EffectivenessMatters

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Preventing falls in hospitals

- **Falls in hospital impact on quality of life and health, and cost the NHS more than £2.3 billion per year**
- **An individualised falls risk assessment is essential to identify targeted prevention interventions**
- **The use of single or multicomponent interventions is effective in reducing the risk of falls in hospitals**
- **Effective components in prevention programmes include: engagement of front-line staff in the design of interventions, use of falls data, attitude change away from the inevitability of falls and training to promote adherence**
- **Board and ward level leadership and support are consistently associated with implementation success**
- **Ongoing monitoring of adherence is important for the maintenance of long-term changes**

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Background

Falls in hospitals are a common and serious problem estimated to cost the NHS more than £2.3 billion per year. About 30% of people 65 years of age or older have a fall each year, increasing to 50% in people 80 years of age or older.[1]

The risk of falling is multicomponent and the more risks a person has, the greater their risk of falling. The strongest risk factors for a fall are age and a previous fall. Other examples of risk factors include: being male, higher care needs, incontinence, medication use, delirium, cognitive impairment or dementia, poor vision, postural hypotension, peripheral neuropathy, muscle weakness, postural instability, mobility and/or balance problems, vitamin D deficiency and arthritis.[2,3]

Falls can cause patients distress, pain, injury, prolonged hospitalisation, and death. Falls also result in loss of confidence and independence, particularly where family members, carers and health professionals' reactions are to be overly protective.

Falls in hospitals therefore impact on quality of life, health and healthcare costs and present significant clinical, legal and regulatory problems.

This issue of *Effectiveness Matters* summarises the evidence about the effectiveness and implementation of interventions to prevent falls in hospitals. The bulletin is based on existing sources of synthesised and quality-assessed evidence and NICE guidance: Falls: assessment and prevention of falls in older people.[1]

Falls assessment

NICE recommend that patients at risk of falling should be considered for a multicomponent falls risk assessment. This should be performed by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service. The use of fall risk prediction tools is no longer recommended. Patients at risk of falling in hospital are defined as aged 65 and older and those between 50 and 64 with an underlying condition that puts them at a higher risk of falling.[1]

Frailty is a complex clinical condition associated with adverse health outcomes, including increased risk of falling. Identifying frailty is essential to ensure that the disproportionate change in health state that characterises frailty is considered when deciding on the targeted interventions.[4]

Individualised, multicomponent risk assessments should identify risks for falling in hospital that can be treated, improved or managed during the patient's expected stay. (See Box)

Falls prevention programmes

A well conducted Cochrane review found that comprehensive geriatric assessment (CGA), specialist, organised and co-ordinated geriatric care on a dedicated ward, is effective in delivering better patient outcomes than conventional care in a hospital setting. Significant improvements in the chances of a patient being alive and in their own home at up to a year after an emergency hospital admission were found if the patient received co-ordinated specialist services. There is some evidence that CGA delivered by specialist teams on standard wards may also be effective.[5]

Single interventions

There is good quality evidence that as single interventions targeted at all high-risk individuals: additional physiotherapy or supervised exercise in rehabilitation wards; and patient education by trained professionals; significantly reduced risk of falling.[2]

However, medication interventions; use of low beds; communication aids (ID bracelet); bed exit alarms; staff training; and service model change delivered as single interventions to all patients, have not been shown to make significant differences in the risk of falling or rate of falls.[2]

Carpet flooring significantly increased the rate of falls compared with vinyl flooring and potentially increases the risk of falling.[2]

Clearly, where a fall is caused by a single problem, such as anti-hypertensive drugs causing postural hypotension, then a single intervention for that individual is required.

Multicomponent interventions

There is good quality evidence that multicomponent interventions can reduce the rate of falls in hospitals by as much as 30%.[2,3,6] Multicomponent interventions involve the delivery of two or more interventions tailored to the findings of each patient's falls risk assessment.

A multidisciplinary intervention in a sub-acute ward, involving falls risk alert card, information brochure, exercise programme and hip protectors, reduced the rate of falls but not risk of falling. The reduction in falls was most obvious after 45 days of observation, suggesting the programme benefits people with longer (non CGA) hospital stays.[2]

Multidisciplinary care in a Care of the Elderly ward after hip fracture surgery compared with usual care in an orthopaedic ward significantly reduced the rate of falls and risk of falling at discharge, even in patients with dementia.[2]

There is good evidence that: falls risk assessment; postfall evaluations; care, safety and toileting rounds; and medication reviews, are effective intervention components for all patients.[3]

For inpatients identified as being at high risk of falling, there is evidence of effectiveness for: alert signs placed on beds, doors, patients' records; care, safety and toileting rounds; bed- or chair-exit alarm systems; patient and family education; identification, wrist bands; bed side rails; non-skid socks and footwear; use of sitters; care plan communicated at change of shift report; moving high-risk patients close to nurses' station; ensuring call lights are within reach; and a clutter-free, safe environment.[3]

A systematic review and network meta-analysis to identify the most effective interventions and combinations of interventions that prevent falls in any setting is due for completion in September 2015.[7]

None of the reviews found any economic evaluations of fall prevention programmes in hospitals.

Implementation

Fall prevention programmes have been successfully implemented in hospitals of varying size, location and teaching status. When deciding on a new falls prevention programme, consideration should be given to the existing infrastructure, patient safety culture and oversight mechanisms, as well as existing falls prevention activities.[3] For example, systems for responding to patient safety alerts, such as NHS England's Central Alerting System.

A number of elements common to successful implementation and adherence to falls prevention programmes have been shown to be effective.[3]

A key driver for success is support at Hospital Trust Board level to help remove organizational barriers and ensure provision of the resources needed to implement change. Clinical leadership support, combined with the formation of multidisciplinary teams to oversee the process is a major help in successful implementation on units/wards. The roles and responsibilities of all those involved in delivering a falls prevention programme need to be clearly communicated and understood to promote ownership.[3,6.]

Engagement of front-line clinical staff in the design and testing of the intervention helps ensure that it will work within existing clinical and ward procedures. Together these approaches need to promote a positive attitude to falls prevention amongst staff in order to get everyone 'on-board'. Education and training of staff is necessary to help ensure compliance is maintained long term.[6]

NICE recommends

Multicomponent falls risk assessment includes:

- Identification of falls history
- Assessment of:
  - gait, balance and mobility, and muscle weakness
  - osteoporosis risk
  - the older person's perceived functional ability and fear relating to falling
  - visual impairment
  - cognitive impairment and neurological examination
  - urinary incontinence
  - home hazards
- Cardiovascular examination and medication review

Information technology systems capable of providing data about falls can facilitate evaluations of the causes and compliance with the intervention components.[6] The ADAPT falls Assessment Tool goes further and provides a fall risk assessment for each patient and allows tailored interventions for specific patient risks. The fall risk information is integrated into the care plan, report sheets, and care conferences, producing an interdisciplinary communication network.[3]

Adherence and monitoring

The effectiveness of any falls prevention strategy relies on sustainability of implementation and adherence.

There are a variety of tools that can be used to facilitate adherence to the components of an intervention and provide monitoring data on a falls prevention programme. These include: audit and feedback of adherence to processes of care; monitoring and disseminating fall data; and integrating risk assessments into an electronic health record. Published tools vary in the number and range of domains they assess.[3]

Adherence issues identified in clinical practice include: forgetting to remove identification signs next to call lights after high-risk patients were discharged and failing to educate new staff about fall prevention programmes.[3]

Collection and active review of data on intervention delivery and care processes are important to maintain long-term changes. Showing staff improvements in patient outcomes, such as reduction in number of falls over time, can be a strong motivator.

Successful components in the implementation of falls prevention programmes in hospitals [3,4]	
Leadership*	Hospital Trust Board led falls team reporting to Trust Board Ward champion appointed Nursing administration involved in full implementation
Frontline engagement*	Front-line staff buy in through consultation, responding to feedback and direct involvement in design
Multidisciplinary teams	Dedicated falls team with multidisciplinary membership Regular meetings to review implementation and on-going delivery of prevention programme
Pilot testing*	Introduce in single area to validate prior to wider roll out Where necessary re-testing carried out prior to finalising programme
Information technology systems*	Provide an accurate assessment of the falls risk of each patient Indicators are embedded into routine assessment documentation Connecting the system electronic medical record with the event reporting system
Attitude change	Positive attitude that falls can be prevented and are not necessarily inevitable and unavoidable Acceptance that all patients are at risk Recognition of the benefits and familiarity with the steps in prevention programme
Education and training	Education of staff about falls and the importance of fall prevention and how the new programme/tool(s) should be used Delivery of training before implementation of a falls prevention programme. On-going updates and training of new members of staff Fall and restraint 'fairs' held to coincide with implementation
**One or more of these elements were missing from research that was unsuccessful in implementing a falls prevention programme.*	

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About Effectiveness Matters

Effectiveness Matters is a summary of reliable research evidence about the effects of important interventions for practitioners and decision makers in the NHS and public health. This issue is produced by CRD in collaboration with the Yorkshire and Humber AHSN Improvement Academy. *Effectiveness Matters* is extensively peer reviewed.