EDITORS

Next Steps for Falls and Fracture Reduction

In July the Department of Health (DH) in England published a toolkit of resources to promote more effective services to reduce the burden of falls and fractures in older people. Unfortunately, there is plenty of evidence that the present provision of falls services is suboptimal. The toolkit is part of a ‘Prevention Package’ aimed primarily at commissioners of care, in an attempt to achieve a more consistent and integrated approach to a range of prevention issues in older people [1].

Falls are a major international public health challenge because of the myriad effects on older individuals: direct physical and psychological injury; fear of falling and activity limitation; reduced social participation and quality of life; increased dependence [2–5]; and because of the economic impact on health and social care providers [6, 7]. Studies from various countries have shown that about one third of people aged above 65 years fall each year. In UK primary care populations, the rate rises with age to over 60% of nonagenarians, and is generally higher in women [8] and in socio-economically deprived populations [9]. Fragility fractures are the commonest significant injury, 300,000 annually in the UK including upwards of 70,000 hip fractures.

Many falls go unreported, but nevertheless they account for 40% of UK ambulance call-outs, with the variable proportion being conveyed to hospital accounting for one in ten Emergency Department (ED) attendances of the over 75s [6], a third of whom are admitted, thus comprising about 14% of emergency admissions.

Identifying all falls related activity is challenging but recent estimates suggest that it accounts for between 10% and 25% of all local health and social care spending on older people [10]. Care of fragility fractures is particularly expensive, total health and social care costs in the UK being around £2 billion, most of which relates to hip fractures [11]. Current population and incidence projections suggest that by 2020, this figure will rise by 50%.

Early in the development of geriatric medicine, falls were identified as a ‘geriatric giant’—adverse in their own right but also a non-specific indicator of functional decompensation. Building on clarification of falls risk factors [12], randomised controlled trials demonstrated the effectiveness of risk factor based multi-factorial interventions [13, 14]. This led to the notion of ‘falls prevention services’. Based on international consensus about what constituted best clinical practice [15], broadly similar policies have been developed by the responsible government departments of the four UK nations, and in Ireland [16]. The National Service Framework for Older People in England (NSF, 2001) [17] required health services and their local council partners to develop integrated services by April 2005, incorporating case finding, assessment and referral systems and specialist falls and fragility fracture services.

The NSF was launched without earmarked implementation funding, but there was plenty of activity, some enabled and directed by various government initiatives, encouraging community engagement. An independent postal questionnaire survey to health and social care agencies about their falls services in 2004 [18] reported most having made plans for an integrated service but implementation was patchy and focused on widely differing priorities. Only 30% included systems for identifying high risk individuals and only 13% of falls prevention programmes included exercise classes, the most effective prevention strategy [19] whilst interventions with little or no evidence base were promoted [20].

Implementation of these policies across England, Wales and Northern Ireland has been monitored in a series of government funded national audits run by the Royal College of Physicians of London (RCP). The first of these confirmed major gaps at the organisational level, particularly in case finding and referrals for secondary prevention [21]. A subsequent patient level clinical care audit of fragility fracture patients showed that most returning home from the Emergency Department were not offered a falls risk assessment and only one third were on appropriate treatment for osteoporosis 3 months later [22]. Despite intense interest among clinicians in the UK and appointment of many geriatricians with a focus on falls, syncope and orthogeriatrics, a repeat organisational audit showed that by 2008 there had been little improvement in service structure, capacity or processes [23].

Meanwhile the picture was clouded by the negative results of a DH funded systematic review with meta-analyses [24]. This suggested that the variable outcomes of clinical trials might be associated with the way that the multifactorial approach was organised. There are now several negative outcome trials employing the strategy of nurse led case finding linked to interventions intended to be provided by a range of unconnected professions acting on referral [25]. In clinical practice, it is likely that there is even more differential effectiveness depending on case finding and referral practices and contextual differences in service delivery.

Research evidence is still lacking on how to achieve much that the NSF aspired to, but there is sufficient evidence and examples of successful implementation to do much better than most are currently doing. So how will the latest government action help? A key step is to clarify priorities and to put available resources into the activities likely to make most
difference. This approach is represented in the toolkit by the pyramid in Figure 1.

**Objective 1: improve hip fracture care**

Improved outcomes and reductions in variability in time to surgery, hospital length of stay and better secondary prevention may be secured via commissioning to meet six key standards based on the rationale set out in *The Care of Patients with Fragility Fracture (The Blue Book)* [11]. Progress towards compliance can be monitored over time and in comparison to peers by participation in the National Hip Fracture Database (NHFD) [26] which has now been supported with funding by the government agency the Healthcare Quality Improvement Partnership until 2012. Financial incentives through adoption of differential tariffs are currently under discussion to support the necessary service developments from April 2010.

**Objective 2: secondary prevention after a fragility fracture**

The fracture liaison service model has proven effectiveness at increasing the use of effective treatments to reduce fractures. Secondary prevention is of particular importance in tackling the anticipated hip fracture epidemic as a woman of 50 faces a 17% lifetime chance of a hip fracture [27]. Nearly half of them will precede this with a less serious fragility fracture [28], providing an opportunity for action. These 16% of postmenopausal women can be targeted through fracture liaison services in acute and primary care settings. In Canada this type of programme has been shown cost effective within one year of implementation [29]. To promote adoption, there is modest financial incentive currently in the form of an optional directly enhanced service which local healthcare commissioners can agree with primary medical care providers.

**Objective 3: falls care pathways**

For many local health and social care economies, this has been a major challenge but also the main focus of activity to the detriment of attention to the top two tiers in the pyramid. The toolkit provides guidance on issues to be considered. A key consideration is case identification of high-risk patients. The evidence of benefit of multifactorial interventions is strongest for those presenting to acute care and receiving directly provided services, but the key components have not been consistent. Only one study, in North American, has demonstrated a reduction in falls through incorporation of effective clinical practice by non-falls experts in a population wide approach [30]. Evidence is lacking on how best to incorporate the inputs of primary care and specialist services in the NHS setting.

Overall, for community dwelling older people, supervised exercise has the strongest evidence but must incorporate adequate intensity and duration of strength and balance training [31]. It has been suggested that assessment based individualised multi-factorial interventions are an over complication for most older patients, who would gain most by direct application of the exercise training programme [32]. Further research is needed to clarify how best to identify those who do need more detailed assessments; this would include the need to identify and manage syncope, unexplained recurrent falls.
Objective 4: prevent frailty, promote bone health and reduce accidents

Internationally, the WHO sponsored an international campaign to promote population based falls and falls injuries prevention programmes. These have been evaluated but not with prospective randomised controlled trials. A recent Cochrane systematic review suggested that there was no strong evidence of benefit from these population-wide approaches though there were some individual programmes which seemed to show effectiveness [38].

Falls are one of several adverse events to which frail older people are particularly liable. The frailty concept explains the complex and variable causal pathway and suggests that a broad approach, not specifically falls focused may be preferable for population primary prevention [39]. Furthermore, research with older people across a spectrum of risk has shown that prevention of falls is not their prominent perspective, rather maintaining mobility and independence [40]. Promoting regular physical activity is probably the most powerful intervention and the priority for local councils is to increase access and uptake.

The toolkit

The toolkit consists of several products, freely available on the website. These include a narrative slide set as an educational resource, individual papers covering epidemiology, interventions with links to key references, a summary of evidence based exercise interventions, an ‘invest to save’ case on the provision of fracture liaison services, suggested metrics for performance monitoring and quality measurement, and the web-based commissioning pathways setting out the key elements to be commissioned.

Summary

It has been suggested that the complexity of the NSF coupled with lack of specific resource allocation has been a barrier to its implementation [41]. This service complexity is greater than for an area such as stroke where considerable progress has been made based on the convincing evidence of a specialist service model [42]. For falls and fractures, only well-integrated care working across the hospital-community interface and incorporating a range of professionals can deliver the interventions described in current guidance. Research evidence suggests that the potential magnitude of effect is in the region of 20% falls reduction, well worthwhile but probably not achievable without significant improvement in focus and quality of essential components such as exercise programmes. This toolkit is intended to provide fresh impetus for commissioners and providers of care to reconsider priorities and implement a coherent strategy based on the four key objectives.

Conflict of interest

Dr Martin is the acting National Clinical Director for Older People at the Department of Health and co-chaired the Falls and Fracture Toolkit working group.

References

13. Tinetti ME, Baker DI, McAvay G et al. A multifactorial inter-


15. American Geriatrics Society, British Geriatrics Society, Amer-
ican Academy of Orthopaedic Surgeons Panel on Falls Pre-

Executive_Summary_-_Strategy_to_Prevent_Falls_and
Fractures_in_Ireland%e2%80%99s_Ageing_Population.pdf.


22. Royal College of Physicians Clinical Effectiveness and Evalua-
tion Unit. National clinical audit of falls and bone health in older people. 2007. Available from: www.rcplondon.ac.uk/clinical-
standards/ceeu/Current-work/Pages/Falls-and-Bone-
Health-in-Older-People.aspx

Current-work/Falls/Pages/Audit.aspx#round2_audit.2008.


29. Sander B, Elliot-Gibson V, Beaton DE, Bogoch ER, Maetzell A. A coordinator program in post-fracture osteoporosis man-


32. Campbell AJ, Robertson MC. Rethinking individual and com-


pub2.


CD004441.pub2.


40. Yardley L, Todd C. Encouraging positive attitudes to falls preven-


42. Irwin P, Hoffman A, Lowe D, Pearson M, Rudd AG. Improv-