatory payments that are triggered when an annually updated fixed dollar cost threshold is reached. In addition, a minimum income guarantee applied to existing providers for the first three years of the IPF PPS. To address higher payments resulting from improved coding of diagnosis and comorbidities by providers, a 'behavioral offset' adjustment was applied, whereby payments were reduced by 2%. As providers have been informed about this adjustment, they may try to upcode patients in order to claw back this decrement. However, the Department of Health and Human Services reserves the right to recalculate the PPS rate to restore budget neutrality.

However, it is not clear that the risks of adverse selection and inappropriate cost reductions have been addressed. Psychiatric units are part of general hospitals and these units are expected to fare less well under the new payment system. These units also cater for more severe casemix. Currently, the IPF PPS does not adjust for casemix severity. Some compensation will result from comorbidity coding. However, if psychiatric unit payments are systematically lower than costs incurred, then these providers will have to identify efficiency savings, or, if this is not possible, either try to treat a higher proportion of less complex patients (adverse selection), or reduce the quality of care, for example by changing client-staff ratios or reducing interventions. The complexity of the payment calculation (see Table 8) apparently makes payments patient- and provider-specific, effectively a daily case payment. This complexity may make it difficult for to assess and test for these potential unintended effects. It is unclear whether or how the Department of Health and Human Services intends to do this.

Discussion

Any system of casemix-based funding comprises a number of key steps including (a) the classification of the groups to be funded; (b) the calculation of the resource implications; and (c) the setting of a tariff for reimbursement of providers. We consider these three elements below in the context of mental health services and in the light of the experience from overseas. Table 9 provides an overview of the mental healthcare funding systems identified and their potential incentives.

The Classification System

The use of Diagnostic related Groups (DRGs) is widespread in activity-based funding mechanisms as a means of classification; in England, Health Resource Groups (HRGs) are used. The groupings are meant to represent similar resource use as well as being clinically meaningful and have proved a useful means of classification over time. Even 'medical' activity-based funding for acute care is not always based purely on diagnosis; instead, particular interventions or inputs are increasingly specified [70]. However, the use of HRGs/DRGs in mental services is particularly problematic: the inadequacy of diagnosis as a basis for predicting resource use is well known, and procedure-based payments may be fairer [71].

A key reason for this is that, on several dimensions, mental health care is more complex than acute care: mental health episodes are more difficult to define; diagnoses are less clear-cut; there is less clinical consensus on optimal care pathways, making cost variations more pronounced; prognosis is more difficult to predict; and interrelationships with physical health are complex, with mental healthcare problems imposing significant costs on the medical healthcare system. Further, externalities (social costs and benefits) commonly impact non-health sectors, making it more difficult to design a payment system that offers appropriate incentives without jeopardising health and non-health budgets.

For these reasons, the appropriate classification system, which can also act as the unit of payment, is much more difficult to define. Our review of international approaches to financing mental health care has shown that diagnosis, whilst not irrelevant, does not play a major part in defining payment. Internationally, three approaches are evident and are detailed below.

1. Abandon attempts to define a patient classification system

The US has rejected the use of DRGs as a payment unit (i.e. per discharge or per episode) for mental health, instead using per diem case payments based on average costs, adjusted by a range of factors including DRG and comorbidity. The latter were introduced to reflect the high prevalence of coexisting physical and psychiatric conditions (besides the principal diagnosis) in people with mental health problems, and may be less relevant in settings where care is configured differently. Payments are made on a per diem basis because this is thought to explain a high proportion of cost variation. The US system already has detailed patient-level claims databases that make this approach more feasible than it might be in other settings. Both in New Zealand and in Australia, attempts to define broad classification systems that covered both inpatient and community care were only partially successful insofar as neither experiment resulted in a system that could be used for funding purposes (although this was not the intention in New Zealand). Both systems incorporated diagnosis as one of several factors informing the taxonomy.

Table 9: Incentives of International Payment Systems for Mental Health

Country (system)	Scope: setting / patient group	Implementation: Classification system	Implementation: Funding system (funding unit if applicable)	Impact on activity	Cost reduction / impact on quality	Specialisation and access	Manipulation and gaming
Australia MH-CASC	Specialised services, in inpatient (acute/non-acute) and community settings All ages	No	No	NA	NA	NA	NA
Canada (Ontario) SCIPP	Inpatient care Adults	Yes	Not yet Payment details unclear: full implications not assessable	Could increase activity levels if care shifted from private sector Lower cost hospitals may expand activity to increase surpluses	Payments to be based on average costs, so could encourage efficiency possibly to the detriment of quality	Possible shifts towards institutional care and away from community care	Mitigated by adjustments for 'service interruption' days and payments varying by length of stay
England Care Pathways and Packages Clusters	Specialist (inpatient, outpatient and community-based) services adults of working age and older people	Ongoing	Not yet Payment details unclear: full implications not assessable	Could increase activity levels for funded services	Potential to improve quality by specifying procedures and improved data collection If tariff based on average costs, providers with high unavoidable costs may be forced to compromise patient care.	Possible shift away from general mental health services	Possible risk of upcoding: depends on structure of payment system (not yet defined)
New Zealand MH-CASC	Inpatient and community care All ages	Yes – benchmarking	No	NA	NA	NA	NA
The Netherlands DBCs	Inpatient medical care All ages	Yes	Yes (DBCs)	Generous remuneration could lead to increased activity / interventions	Appears unlikely	Could increase existing fragmentation of care	Incentives to discharge patients appropriately s or to code accurately appear weak

Country (system)	Scope: setting / patient group	Implementation Classification system	Implementation Funding system (funding unit if applicable)	Impact on activity	Cost reduction / impact on quality	Specialisation and access	Manipulation and gaming
ZZPs	Non-medical care All ages	Yes	Yes (ZZPs: care packages)	Depends on relationship of tariff to provider cost	If tariffs do not cover costs for some providers, could compromise care quality	More holistic approach to care, but does not address acute medical need	Risk that supply of care will not reflect standards paid for.
US IPF PPS	Inpatient psychiatric services All ages	NA	Yes (per diem payments)	Budget neutrality requirement means total activity unlikely to change; redistribution of activity away from psychiatric units and towards specialist hospitals likely	Psychiatric units may be systematically underfunded; detrimental impact on quality possible	Psychiatric hospitals enjoy higher income under IPS PPS; specialisation may increase, encouraging inpatient bias	Multiple checks and balances embodied in system to thwart gaming; however, risk of adverse selection and inappropriate upcoding cannot be ruled out.

2. Use DRGs as a patient classification system, but only for inpatient care

In counties that have pursued the DRG/HRGs route, this approach has focussed on hospital care as this is most easily defined and recorded. For example, the Canadian approach covers only inpatient care. The classification system first allocates patients to broad diagnostic categories; to accommodate patients with no diagnosis, or who have very short stays, two additional categories are available. The taxonomy then subdivides into smaller groups based on clinical characteristics, the phase of the patient pathway and resource use inputs (nursing, non-nursing and total staff costs). This approach has not yet been used for funding, though the intention is that it will be. The Dutch inpatient system of DBCs (Diagnostic Treatment Combinations) incorporates both diagnostic and treatment characteristics. These are paid on a per diem basis, with separate DBC codes for duration of stay. This system is being used to fund care, though no evaluations of its performance were identified.

3. Use alternative patient classification systems for non-medical care

The main drawback of using DRGs only for inpatient care is that it creates a barrier between the financing of different elements of mental health services with the potential to inhibit the strategic shift from one sector to another. However, mental health services pose a major challenge as the package of care is likely to extend well beyond the hospital sector. The use of DRGs for conditions that typically require large inputs from other sectors such as the community is more limited. Both the Australian and New Zealand experiments (which were not subsequently implemented) explored options for using the same classification system for inpatient and community-based care, capturing the full range of different elements of the care package.

The Dutch have attempted to quantify inputs outside the inpatient setting in the form of care packages known as ZZPs, which incorporate client profile, functioning and weekly client hours and care setting characteristics. There are ZZPs for incapacity and dementia, and for other mental illness, but diagnosis does not play a central role in determining ZZP payment.

A major issue is the degree to which the packages are defined according to what is actually delivered or what should be delivered. To a greater degree than other services, there is a view that mental health services may be (a) strongly provider-driven (evidenced by findings from the Australian MH-CASC study and the New Zealand CAOS study); (b) fall far short of best practice because of perception that mental health funding has been constrained. The Dutch response has been to quantify and define care for which reimbursement is made, moving in the direction of a pay-for-performance approach. At the other end of the spectrum, the US system makes little attempt to define inputs.

The English Care Pathways and Packages Clusters classification locates 21 clusters within three clinical ‘superclasses’: organic disease, psychotic disorders and non-psychotic disorders. Although the care clusters are not based on diagnosis, people with similar diagnoses and similar levels of symptom severity are likely to be found within the same cluster. The clusters encompass a holistic approach to patient need, covering both clinical (e.g. physical illness) and non-clinical need (e.g. living conditions, occupation). Compared with the other mental healthcare funding systems identified in the literature review, the English approach appears to have greatest resonance with the Australian and New Zealand experiments, neither of which was ultimately used for funding purposes. Whilst these classification systems, like the Care Pathways and Packages Clusters approach, explicitly recognise the complexities of mental health care and have the potential to encourage integrated care, the criterion for within-class resource homogeneity posed a major challenge to implementation.

Costs

Of the countries we identified that are implementing or operating innovative approaches to mental healthcare funding, none has developed a single system that covers inpatient hospital care and community care.

In each case, resource use data have been collected to inform prices. In Canada, a detailed routine data collection system operates in Ontario, but these data were supplemented by separate exercises to identify staff mix inputs. This system has yet to be implemented as a funding method, although the intention is that it will be. Costings undertaken in the Australian MH-CASC experiment drew on expenditure recorded by study sites, incorporating direct and indirect patient costs and overheads. These were used to derive an aggregate cost for each patient care day, defined as a day on which a patient had one or more contacts with one or more staff members. Per diem costs were then used to build episode costs. Although an underlying 'patient signal' was identified for the episode-based casemix classification, costs driven by 'casemix' were often confounded by the costs driven by provider variations. The approach was not used as a funding mechanism. Similarly, the New Zealand experiment explored the potential for patient characteristics to explain cost variation, but found these had inadequate explanatory power.

Both the Australian and New Zealand approaches used episodes as the unit of analysis. The US Inpatient Psychiatric Facilities Prospective Payment System (IPF PPS) instead uses 'patient days' as these are thought to be superior to episodes for explaining cost variation. Cost data from provider psychiatric provider cost reports (accounting data) and claims data were explored by regression analysis to identify the principal cost drivers within inpatient psychiatry. On the basis of this analysis, national average per diem costs were calculated, covering routine, ancillary, and capital costs, and adjusted for patient characteristics, such as age, DRG (in some cases) and a range of comorbidites. Use of electroconvulsive therapy is the only intervention specified in the costing formula. Recognising that provider-level cost drivers are also important, 'facility' adjustments include rurality, teaching status, local wage rates, existence of a qualifying emergency department and cost-of-living adjustment [14, 44, 64].

The Dutch approach separates funding for medical inpatient care from non-medical care. To assess costs of the former, actual labour, material and capital costs were first collected in 2005 [55]. Costs were found to vary by treatment duration, therapy received and length of stay and these factors have been reflected in the tariffs. Non-medical care is funded by 'care packages' (ZZPs) which specify inputs for particular settings. Therefore, resource use is, in both parts of the Dutch system, an explicit part of the classification system. Effectively, the payment system provides a fixed sum for the provision of specific services in specific settings.

In England, costing exercises are underway to provide empirical evidence on how resource use varies within and between the clusters and to inform the potential for transition from currencies to local or national tariffs [27]. Trusts have adopted a common methodology that separates costs into direct, indirect and overhead costs categories. When costing data are available, the extent of cost variation within and between the clusters will be apparent. Analysis of these data will help identify the nature of these variations, which may take the form of differences either in resource use, or prices or both. However, whilst it seems reasonable to expect that total patient resource use would be similar within the clusters, it is less clear that this would be the case for the specialist service use that is focus for PbR, since this would depend on the availability of non-specialist healthcare resources and on resources outside the healthcare sector (e.g. in addressing occupational need). Furthermore, even if there were consensus on optimal treatment pathways – which is far from clear – differences in service configuration, economies of scale and scope, resource availability and local costs may mean that inputs may vary in practice.

Prices

There are several issues in how to convert costs to price as it is not a simple one-to-one relationship. Tariffs could be derived by inflating tariffs by a fixed percentage above costs, but this ignores unavoidable cost differences between providers that may be better managed through a weighting system as used in the US (see Table 8). Challenges include the methods for dealing with outliers, adjustments for differences in local input prices, other provider characteristics such as Private Finance Initiative (PFI) commitments, and the duration of care covered by the payment unit. Implementation issues must also be addressed, such as the methods for ensuring budget neutrality for the NHS as a whole, methods to minimise the risk of financial instability for mental health providers, and methods to ensure that any redistribution of funds between providers does not have unintended consequences, such as cost-shifting, upon other parts of the healthcare system or non-healthcare sectors.

The way in which price relates to costs depends on the policy aim: do we want to reward low cost providers? To contain costs? To encourage best practice? To shift activity to the community? To align services more closely with societal preferences? Priorities in mental health may differ from those in the acute sector that has been the focus for PbR policy to date. The recent budget statement indicated an expectation of savings amounting to "£500 million per annum [to be achieved] through improved capability and planning capacity in commissioning processes, and improved quality at lower costs through the new tariff pricing system and extension of the tariff into community services and mental health" [72](p. 129). The rationale underpinning this expectation is unclear, as PbR is simply a different mechanism for allocating existing funds and implies neither additional nor reduced total funding. Indeed, if mental health services were to be funded under PbR, this could *protect* mental health funding against pressures to disinvest from the acute sector [1, 48]. Other strengths could include integrating health and social care commissioning, supporting best practice, enhancing choice, and encouraging community or primary care [48]. If PbR were introduced only for psychiatric hospital services, this would risk distorting clinical decisions on admission and discharge [1]. The Care Pathways and Packages Clusters approach addresses this problem by incorporating both hospital-based and community-based care.

Previous research on the incentive effects of PbR highlighted appropriate and inappropriate changes in activity; cost reducing behaviour and the potential impact on quality; specialisation of services and related access issues, and manipulation and gaming behaviours [22]. The incentive effects of PbR in mental health relate to underfunding or misfunding [48]. Possible unintended consequences include cream skimming (adverse selection of lower cost patients), skimping (reducing the quality of care), 'upcoding' (categorising patients into higher-income generating clusters than is clinically warranted) [48] and 'dumping' (referring patients inappropriately to other care settings). The latter effect risks an inefficient substitution between primary (PCT or local authority provision of) care and other settings [49]. The administrative costs of implementing new databases, and the willingness of clinicians to accept the new system are additional potential threats for PbR in mental health [49].

There could also be included unintended effects on the quantity and quality of care [49]. Both over- and under-provision are possible outcomes, and these could undermine purchasers' efforts to control expenditure. During the transition period from block budgeting to a fixed tariff, care must be taken to minimise the risk of financial instability for providers. However, this increased financial risk may also offer commissioners the opportunity to strengthen their role, by improving planning, monitoring, quality regulation and reconfiguration of services [49]. The Sainsbury Centre for Mental Health observed:

To be fully effective, payment by results requires a substantial shift from passive to active commissioning [49]. Whether PCTs have the capacity to take on this enhanced role is less clear.

Recommendations

Recommendation 1: Implement the new funding system gradually

In all countries that have introduced, or considered the introduction of, activity-based funding for mental health, implementation has followed and been informed by experience in the acute care sector. The mental health funding systems covered in this review have – without exception – been introduced gradually (over a period of years), monitored carefully and updated regularly. Risks of financial instability at the provider level have been minimised by progressively moving existing providers from the old funding mechanism to the new one. Experiences in the US, Canada (Ontario), and the Netherlands underscore the need for careful and stepwise implementation, with timetables used to facilitate, support and encourage the process rather than to dictate the pace of change.

England is already pursuing a gradual approach to the implementation of PbR in mental health and the Care Pathways and Packages Clusters approach has been developed in an iterative fashion. First, the currency (clusters) has been developed, refined and is being tested by a small number of providers. Some providers are concurrently undertaking costing exercises on these clusters. The next step will be to begin commissioning using local tariffs. It is still unclear whether a national PbR tariff will be feasible, but if it is to be introduced then carefully designed pilot evaluations would be a sensible first step. These could help assess financial risks for providers and potential efficiency savings at the NHS level. The occurrence of any unintended consequences (e.g. cost-shifting) in other parts of the healthcare system or non-healthcare sectors could also be explored.

Recommendation 2: Consider the use of budget neutrality adjustments and reserve the right to adjust tariff methodology to counter potentially destabilising impacts

The US Medicare psychiatric inpatient payment system was mandated by the Balanced Budget Refinement Act (1999). The Act also required that the new system should be budget neutral. To achieve this, adjustments were made to the tariff in the form of percentage reductions. For example, as improved coding of comorbidities was an expected consequence of the new funding system, a 'behavioral offset' adjustment was made in the form of a 2% reduction to tariff. The US Department of Health and Human Services also reserve the right to adjust the size of this reduction if improvements in coding prove to be greater than anticipated and so jeopardise the requirement for budget neutrality.

Our understanding is that the extension of PbR into mental health is meant to be cost neutral: it implies a change in allocation method, rather than a change in the overall mental health budget. Experience in primary care, where the GP Quality and Outcomes Framework (QOF) resulted in higher-than-expected provider income, may be relevant for mental health. Primary care and mental health specialist care share a similar clinical focus (i.e. on chronic conditions with acute exacerbations) and in both the new funding system involves the introduction of new data reporting systems. Reasons for the large increase in primary care expenditure included a failure to assess baseline activity prior to the introduction of the QOF and the absence of a cap on total provider income. As the intention is to introduce currencies nationally, baseline activity can be assessed to inform expected income distributions and help set the appropriate level for national tariffs. Furthermore, the Department of Health could build regular reviews of adjustment factors into the tariff methodology to mitigate cost pressures upon PCTs.

Recommendation 3: Consider top slicing budgets to maintain financial stability

The US experience suggested that the introduction of a new funding system could have winners and losers. This could potentially destabilise local health economies and/or have financial consequences on other parts of the public sector.

If tariffs for mental health are based on average costs, some providers will experience a drop in income whilst others will see revenues increase. Whilst some of the 'losers' may be able to reduce inefficiencies, adjustments for unavoidable costs at provider level are needed to ensure the payment system is fair and to avoid 'skimping'. The Market Forces Factor adjustment will be even more important than for acute care, since mental health care is relatively more staff-intensive. Phasing in the new system over several years, guaranteeing a minimum percentage income for all providers during this transition phase (in the US, this was set at 70% of income under the old system), and

making appropriate compensation for outlier cases will all help to stabilise provider income. These centrally-administered adjustments could be funded by top slicing the total mental healthcare budget.

Recommendation 4: Consider adjusting payments by length of stay

In the US, length of stay was found to be a major explanatory variable for cost variation and, for this reason, the Americans have opted for a per diem unit of payment. The Ontario system separates length of stay into three parts that vary by their resource intensity: admission phase (days 0 to 5), post-admission phase (days 6 to 730) and long-term phase (more than two years). Both the US and Canadian systems adjust payments for interrupted stays. The Dutch DBC system, which applies only to the first year of care, separates tariffs for length of stay from those for treatment. The Dutch length of stay tariffs depend on underlying provider costs, but it is not clear whether asymmetry of information thwarts payers' ability to validate provider costs (i.e. providers may be able to claim for higher tariffs than are justified by their true costs).

The chronic nature of much mental illness and its unpredictable prognosis means that the choice of payment unit is critical. The US and the Netherlands have linked funding to length of stay, rather than using a simple episode-based approach; this is also the intention in Ontario. Our understanding is that, under the Care Pathways and Packages Clusters approach, costs are to be calculated for each cluster episode defined by review dates. If a unique fixed tariff applies to each cluster, regardless of its position in the treatment pathway, this may fail to adjust for the higher initial cost incurred in the admission phase. For example, cluster 8 occurring at the onset of the treatment pathway may be associated with higher costs than cluster 8 occurring at the end of the treatment pathway. However, this needs to be confirmed by empirical evidence from the costing exercises. If cluster costs are found to vary by position in the pathway, then failure to reflect this in the tariff could incentivise inappropriate admission and discharge behaviours.

Recommendation 5: Use the classification system to help standardise and improve the quality of care

The US has not developed a patient classification system, instead using per diem payments based on national average costs that are then adjusted to reflect patient and provider characteristics. The Netherlands and Canada (Ontario) have each developed psychiatric classification systems. In the Netherlands, the DBCs used for inpatient medical care combine diagnostic and treatment specifications. These payment units are focussed and well-defined. To complement this approach, care packages (ZZPs) have been developed to address broad patient need, covering psychological problems, functioning, cognitive and behavioural problems. Like the DBCs, ZZPs specify staff inputs, but also specify setting characteristics. In Ontario (Canada), the focus is on inpatient care only. Like the Dutch system, the Ontario approach specifies both diagnosis and staff input although interventions are less explicit than the Dutch DBCs. The US system, although not based on DRGs, adjusts payment for a range of factors including staffing intensity.

The Care Pathways and Packages Clusters classification system addresses both clinical and non-clinical needs. Care pathways have been mapped, although the degree of clinical consensus for these is unclear. Nonetheless, they offer a starting point from which to develop consensus. The English approach will require a more systematic approach to data collection and reporting. This offers an opportunity to collect additional data on resource use and process or outcome measures that can help evaluate quality and cost-effectiveness [1], and so inform the debate on what constitutes best clinical practice. Over time, it may be possible to introduce Pay-for-Performance (P4P) elements into the system, so that good practice is appropriately rewarded. However, P4P using a target based approach can encourage 'tunnel vision', in which non-incentivised activity is displaced [2] and would counteract the holistic approach embodied in the Care Pathways and Packages Clusters.

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Appendix

Search strategies for electronic databases

Ovid MEDLINE(R) 1996 to October Week 4 2008

# ▲	Searches	Results
1	((commission or commissioning or commissioner$) adj6 (mental health or mental healthcare)).ti,ab.	66
2	((commission or commissioning or commissioner$) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
3	((commission or commissioning or commissioner$) adj6 psychiatric).ti,ab.	17
4	1 or 2 or 3	83
5	((purchase$ or purchasing) adj6 (mental health or mental healthcare)).ti,ab.	16
6	((purchase$ or purchasing) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	9
7	((purchase$ or purchasing) adj6 psychiatric).ti,ab.	5
8	5 or 6 or 7	30
9	(financing adj6 (mental health or mental healthcare)).ti,ab.	57
10	(financing adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	8
11	(financing adj6 psychiatric).ti,ab.	12
12	9 or 10 or 11	72
13	(payment$ adj6 (mental health or mental healthcare)).ti,ab.	25
14	(payment$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	6
15	(payment$ adj6 psychiatric).ti,ab.	23
16	13 or 14 or 15	53
17	(funding adj6 (mental health or mental healthcare)).ti,ab.	93
18	(funding adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	4
19	(funding adj6 psychiatric).ti,ab.	21
20	17 or 18 or 19	114
21	(reimbursement$ adj6 (mental health or mental healthcare)).ti,ab.	19
22	(reimbursement$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
23	(reimbursement$ adj6 psychiatric).ti,ab.	10
24	21 or 22 or 23	30
25	(budget$ adj6 (mental health or mental healthcare)).ti,ab.	33
26	(budget$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	1
27	(budget$ adj6 psychiatric).ti,ab.	8
28	25 or 26 or 27	40
29	4 or 8 or 12 or 16 or 20 or 24 or 28	402
30	limit 29 to english language	369
31	limit 30 to yr="2006 - 2008"	90

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations November 03, 2008)

# ▲	Searches	Results
1	((commission or commissioning or commissioner$) adj6 (mental health or mental healthcare)).ti,ab.	9

2	((commission or commissioning or commissioner$) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
3	((commission or commissioning or commissioner$) adj6 psychiatric).ti,ab.	0
4	1 or 2 or 3	9
5	((purchase$ or purchasing) adj6 (mental health or mental healthcare)).ti,ab.	1
6	((purchase$ or purchasing) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
7	((purchase$ or purchasing) adj6 psychiatric).ti,ab.	1
8	5 or 6 or 7	2
9	(financing adj6 (mental health or mental healthcare)).ti,ab.	5
10	(financing adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	1
11	(financing adj6 psychiatric).ti,ab.	2
12	9 or 10 or 11	8
13	(payment$ adj6 (mental health or mental healthcare)).ti,ab.	0
14	(payment$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
15	(payment$ adj6 psychiatric).ti,ab.	1
16	13 or 14 or 15	1
17	(funding adj6 (mental health or mental healthcare)).ti,ab.	16
18	(funding adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
19	(funding adj6 psychiatric).ti,ab.	3
20	17 or 18 or 19	19
21	(reimbursement$ adj6 (mental health or mental healthcare)).ti,ab.	5
22	(reimbursement$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
23	(reimbursement$ adj6 psychiatric).ti,ab.	0
24	21 or 22 or 23	5
25	(budget$ adj6 (mental health or mental healthcare)).ti,ab.	6
26	(budget$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
27	(budget$ adj6 psychiatric).ti,ab.	1
28	25 or 26 or 27	6
29	4 or 8 or 12 or 16 or 20 or 24 or 28	48
30	limit 29 to english language	43
31	limit 30 to yr="2006 - 2008"	37

EMBASE 1996 to 2008 Week 44

# ▲	Searches	Results
1	((commission or commissioning or commissioner$) adj6 (mental health or mental healthcare)).ti,ab.	71
2	((commission or commissioning or commissioner$) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
3	((commission or commissioning or commissioner$) adj6 psychiatric).ti,ab.	14
4	1 or 2 or 3	84
5	((purchase$ or purchasing) adj6 (mental health or mental healthcare)).ti,ab.	16
6	((purchase$ or purchasing) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	7
7	((purchase$ or purchasing) adj6 psychiatric).ti,ab.	3
8	5 or 6 or 7	26

9	(financing adj6 (mental health or mental healthcare)).ti,ab.	60
10	(financing adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	10
11	(financing adj6 psychiatric).ti,ab.	12
12	9 or 10 or 11	77
13	(payment$ adj6 (mental health or mental healthcare)).ti,ab.	23
14	(payment$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	5
15	(payment$ adj6 psychiatric).ti,ab.	17
16	13 or 14 or 15	44
17	(funding adj6 (mental health or mental healthcare)).ti,ab.	88
18	(funding adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
19	(funding adj6 psychiatric).ti,ab.	25
20	17 or 18 or 19	112
21	(reimbursement$ adj6 (mental health or mental healthcare)).ti,ab.	22
22	(reimbursement$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
23	(reimbursement$ adj6 psychiatric).ti,ab.	10
24	21 or 22 or 23	33
25	(budget$ adj6 (mental health or mental healthcare)).ti,ab.	27
26	(budget$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
27	(budget$ adj6 psychiatric).ti,ab.	11
28	25 or 26 or 27	38
29	4 or 8 or 12 or 16 or 20 or 24 or 28	389
30	limit 29 to english language	361
31	limit 30 to yr="2006 - 2008"	97

PsycINFO 2002 to October Week 4 2008

Searches	Results	Search Type
1	((commission or commissioning or commissioner$) adj6 (mental health or mental healthcare)).ti,ab.	98
2	((commission or commissioning or commissioner$) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	1
3	((commission or commissioning or commissioner$) adj6 psychiatric).ti,ab.	6
4	1 or 2 or 3	103
5	((purchase$ or purchasing) adj6 (mental health or mental healthcare)).ti,ab.	3
6	((purchase$ or purchasing) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
7	((purchase$ or purchasing) adj6 psychiatric).ti,ab.	1
8	5 or 6 or 7	6
9	(financing adj6 (mental health or mental healthcare)).ti,ab.	62
10	(financing adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	9
11	(financing adj6 psychiatric).ti,ab.	4
12	9 or 10 or 11	72
13	(payment$ adj6 (mental health or mental healthcare)).ti,ab.	15
14	(payment$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
15	(payment$ adj6 psychiatric).ti,ab.	7

16	13 or 14 or 15	24
17	(funding adj6 (mental health or mental healthcare)).ti,ab.	95
18	(funding adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	3
19	(funding adj6 psychiatric).ti,ab.	24
20	17 or 18 or 19	121
21	(reimbursement$ adj6 (mental health or mental healthcare)).ti,ab.	38
22	(reimbursement$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	4
23	(reimbursement$ adj6 psychiatric).ti,ab.	4
24	21 or 22 or 23	45
25	(budget$ adj6 (mental health or mental healthcare)).ti,ab.	30
26	(budget$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
27	(budget$ adj6 psychiatric).ti,ab.	1
28	25 or 26 or 27	31
29	4 or 8 or 12 or 16 or 20 or 24 or 28	381
30	limit 29 to english language	370
31	limit 30 to yr="2006 - 2008"	148

Econlit 1969 to October 2008

Searches	Results	Search Type
1	((commission or commissioning or commissioner$) adj6 (mental health or mental healthcare)).ti,ab.	0
2	((commission or commissioning or commissioner$) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
3	((commission or commissioning or commissioner$) adj6 psychiatric).ti,ab.	0
4	1 or 2 or 3	0
5	((purchase$ or purchasing) adj6 (mental health or mental healthcare)).ti,ab.	1
6	((purchase$ or purchasing) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
7	((purchase$ or purchasing) adj6 psychiatric).ti,ab.	0
8	5 or 6 or 7	1
9	(financing adj6 (mental health or mental healthcare)).ti,ab.	21
10	(financing adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
11	(financing adj6 psychiatric).ti,ab.	0
12	9 or 10 or 11	21
13	(payment$ adj6 (mental health or mental healthcare)).ti,ab.	4
14	(payment$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	2
15	(payment$ adj6 psychiatric).ti,ab.	8
16	13 or 14 or 15	14
17	(funding adj6 (mental health or mental healthcare)).ti,ab.	4
18	(funding adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
19	(funding adj6 psychiatric).ti,ab.	0
20	17 or 18 or 19	4
21	(reimbursement$ adj6 (mental health or mental healthcare)).ti,ab.	5
22	(reimbursement$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0

23	(reimbursement$ adj6 psychiatric).ti,ab.	1
24	21 or 22 or 23	6
25	(budget$ adj6 (mental health or mental healthcare)).ti,ab.	4
26	(budget$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
27	(budget$ adj6 psychiatric).ti,ab.	0
28	25 or 26 or 27	4
29	4 or 8 or 12 or 16 or 20 or 24 or 28	46
30	limit 29 to yr="2006 - 2009"	5

HMIC Health Management Information Consortium September 2008

# ▲	Searches	Results
1	((commission or commissioning or commissioner$) adj6 (mental health or mental healthcare)).ti,ab.	333
2	((commission or commissioning or commissioner$) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
3	((commission or commissioning or commissioner$) adj6 psychiatric).ti,ab.	24
4	1 or 2 or 3	351
5	((purchase$ or purchasing) adj6 (mental health or mental healthcare)).ti,ab.	97
6	((purchase$ or purchasing) adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
7	((purchase$ or purchasing) adj6 psychiatric).ti,ab.	15
8	5 or 6 or 7	109
9	(financing adj6 (mental health or mental healthcare)).ti,ab.	19
10	(financing adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
11	(financing adj6 psychiatric).ti,ab.	4
12	9 or 10 or 11	23
13	(payment$ adj6 (mental health or mental healthcare)).ti,ab.	42
14	(payment$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
15	(payment$ adj6 psychiatric).ti,ab.	9
16	13 or 14 or 15	51
17	(funding adj6 (mental health or mental healthcare)).ti,ab.	93
18	(funding adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
19	(funding adj6 psychiatric).ti,ab.	28
20	17 or 18 or 19	115
21	(reimbursement$ adj6 (mental health or mental healthcare)).ti,ab.	2
22	(reimbursement$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
23	(reimbursement$ adj6 psychiatric).ti,ab.	0
24	21 or 22 or 23	2
25	(budget$ adj6 (mental health or mental healthcare)).ti,ab.	37
26	(budget$ adj6 (behavio?ral health or behavio?ral healthcare)).ti,ab.	0
27	(budget$ adj6 psychiatric).ti,ab.	2
28	25 or 26 or 27	39
29	4 or 8 or 12 or 16 or 20 or 24 or 28	655
30	limit 29 to yr="2006 - 2008"	101
31	from 30 keep 1-101	101

Web strategies

World Health Organization: Internet http://www.who.int/mental_health/en/
The WHO website was scanned for overview and policy documents on mental health commissioning on 29 October 2008. Details of one potentially relevant document were downloaded for consideration by the reviewer.

WHO Regional Office for Europe: Internet http://www.euro.who.int/mentalhealth
The WHO Regional Office for Europe website was scanned for overview and policy documents on mental health commissioning on 10 November 2008. Details of ten potentially relevant documents were downloaded for consideration by the reviewer.

Mental Health Economics European Network (MHEEN), Phase II
http://www.lse.ac.uk/collections/PSSRU/researchAndProjects/mheen.htm
The MHEEN web page was scanned for overview and policy documents on mental health commissioning on 11 November 2008. Details of seven potentially relevant documents were downloaded for consideration by the reviewer.

British Library Integrated Catalogue http://catalogue.bl.uk/
The British Library Integrated Catalogue was search on 21 November 2008.
(Words= mental health AND Words= commission? or purchas? or financing or payment? or funding or reimbursement? or budget? and W-year= 2006->2008)
This search identified 34 potentially relevant items. The items were scanned for relevance and one item was added to the Endnote library.
(W-Subjects Index= (mental health services economic*) AND W-year= 2006->2008)
This search identified 21 potentially relevant items. The items were scanned for relevance and two items were added to the Endnote library.
(W-Subjects Index= mental health services finance) AND W-year= 2006->2008)
This search identified 0 items.
(W-Subjects Index= mental health services AND W-Subjects Index= cost* and W-year= 2006->2008)
This search identified 3 potentially relevant items. The items were scanned for relevance but no items were added to the Endnote library.

COPAC http://copac.ac.uk/
COPAC was searched on 24 November 2008.
Search terms: "finance" "2006-2008" "mental health services"
This search identified 16 potentially relevant items. The items were scanned for relevance and two items were added to the Endnote library.
Search terms: "cost" "2006-2008" "mental health services"
This search identified 30 potentially relevant items. The items were scanned for relevance and four items were added to the Endnote library.
Search terms: "economic" "2006-2008" "mental health services"
This search identified 54 potentially relevant items. The items were scanned for relevance and one item was added to the Endnote library