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REVIEW

The Rapid Assessment Interface and Discharge service and its implications for patients with dementia

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Abstract: The rising prevalence of dementia will have an effect on acute care hospitals around the world. At present, around 40% of patients older than 70 years with acute medical admissions have dementia, but only half of these patients have been diagnosed. Patients with dementia have poorer health outcomes, longer hospital stays, and higher rates of readmissions and institutionalization. Worldwide, health care budgets are severely constrained. National Institute for Health and Care Excellence (NICE) has listed ten quality standards for supporting people in living well with dementia. NICE resource implications and commissioning support to implement these guidelines and improve dementia services have been recently published. Although most of the frail elderly patients with dementia are cared for by geriatricians, obstacles to making a diagnosis and to the management of dementia have been recognized. To provide a timely diagnosis of dementia, better care in acute hospital settings, and continuity of care in the community, services integrating all these elements are warranted. Extra resources also will be required for intermediate, palliative care, and mental health liaison services for people with dementia. The Birmingham Rapid Assessment Interface and Discharge service model uses a multiskilled team that provides comprehensive assessment of a person's physical and psychological well-being in a general hospital setting. It has been shown to be an effective model in terms of reducing both length of stay and avoiding readmission. The aim of this review is to discuss the implications of the Rapid Assessment Interface and Discharge model in people with dementia and to critically compare this model with similar published service provisions.

Keywords: comorbidity, aged, hospitals, dementia, cost

Introduction

Many people with long-term physical health conditions also have mental health problems.[1] These issues can further interact with medical comorbidities and result in reduced quality of life, cardiovascular risk, frailty, and increased mortality.[2] Both higher costs and poorer health outcomes have been reported with the increasing medical comorbidity burden for depression,[3–5] delirium,[6] and dementia.[7–9]

Worldwide, populations are aging, and the number of patients aged 80 years or older is growing faster than any younger segment of the older population.[10] In the United Kingdom, older people occupy two-thirds of National Health Service (NHS) beds, and 60% of older people[11] admitted to general hospital will have or develop a mental disorder. There are about 750,000 people in the United Kingdom with dementia, and this number is expected to double during the next 30 years. This will have a wide effect on health care and social care costs.

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Our objective was to review recent published evidence on the Rapid Assessment Interface and Discharge (RAID) service model, examining the strengths and weakness of the service design, outcome, and effectiveness. We also review the existing evidence on other psychiatry liaison services in dementia care.

Older people's liaison psychiatry services

The traditional acute medical wards have limited access to a staff team with psychiatric expertise or specialist training, and hence, mental illness (particularly dementia) in older people can sometimes go undetected and untreated. Guidelines for the development of liaison mental health services for older people recommend that acute hospital trusts, older peoples' mental health services, and commissioners of health care and social care work together to improve outcomes of older people with mental health problems who are in general hospitals.[11] The commissioning guide published by the National Institute for Health and Care Excellence (NICE) details the potential resource implications for commissioners of dementia care.[12]

Active psychiatry liaison intervention in older people with hip fracture has been shown to reduce length of stay and provide substantial cost savings.[13] Dementia was significantly overrepresented in patients with hip fracture,[14] and therefore an effective psychiatry liaison service supporting the medical team and diagnosing dementia, as well as improving the quality of dementia care and providing continuing care in the community, is essential.

The National Service Framework for older people was published in 2001 – standard seven aims to promote good mental health in older people and to treat and support those older people with dementia.[15] The framework recommended that the NHS and local councils review their processes of early detection and diagnosis and their assessment care and treatment plans, including arrangements for health promotion. However, there has been slow progress and little effect on people suffering with dementia and their carers. There is a nationwide need to launch the Welsh concept of a dementia-friendly community. This concept features as one of the main drivers of the National Dementia Strategy (NDS) policy.[16]

RAID service

NHS is the publicly funded health care system of the United Kingdom. There are a number of regional NHS trusts, including primary care trusts, foundation trusts, and mental health services trusts or health boards, which provide various services. Integrated care is essential to meeting the needs of the aging population, transforming the way care is provided for people with long-term conditions, and enabling people with complex needs to live healthy, fulfilling, and independent lives.[17]

The RAID model is a modern example of moving toward this goal. It is a specialist, multidisciplinary, mental health service in a large, acute, city hospital in Birmingham in the United Kingdom.[18] The RAID service is provided by the Birmingham and Solihull Mental Health NHS Foundation Trust and commissioned jointly by Heart of Birmingham and Sandwell Primary Care Trusts. The service was launched in December 2009 as a pilot project to offer a comprehensive range of mental health specialties. It is a multiskilled liaison psychiatry service that includes nurses, adult psychiatrists, psychologists, specialists in mental disorders of older people, and physician assistants who are experienced at working in mental health. The team works closely with other hospital psychologists and alcohol practitioners, as well as the acute hospital clinicians, to provide a comprehensive assessment of a person's physical and psychological well-being. The RAID service is for people older than 16 years who have mental health or substance misuse needs who access accident and emergency (A&E) departments or acute hospitals in Birmingham.[19]

The service provides a single point of contact for the acute hospitals and A&E 24 hours a day, 7 days a week. A rapid response is offered, within an hour for A&E and within 24 hours for other hospital departments. Advice is given on a wide range of issues, including alcohol problems, detoxification, substance misuse treatment, and assessment of care needs of older people with mental health problems. In addition, team liaison supports the early detection of mental health problems to enable rapid and appropriate intervention. The team can also provide continuity of care for people who are already known to mental health services and can help with discharge planning, general advice, and support.[19]

The RAID service is an innovative new approach in mental health that has not only resulted in holistic patient care but has also shown improved outcome and significant savings by avoiding unnecessary admissions onto busy medical wards.[20]

Implications of the RAID service for older patients with dementia

Evidence suggests that investing in services for people at an earlier point in the care pathway can improve the well-being of people with dementia and their carers and can prevent

crises and unplanned admission to acute hospital beds, in addition to delaying the need for institutional care.[21] The NDS aims to increase the awareness of dementia, ensuring early diagnosis and intervention, as well as improving the quality of care for people with dementia and their carers.[16] The NDS has identified four priority areas: good-quality early diagnosis and intervention for all, improved quality of care in general hospitals, living well with dementia in care homes, and reduced use of antipsychotic medications.

Improved quality of care

Two-thirds of beds in general hospitals are occupied by older people, most of whom have multiple and complex health problems.[11] Two-thirds of these patients either have or are at risk of developing a mental disorder during their admission, the most common conditions being delirium, depression, and dementia. The prevalence of dementia in acute hospitals was reported as 48% in men and 75% in women older than 90 years.[8] In patients in their 70s or older, delirium has been reported in 27%, and 8%–32% of patients admitted to acute hospitals were found to be depressed.[21] People with dementia and concurrent physical conditions have poor-quality care, higher mortality, and worse clinical outcomes than people with the same conditions without dementia.[7,8,23,24] The hazard ratio of death increased from 1.82 for the very mildly demented to 9.52 for severely demented patients.[9]

The RAID service has shown quality improvement in the care of older people by reducing their length of stay, avoiding their admission to acute hospital beds, and discharging them in increased numbers back to their original place of residence, rather than an institution or care home. In addition, the RAID model has been shown to reduce the readmission rate after discharge by 65% in comparison with a pre-RAID group.[25]

The RAID service has received special interest from the Department of Health and NHS Confederation for achieving savings by improved quality of mental health in acute hospitals. The service has received accreditation from the Psychiatric Liaison Accreditation Network of the Royal College of Psychiatrists and also won a prestigious Health Service Journal Award for innovation in mental health in 2010.[20] Patients and providers have welcomed the concept of the RAID service having an effect on the health and quality of life of patients.

Patient safety and early diagnosis

Dementia is particularly challenging in general hospitals, as it is under-recognized, and 42%–50% of people older than 70 years admitted as an emergency case are cognitively impaired.[8,22] Improving the rate of early diagnosis is a cornerstone of dementia care and safeguarding patients. Without appropriate diagnosis, effective treatment and timely support cannot be accessed by the older person.

The RAID service puts an emphasis on diversion and discharge from A&E and on facilitating early, safe, and supportive discharge from general medical wards. Older people accounted for 23% of total referrals received by the RAID service, and 60% were from a general medical ward.[20] Cognitive impairment and dementia represented 18% of RAID referrals.[25]

Patients were given follow-up support through their general practitioner, community services (including mental health), home treatment teams, and a RAID service follow-up clinic. The involvement of the RAID service led to an increase in the detection and diagnosis of dementia (an increase of 22% was seen in the coding of dementia).[25] Dementia is an independent risk factor for falling, and increased detection of dementia could be helpful in undertaking prevention strategies for in-patient falls.

In addition, people with dementia all experience behavioral and psychological symptoms at some point, which can often be prevented or managed without medication. However, people with dementia have frequently been prescribed antipsychotic drugs as a first resort, and it has been estimated that around two-thirds of these prescriptions are inappropriate. The evidence suggests that these drugs have limited positive effects in treating these symptoms for 70% of patients but can cause significant harm, including increased mortality and stroke. It is a national priority in England and Wales to reduce the use of antipsychotic drugs for people with dementia.[26] The psychiatric liaison service can support the management of behavioral and psychological symptoms in patients with dementia; an audit of antipsychotic prescriptions for people with dementia has showed a 52% reduction in antipsychotic prescriptions for people with dementia between 2008 and 2011.[27] The RAID service could have contributed to reduced antipsychotic prescriptions, but this was not actually studied as part of the evaluation.

Cost benefit

The Kings Fund 2012 report suggested there was a 45% rise in total health cost for each person with a long-term condition and comorbid mental health problem.[1] The report also has shown that 12%–18% of all NHS expenditures on long-term conditions are linked to poor mental health and well-being.[1]

The total cost of dementia care in 2007 for England was estimated to be GB£14.8 billion, and this amount is projected to rise to £34.8 billion by 2026, for an increase of 135%.[11] The Alzheimer's Society has reported that people with dementia who are older than 65 years occupy one quarter of hospital beds at any one time, and the excess cost is estimated to be £6 million to the average general hospital.[28]

The cost-benefit of the RAID service is centered on the ability of the service to promote faster discharge from hospital and fewer readmissions, resulting in reduced numbers of in-patient bed-days. The service has been economically evaluated by the London School of Economics,[20] which noted that the mean length of stay was reduced by 3.2 days, and 14,000 bed-days have been saved over the course of 12 months. The estimated cost savings before and after introduction of the RAID service are in the range of £3.4–£9.5 million a year.[20]

The RAID evaluation showed a total savings of 43–64 beds per day; most of these savings have come from reduced bed use and lower readmission rates among older patients, who formed one-third of total referrals.[25] The RAID service has also shown it can reduce the mean length of stay for patients with dementia by at least 7.5 days per admission.

The elderly care wards provided the majority of bed-day savings by reducing length of stay and preventing readmissions; therefore, the hospital was able to close down 60 beds by incorporating the reduction in bed use.[25] The additional cost of the RAID service was around £0.8 million a year, but it 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.[20]

Teaching and training

The training of both psychiatry staff and general hospital staff is essential in the detection and basic management of common psychiatric conditions, particularly dementia and delirium. The NDS and national policies recommend that all staff working with older people in the health, social care, and voluntary sectors have access to dementia care training.[16,29] Most nurses working with people with dementia want more training and support to help them deliver the best possible care: 33% of nurses had received some training, but 54% of nursing staff had not received any preregistration training in dementia.[29] This startling lack of dementia education and training can lead to health professionals feeling unskilled and stressed in dealing with patients with dementia, putting the patients at increased clinical risk.[29] The National Audit Office reported that over half of the community mental health teams felt that acute hospital nurses were inadequately trained in dementia.[30] This perception among nurses working with people with dementia was reflected in the fact that 85% of the nurses also felt they do not have the required knowledge and skills.[31] There is existing evidence that staff training helps to eliminate discrimination of those with mental health problems,[32] and some suggest that regular teaching of geriatric giants, including dementia and delirium, to general nurses reduces their stress level.[33]

The RAID service provides both formal and informal training on mental health difficulties, which included 2 days training on dementia, depression, delirium, and dignity, which was repeated every 3 months to acute staff throughout the hospital. In addition, other mental health issues were discussed in a weekly teaching session. The RAID influence group (referrals not directly seen by the RAID service but managed by acute colleagues who had received training/support from it) showed improvement in both length of in-patient stays and avoiding readmission, suggesting staff training is helpful. In addition, the RAID service provided training and education to 27% of patients or carers or family of those diagnosed with dementia, and 60% of patients were either given information on dementia or directly referred onto other services in the community.

Carer and staff satisfaction

A national study of older people's mental health services found that carers expressed general dissatisfaction with the care their relatives received on the general wards in acute hospitals.[34] In particular, they referred to the staff in hospitals not being trained or equipped to deal with patients with mental health problems, especially dementia.

The RAID evaluation suggested that the staff felt more confident with training and service provision; however, there was no stated formal evaluation.

Accessibility

Delay in psychiatric consultations continues to be associated with longer lengths of stay in the general hospital.[35] The RAID data evaluation showed that patients were reviewed, on average, within 24 minutes (A&E referral) and 16 hours (ward referral), and targets in these areas were met in 91% and 89% of cases, respectively.[25]

Discussion

In the United Kingdom, service models for the provision of mental health input on physical health care wards are variable. Traditionally, the dominant model has been one

of consultation that relies on the medical staff to not only detect but also appropriately refer relevant patients. This is a reactive model, present in 73% of services according to a UK survey in 2002.[36] This survey further indicated that 71% of participants considered the service they delivered to be poor.[36] The National Service Framework for England, published in 2001, highlighted disparity of care for the elderly,[15] yet 3 years later, Tucker et al were only able to report there was "some suggestion that liaison services were developing."[37] A strikingly disappointing comment in the Royal College of Psychiatrists document *Who Cares Wins* states that where liaison mental health services for older people have developed, it is usually the result of a local champion with a particular interest, rather than the result of strategic planning.[11] *Who Cares Wins*, dating from 2005, sets out the range of service models and illustrates how a proactive liaison model has more advantages, and it urges the standard consultation model services to shift to a liaison approach.[11]

The comprehensive geriatric assessment, with an emphasis on cognitive assessment in older people admitted to an acute hospital, has shown good outcome.[38] Despite this knowledge, the 2011 National Audit of Dementia Care showed a wide variation in the quality and approach of care for people with dementia who were in general hospitals.[39]

The provision of specialist liaison psychiatrists or mental health liaison nurses with time dedicated to this service represents a shift toward more focused support. However, a nurse-led mental health liaison service for medically ill older people was not effective in reducing general psychiatric morbidity.[40]

Psychiatrists have sessions for general hospital work, and nurses are often based in the hospital. Models based on more integrated multidisciplinary working include the shared care ward, in which patients with complicated physical and mental health needs are managed by both relevant teams. There are increasing rates of referral of older people to consultation-liaison psychiatry services, which is an effect likely to be experienced in all nations with an aging population.[41] Old age liaison remains in its relative infancy, and there is a lack of qualitative and quantitative studies worldwide in this area of service.

A meta-review on liaison psychiatric services outlined the need for more evidence-based research to guide liaison service development and planning.[42] A recent systematic review suggested that liaison mental health services in general hospitals have the potential to be effective in improving outcomes such as length of hospital stay, discharge destination, and hospital costs, but concerns were raised about the reliability and validity of the studies included.[43] There was evidence of improved accessibility, but services were heterogeneous, and there was a high level of missing data. The conclusion evidenced a lack of ownership and responsibility for these services, and further evaluation of liaison mental health service for older people was highly recommended.[43] A recent quantitative prospective review of referrals to a psychiatry liaison service (Newcastle, United Kingdom) showed a significant increase in cognitive assessments (from 19% to 49%).[44] The effect of service on psychological support to patients, cost, staff training, and outcome, including length of stay and readmission, were not evaluated.

The prevailing view in the United Kingdom is that old age psychiatrists have the main responsibility for the diagnosis and management of dementia. In many hospitals, both psychiatric and medical notes are not easily accessible and are mostly kept separately. Clearly, there is a need for more collaborative and liaison work between geriatricians and old age psychiatrists for the prompt diagnosis and management of dementia. The hospital liaison multidisciplinary mental health team is the model advised in the United Kingdom to offer a general hospital the most complete service, and the RAID service model is most closely linked with this structure of service.

The RAID model highlights that for an effective psychiatry liaison service model, it is imperative to have multidisciplinary staff working together on these often-complex patients with both physical and mental health needs. The average UK psychiatry liaison service at present does not reflect the level of professional input afforded by the RAID service. However, given statistics related to the aging population, there surely has to be priority to increase the attention, number of resources, and level of service for this vulnerable group of patients.

The RAID model has overcome organizational barriers across traditional specialty boundaries. It has demonstrated that closer and collaborative multidisciplinary working between mental health specialists and other professionals provides better support for comorbid mental health needs. The care for large numbers of older people with multiple comorbidities could be improved by better integrating mental health support with primary care and chronic disease management programs. The timely response and immediate triage to relevant professionals reduces physical health care costs in the community and acute hospitals. Those with the necessary expertise define appropriate cases and begin the management of the patients at the point of entry to the hospital. The service's other strengths include rapid access, data collection, and evaluation.

Such innovative forms of psychiatry liaison services could reduce the cost by early diagnoses and formulating care plans for people with dementia, thus avoiding prolonged admissions and unnecessary readmissions to hospital. The RAID service has influenced other services, such as the Pennine Care NHS Foundation Trust, which established their psychiatry liaison services to provide more support to adult patients presenting at A&E with mental health problems, alcohol misuse, and dementia.

There are a few limitations in different areas of the published RAID model data that may represent a missed opportunity. The RAID service showed improved overall outcomes, better health care at lower cost, and enhanced quality of care provided to patients with dementia. The cost per quality-adjusted life-year was overall negative but was not evaluated in people with dementia or specifically published as part of this RAID evaluation. Given the focus on reduction of antipsychotic prescribing in the elderly[27] in the United Kingdom, it is disappointing that there are no published data available from the recent RAID evaluation.[25]

The RAID evaluation showed that 90% of total benefits, in terms of reduced bed use, were related to older people, who formed one-third of the referrals.[20] There was no subanalysis of the prevalence of dementia in older people, or comment on how dementia diagnoses related to outcome. The severity of and prevalence of delirium were not evidenced in the published data.

Staff education and training have addressed the dearth of dementia training in medical nurses. Various factors such as a favorable patient-to-nurse ratio, work environment, nurse's education, and communication skills training improve patient's quality of life and their satisfaction with health care professionals.[45,46] The RAID service model aimed to provide timely staff education and training, but no specific data on staff competence, satisfaction, or feedback were available. The effect of staff training, including reduction in stress level; reduced complaints; and fewer aggressive incidences toward staff, might have been helpful indicators. The multidisciplinary staff were said to feel confident in dealing with people with dementia, but a formal evaluation of the outcome of staff training was lacking.

The RAID model has shown success in a city hospital, but the generalizability of its effectiveness in different circumstances (eg, rural areas) and a widely distributed population is questionable. Its multidisciplinary base creates several difficulties: It may produce management barriers with a risk of destabilization if an element of service is withdrawn; financially, it is a challenging resource; and data capture and analysis are important if its cost-effectiveness is to be evidenced adequately. It represents a complex organizational task, and the choice and strength of the clinical lead are of prime importance.

Remodeling the basic general hospital care and geriatric services to develop dementia nursing care plans, dementia nurse champions, memory assessment clinics, and regular audit are the key to meeting the needs of increasing numbers of people with dementia. The development of integrated dementia crisis support and intermediate care services provided by geriatricians would support people with dementia in the community. However, there still remains the wider challenges of managing the two thirds of patients in care homes who have dementia with complex needs, providing care home staff training, and improving end-of-life care for people with dementia.

Conclusion

Liaison psychiatry service models have been widely published, but the interpretation of their outcomes has its limitations because of service variability in terms of age, regions, accessibility, and resources. The Royal College of Psychiatrists explains that each model should be carefully considered in light of local factors: one size does not fit all, and there are scarce data from the United Kingdom comparing different models.[11] The RAID service has shown an effective, enhanced service model for older people who are at risk for dementia and has shown good outcomes with quality improvements in the care of older people. The development of a rapid response and comprehensive psychiatric team integrated in an acute hospital can lead to significant savings in health service provision. Similar services worldwide could improve dementia care both in community and acute hospitals and open new areas of research and development. A multicentered, randomized controlled trial of psychiatry liaison models to measure their effect on improved quality of life, independent living, and mortality may help dementia care.

Disclosure

All authors declare no conflict of interest.

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