Mental Health Network
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With money in mind

The benefits of liaison psychiatry

Key points

- Liaison psychiatry services can save money as well as improve the health and well-being of patients.
- Liaison psychiatry services are increasingly seen as an essential component of effective care in acute hospitals.
- The RAID service in Birmingham is an approach which has the potential to save very significant amounts of money for the local health economy.

"Improving the quality of treatment and care in health services is a difficult and continuous challenge in itself, but with co-morbidities and complexity increasing at a time of economic austerity, it can appear daunting to say the least. There have been some significant successes in a range of QIPP (Quality, Innovation, Productivity and Prevention) initiatives but more needs to be (and can be) done.

"Liaison psychiatry services are increasingly seen as an essential component of effective care in acute hospitals. Their clinical effectiveness has been well documented, but little has been known up to now about their potential economic impact.

"The RAID service in Birmingham represents an evolution of the liaison model and an approach which undoubtedly improves the quality of care for people with mental ill health in an acute hospital. An independent economic analysis shows that at the same time the approach has the potential to save very significant amounts of money for the local health economy.

"This *Briefing* outlines the benefits that the RAID service has brought in terms of cost savings and improved health and well-being for patients. It will be of particular interest to all those who commission and provide acute hospital and mental health services."

Hugh Griffiths, National Director for Mental Health
Lawrence Moulin, Chair of the National Mental Health SHA Mental Health Leads

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Background

People with a long-term physical illness are three to four times more likely to have a mental illness than a healthy member of the population. The prevalence of mental health conditions is particularly high among acute hospital inpatients.

We know that liaison psychiatry services – which support the mental health needs of patients with co-morbid physical and mental disorders – can improve care, but little has so far been documented about the cost-benefits.

Birmingham and Solihull Mental Health NHS Foundation Trust launched the Rapid Assessment Interface and Discharge (RAID) service at Birmingham City Hospital in December 2009.

The RAID service provides a comprehensive range of mental health services regardless of patient age, presenting complaint, time of presentation or severity, for all adults using the hospital. The service has received accreditation from the Psychiatric Liaison Accreditation Network of the Royal College of Psychiatrists and won a *Health Service Journal* award for innovation in mental health in 2010.

An internal review of RAID has assessed the service from three perspectives: quality of service, response times and cost savings in the local health economy. More recently, the estimates of cost savings have been the subject of an independent economic evaluation.

These studies conclude that the RAID service improves the health and well-being of its patients and represents good value for money.

Liaison psychiatry

Liaison psychiatry services provide mental healthcare to people being treated for physical health conditions in general hospitals. Patients with both mental and physical health problems often have poorer health outcomes and it can be more expensive to treat them. Liaison psychiatry services can improve care and bring cost savings by allowing patients to be discharged earlier if their mental health needs are addressed and by reducing rates of readmission. An effective liaison psychiatry service therefore can improve health and save money.

How liaison psychiatry services help

The development of liaison psychiatry services is relatively recent and is part of a wider response to evidence showing that very high proportions of people with physical health conditions also have co-morbid mental health problems, including 30 to 65 per cent of medical inpatients. This co-morbidity is associated with a number of adverse consequences, including poorer quality of care for the physical condition, reduced adherence to treatment, increased costs and poorer health outcomes. The economic and financial impact of co-morbidity can be very significant. For example, a US study has shown that healthcare costs for people with diabetes and co-morbid depression are almost twice as high as for people with diabetes alone. A UK study found that people with diabetes and co-morbid depression are seven times more likely to take time off work than those with diabetes alone.

So, an effective liaison psychiatry service can promote a range of positive outcomes, including cost savings. Rates of co-morbidity are particularly high among elderly people in general hospitals, where they account for about two thirds of all occupied beds. Up to 60 per cent of these patients have or will develop a mental disorder during their admission, the most common conditions being dementia, depression and delirium.

The availability of liaison psychiatry services remains patchy around the country, with a considerable variation in service models in terms of size, staffing mix, age of patient and type of mental health problem treated, and hospital or community base location.

The benefits of liaison psychiatry

An effective liaison psychiatry service can:

- improve physical and mental health outcomes
- decrease length of stay
- reduce readmissions
- reduce healthcare costs for patients with unexplained symptoms
- reduce psychological distress.

'An effective liaison psychiatry service can promote a range of positive outcomes, including cost savings'

Embedding liaison psychiatry

Liaison psychiatry services are most effective when they are embedded into general hospital work. Mental health staff work closely with general staff to improve rapid detection and treatment of patients with mental health problems. Most services include training and educational components to improve the overall quality of service provision and ensure appropriate guidelines, such as those from NICE, are followed.

A liaison psychiatry team needs to be multidisciplinary. It works best when it includes the skills of nursing, psychiatry, psychological therapy and social work.

The Mental Health Network's *Healthy mind, healthy body* briefing contains a number of case studies from successful liaison psychiatry services from around the UK.

Evaluation of the RAID service

The internal review of RAID was carried out by a research team headed by Professor George Tadros, while the independent economic evaluation was undertaken by Michael Parsonage and Matt Fossey from the Centre for Mental Health, with support from Professor Martin Knapp from the London School of Economics.

The evaluation methodology used in the analysis of cost savings is shown in Box 1.

Box 1. Evaluation methodology

Rather than a randomised clinical trial, the evaluation used a retrospective control, where the outcomes for patients receiving an intervention are compared with the outcomes for comparable patients in the past who did not receive the intervention.

The estimated cost savings are based on an analysis of administrative data on patient admissions and discharges. Data on two groups of patients are used in this analysis. First, a retrospective (pre-RAID) control group, consisting of all emergency admissions over the age of 16, including a mental health diagnosis code admitted between 1 December 2008 and 31 July 2009. Second, an intervention group, consisting of all such admissions between 1 December 2009 and 31 July 2010.

The intervention group comprises two sub-groups. First, the RAID sub-group, consisting of all those patients in the intervention group who were referred to and directly managed by the RAID service. Second, the RAID-influence sub-group, covering all other patients in the intervention group, with a RAID influence being claimed because the RAID team provided training and support to the acute hospital staff who managed these patients during the study period. Training was provided in formal teaching sessions and informal hands-on training alongside the usual clinical case management.

The numbers of patients in the various groups were:

- pre-RAID control group: 2,873
- intervention group: 3,540; including RAID sub-group: 886
- RAID-influence sub-group: 2,654.

It is important to note that the intervention group is some 23 per cent larger than the pre-RAID control group, supporting an argument that the presence of RAID has substantially increased knowledge and awareness of mental health difficulties in acute inpatients and therefore the diagnosis of such conditions.

The data on patient admissions and discharges were analysed in various ways to assess the impact of RAID on lengths of inpatient stay and rates of readmission.

Benefits for patients

The RAID service has been effective in putting patients with mental health problems on to more appropriate care pathways.

> 'RAID is good value for money, particularly as the benefits are over and above any improvements in health and quality of life'

This should result in better health outcomes and, over time, lead to lower healthcare costs.

There was a significant increase in the overall number of acute inpatients identified with mental health problems. While this was beneficial for the patients concerned, there was some resultant increase in the demand for other services.

Further analysis is needed to establish how much of these increases can be attributed to RAID referrals. However, data from one primary care trust showed a significant rise in the number of contacts with some secondary mental health services, particularly home treatment and assertive outreach teams.

An important role for RAID is to signpost and refer patients to support services in the community after they leave hospital.

Of the patients seen by RAID between December 2009 and September 2010, 916 were signposted to services in the community, most (71.2 per cent) to their GP. A similar number were formally referred to community services after discharge, including 252 to community mental health teams, 207 to home treatment teams and 139 to a RAID follow-up clinic.

Cost savings

The analysis of cost savings in the internal review focused on the ability of the service to promote quicker discharge from hospital and fewer readmissions, resulting in reduced numbers of inpatient bed-days.

Based on a comparison of lengths of stays and rates of readmission in similar groups of patients before and after RAID was introduced in December 2009, in place of a previous, smaller liaison service, the internal review estimated that cost savings are in the range £3.4 to £9.5 million a year. Most of these savings come from reduced bed use among elderly patients.

To allow for uncertainty in these estimates, the independent economic evaluation undertook a cost-benefit analysis of RAID based on very conservative assumptions, seeking to address the question of whether the service is demonstrably good value for money even if its claimed benefits are put at the bottom end of a plausible range. This should provide decision-makers in Birmingham and elsewhere with a sound starting point for future planning.

The analysis in the independent evaluation indicates that the incremental cost of RAID, i.e. the additional cost of the service compared with its predecessor, is around £0.8 million a year. In comparison, it is estimated on conservative assumptions that RAID generates incremental benefits in terms of reduced bed-use valued at £3.55 million a year, implying a benefit:cost ratio of more than 4:1.

It is thus concluded that the RAID service is good value for money, particularly as the benefits are over and above any improvements in health and quality of life, which are the fundamental justifications for health spending. Unlike most healthcare interventions, RAID actually saves money as well as improving the health and well-being of its patients.

Other benefits

The cost savings identified above come from the reduction in acute inpatient bed days. Other likely benefits are outlined below.

Diversion at A&E

Over 40 per cent of referrals to the RAID service came from A&E. It is possible that interventions by the RAID service at this point may have prevented some inpatient admissions.

Elective admissions

The estimated costs are derived entirely from the number of *emergency* admissions to Birmingham City Hospital, but it is possible that the RAID team also saw some *elective* patients, with a potential impact on length of stay and readmission rates.

Discharge destination

Among all elderly inpatients, 67 per cent of those seen by the RAID service were discharged to their own homes, compared with only 34 per cent in the retrospective control group. Assuming that those discharged to other destinations went mainly

to residential or nursing homes, there were likely significant cost savings in the social care sector.

Next steps

The independent evaluation report argued that more in-depth study could:

- help identify the distribution of savings
- provide more detailed information on post-discharge pathways
- analyse the benefits of targeting resources on elderly people
- explore the impact of training acute hospital staff in mental health issues
- look at the impact of interventions in A&E.

The distribution of benefits

The cost savings generated by RAID are shared between Birmingham City Hospital and local commissioners in ways that depend on the detailed workings of Payment by Results. Re-analysis of the patient admission and discharge data may be helpful to clarify the nature and scale of these budgetary impacts which are of considerable importance to local stakeholders.

Post-discharge pathways

The RAID evaluation focused on cost savings within Birmingham City Hospital, leaving to one side the resource implications of possible changes in post-discharge pathways. This is of some importance, not least because it is unclear whether the net effect on costs was positive, for example because fewer elderly people were discharged to institutional care, or negative, for example because of increased use of secondary mental health services.

Service design for elderly people

A notable feature of the RAID evaluation is that elderly people represent only about a third of the patient samples but account for around 90 per cent of total benefits in terms of reduced bed use. Further analysis could help establish whether or not the economic case for RAID could be strengthened by targeting resources more closely on this group.

Training

Another interesting finding of the RAID evaluation is that training acute hospital staff in mental health issues appears to have a bigger impact on length of inpatient stay (though not on readmissions) than the direct management of patients by the RAID service. This has possible implications for service design that merit further investigation.

Impact in A&E

Over 40 per cent of referrals to the RAID service come from A&E, but no information has been collected on the impact of interventions at this point, which may include the prevention of some inpatient admissions. Further information on the role of RAID in A&E would be valuable.

Mental Health Network viewpoint

Improving the quality of treatment and care is a difficult challenge for all health services, particularly where there is complexity due to co-morbidity. Many liaison psychiatry services are in operation across the country, and a range of literature is available to demonstrate their clinical effectiveness. But little has been known up to now about their potential economic impact. The RAID service in Birmingham represents an evolution of the liaison psychiatry model and an approach which undoubtedly improves the quality of care and outcomes for people with mental ill health in an acute hospital, as well as the potential to save very significant amounts of money for the local health economy.

The Government's 2011 mental health strategy, *No health without mental health*, recognises this and emphasises the importance of improving services at the interface between mental and physical health. Liaison psychiatry services should be seen as an integral part of the services provided in acute hospitals.

The findings should be of particular interest to all those who provide and commission acute hospital and mental health services. Commissioners should consider the value to be gained from taking a more integrated approach to commissioning physical and mental health services.

For more information on the issues covered in this *Briefing*, contact steve.shrubb@nhsconfed.org

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Further information

Economic evaluation of a liaison psychiatry service, by Michael Parsonage and Matt Fossey.
Available at www.centreformentalhealth.org.uk

Healthy mind, healthy body. Mental Health Network briefing, April 2009.
Available at: www.nhsconfed.org/Publications

The Mental Health Network

The Mental Health Network was established as part of the NHS Confederation to provide a distinct voice for mental health and learning disability service providers.

We aim to improve the system for the public, patients and staff by raising the profile of mental health issues and increasing the influence of mental health and disability providers.

For further details about the work of the Mental Health Network, visit **www.nhsconfed.org/mhn** or email **mentalhealthnetwork@nhsconfed.org**

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The NHS Confederation
29 Bressenden Place London SW1E 5DD
Tel 020 7074 3200 Fax 0844 744 4319
Email enquiries@nhsconfed.org
www.nhsconfed.org