What should we do about hospital readmissions?

Health services throughout the world are facing challenging times—the global recession and the ageing population are conspiring to produce a perfect storm, in which much more gain is required from significantly less resource. Older people are major users of hospital services, and once admitted to hospital, are at high risk of adverse events [1, 2], have long stays, high readmission rates and high rates of long-term care use [3].

A major focus of health policy in England and Wales is how to reduce readmissions following an episode of acute care; there has been an increase the funding tariff paid for an acute episode of care, but with hospitals is being financially disadvantaged for patients being readmitted within 30 days. In conjunction with the changes in tariff, non-recurrent funding has been set aside to develop community services aimed at reducing the risk of readmission; 14% of patients aged over 75 were readmitted within 30 days in England during 2008 [4]. It is estimated that patients readmitted within a month of discharge cost the NHS £2.6 billion each year [5].

The reasons for readmissions in older people are not well understood, but are often due to a complex interplay between physical and mental health issues as well as factors such as the availability of carers. This is played out over the fragile interface between primary and secondary care, with the associated challenge of delivering timely, accurate and comprehensive communication.

The system factors and policy drivers make the concept of identifying people at a high risk of readmission with the aim of intervening to prevent readmissions appear an attractive proposition. In the current issue of Age and Ageing, Cotter et al. report on the use of the LACE index in the UK population. The LACE index (L, length of stay; A, Admission type; C, Co-morbidity; E, ED attendances) has previously been validated in a Canadian population for predicting readmission and death following discharge, but excluded patients with cognitive impairment or those who lived in care homes. Cotter et al. tested the LACE score on 507 randomly selected older patients with a variety of co-morbidities. At 30 days, 90 (17.8%) were readmitted and 23 (4.5%) had died; the c-statistic was 0.55 and 0.70, respectively. Cotter et al. concluded that the LACE index is a poor tool for predicting 30 day readmissions in older UK inpatients and suggested that more detailed patient level information is required to improve the performance of readmission prediction tools.

A recent systematic review by Kansagara et al. [6] of 26 tools to predict readmission showed none to be particularly useful. Even if people are identified as being at risk of readmission there is a discussion to be had about the interventions that might be implemented to reduce this risk. Structured, multidisciplinary post-discharge support visits have been shown to reduce readmissions in patients with heart failure [7–14], COPD [15, 16] and frail older people more generally [14, 17–22]. The addition of telemonitoring appears to be additionally effective in patients with heart failure [23–26], as does improved self-management for people with long-term conditions [27]. However, the concept of adding in additional services to address readmission risk may be flawed.

Even if we had a screening tool with near perfect properties (sensitivity and specificity at 90% each), an additional service is unlikely to ever be cost-effective. Consider a population of 500 older people being discharged from hospital with a readmission rate of 15%; using the perfect screening tool, the numbers identified for intervention are shown in Table 1.

Overall the most likely impact of a service aimed at preventing readmissions is a 6–7% reduction in readmissions (based on trials of CGA over the interface [Stuck et al. 28], Baztan et al. 29, Hyde et al. [30]). In the most optimistic of scenarios where the ‘readmission service’ prevented 10% of readmissions and cost only £100 per patient, it would see 110 patients, costing £11,000 and might prevent seven admissions (68*10%). If a readmission cost £1500 (generous), then the service would lose £500 (22*500 in readmissions prevented). As it is screening tools are nowhere near this accurate, and it is unlikely that any effective intervention would cost as little as £100 (this amounts to a few hours of nurse or therapy input). It is possible to model a variety of scenarios using the above logic, none of which suggest that screening and intervening for readmission is likely to be cost-effective. And given the economic climate, if is not cost-effective, then we should not be doing it.

So what should we be doing about readmissions if screening and intervening around the time of discharge to prevent readmissions is unlikely to be affordable? Perhaps the best hope comes from an Australian study which highlighted the impact of CGA for in-patients combined with on-going community support—a vertical integrated care pathway for older people. This intervention reduced readmissions by half [31] and appeared to be cost-effective (net-monetary-benefit per individual for the intervention group compared with the usual care condition was AUS$7,907 [32]).
Efforts to reduce readmissions should focus on improving in-patient management, ensuring that frail older people with acute care needs receive CGA and developing better and inexpensive methods of linking with existing primary care and social services to enhance communication at the time of discharge.

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**References**

1. Patients Association. We've been listening, have you been learning? 2011.
Towards standardised evaluation tools

If you can not measure it, you can not improve it.

Sir William T. Kelvin

Increased ageing of society is common in many countries. Life expectancy includes all years of expected life, regardless of whether these years are enjoyed in good health or with significant disability. The primary public health goal is to increase the number of years of good health and, therefore, to maintain independence and quality of life as long as possible. Healthy ageing is characterised by the avoidance of disease and disability, the maintenance of high physical and cognitive function, and sustained engagement in social and productive activities [1].

The health status is an important indicator of the quality of life among older persons [2, 3]. It appears that especially various components of health-related fitness and functional performance, or serious, chronic conditions and diseases that directly influence the components of fitness and performance are related to perceived health among middle-aged and older adults [3–5]. Even in the absence of overt pathology, motor functioning [cf. International Classification of Functioning (ICF) by the World Health Organisation, Geneva (see http://www.who.int/classification/icf)] can deteriorate, as is illustrated by the incidence and impact of falls in ageing populations [6]. Because the functional status is by far the most important factor affecting the quality of life and healthcare utilisation in old age [7], valid, reliable and responsive outcome measures for the assessment of physical activity and/or physical functioning in aged individuals are of utmost importance.

For both researchers and clinicians addressing health issues in the ageing population, however, it still is a major challenge to effectively monitor physical functioning. Mobility disability or disability in activities of daily living (ADLs) is usually assessed with self-reports, where participants are asked to report whether they have difficulties or need help in performing basic ADLs or mobility-related tasks [8]. Objective, performance-based measures of physical function have the disadvantage, as Freiberger et al. [9] nicely summarise in their systematic review, that little information about their psychometric properties is available. A recent development is the use of body fixed sensor technology for studying human movement. Based on the use of miniaturised motion sensors, methods are available for long-term monitoring of daily physical activity and the assessment of motor functioning under real-life conditions. These methods are highly relevant for studying motor functioning in older people; however, currently available literature does not present a wealth of information about long-term monitoring of movements in older subjects [10, 11] and does not provide recommendations of a standardised set of outcomes which researchers and clinicians should use.

There are, thus, numerous tools that can be used to assess various conditions in the elderly. Agreement on which tools should be used consistently would help facilitate multicentre trials and the development of benchmarks in geriatric rehabilitation [12]. Consensus on assessment and outcome tools would, furthermore, facilitate multicentre comparative studies. One method of achieving these goals would be through a consensus conference, e.g. [13]. The paper of Freiberger et al. [9] could be a starting point...