PATIENT SAFETY FIRST

The 'How to' Guide for

Reducing harm from falls

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General introduction

All over the world, including in the UK, health care workers are proving that patient safety can be greatly improved and many complications or harm events that were previously considered unavoidable actually are avoidable. They are in fact, redefining what is acceptable in terms of patient safety.

The purpose of each of the Patient Safety First interventions is to provide you with a focus on which to begin or progress improvements in patient safety in your organisation. Each proposed intervention has an underpinning evidence base that identifies the need for change and how its elements can help you on a journey that will make a real impact on rates of patient harm and death.

The proposed elements, suggested changes and associated measures discussed in this document are not exhaustive; rather, a basis on which to start making a difference in the given area. It also provides a sound methodical approach that can be applied repeatedly in other improvement efforts you may wish to initiate.

In order to help others to benefit from your experiences your suggestions for improvement and case studies are welcomed; please share your learning with your local campaign contact or contact us direct via the Patient Safety First website: www. patientsafetyfirst.nhs.uk.

Reducing harm from falls

Who should use this 'How to' guide?

This document is aimed at managers and teams involved in leading and implementing changes to reduce harm from falls.

Due to the complexity and multifactorial nature of falls prevention, this document has been divided into two sets of interventions – one for organisational leaders, and one for frontline staff - both of which need to be addressed by organisations who wish to reduce harm from falls. Coordinated and interdependent workstreams need to be simultaneously developed.

Part A: First steps towards reducing harm from falls

This section focuses on getting the right people round the table to plan your intervention, agreeing aims and baseline measurements, and making sure your falls prevention activity is linked to other local workstreams such as improving dementia care and delirium prevention.

Part B: Leadership to reduce harm from falls

This section focuses on organisational infrastructure and is aimed at Board executives and senior leaders with responsibility for governance, training & development, and facilities.

Part C: Frontline actions to prevent falls

This section focuses on the actions required from frontline staff working on clinical wards and departments including ward and departmental managers, doctors, nurses, physiotherapists, pharmacists, occupational therapists, porters, cleaners and all other team members.

Why does falls prevention in hospital matter?

Across England and Wales, approximately 152,000 falls are reported in acute hospitals every year, with over 26,000 reported from mental health units and 28,000 from community hospitals. A significant number of falls result in death or severe or moderate injury, at an estimated cost of £15 million per annum for immediate healthcare treatment alone (NPSA, 2007). This is likely to be a significant underestimation of the overall burden from falls once the costs of rehabilitation and social care are taken into account, as up to 90% of older patients who fracture their neck of femur fail to recover their previous level of mobility or independence (Murray, Cameron and Cumming, 2007).

In addition to these financial costs, there are additional costs that are more difficult to quantify. The human cost of falling includes distress, pain, injury, loss of confidence and loss of independence, as well as the anxiety caused to patients, relatives, carers, and hospital staff.

Patients of all ages fall. Certain risk factors are more common in younger people (including trip hazards, faints, fits, acute illness, recovery from anaesthetic) but falls are most likely to occur in older patients, and they are much more likely to experience serious injury (NPSA 2007). With this in mind any interventions need to be tailored for the individuals concerned.

The causes of falls are complex and older hospital patients are particularly likely to be vulnerable to falling through medical conditions including delirium, cardiac, neurological or muscular-skeletal conditions, side effects from medication, or problems with their balance, strength or mobility. Problems like poor eyesight or poor memory can create a greater risk of falls when someone is out of their normal environment on a hospital ward, as they are less able to spot and avoid any hazards, whilst continence problems can mean patients are vulnerable to falling whilst making urgent journeys to the toilet. The case studies included in this document illustrate this complex play of individual and environmental factors.

However, patient safety has to be balanced with independence, rehabilitation, privacy, and dignity – a patient who is not allowed to walk alone will very quickly become a patient who is unable to walk alone. Addressing inpatient falls and fall-related injuries is therefore a challenge for all health care organisations.

Case stories: a complex mix of risk factors for falls in hospital

Miss A is retired ballet teacher in her late seventies. She has been admitted to acute care following a series of 999 calls after falling at home, with the ambulance staff suggesting her speech was slurred and she may have been drinking. Other than a spectacular black eye, she has no significant injuries. She brought in a carrier bag with a range of prescribed medication, sleeping tablets, and herbal remedies, but most appear unopened. She appears very unsteady on her feet but she refuses to relinquish her steel-tipped ebony walking stick for a frame. She has brought in high heeled sandals and fluffy backless slippers.

She will ring for help before mobilising, but considers three seconds too long to wait, and so sets off without staff. She is vague about the circumstances of her recent falls, and tends to deflect any attempts to formally assess her memory or self-care skills; 'maybe tomorrow, darling, I'm just too tired today'. She is extremely thin but from photos she has brought with her, this appears to be her lifelong weight. She is complaining about the hospital food and at being in a bed next to 'old people'.

Mr B is recovering from surgery after a fracturing his hip in a fall at home, which apparently occurred when he tripped over his cat. He has urinary frequency which he says is normal for him, and has twice been found sitting on the toilet floor, apparently having fallen, although he explains this as sitting down to pick up items he had dropped as he couldn't bend. His glasses were broken in one of these falls.

Although these 'falls' appear followed by transient confusion, he denies all symptoms, except occasional dizziness, and is desperate to return home to care for his disabled wife. He hates 'being a trouble' and despite reassurances from the nurses he will not ring for help before he mobilises, and even gets up to try and fetch things for his fellow patients.

What evidence is this 'How to' guide based on?

In 2006, the National Patient Safety Agency (NPSA) published a report analysing over 200,000 reports of falls in hospital including the underlying causes and contributing factors (*Slips trips and falls in hospital,* NPSA 2007 www.npsa.nhs.uk).

The purpose of the NPSA report was to help NHS staff working in acute, mental health, and community hospitals to improve local learning from reported falls and take action to improve patient safety, and it included links to the most successful studies of hospital falls prevention. This 'How to' guide also draws on these studies, including:

Fonda et al. (2006): This was a three-year multidisciplinary quality improvement project focussed on all patients on elderly care wards. It combined improvements to the environment and equipment with staff education and changes to working practices, particularly focussed on staff identifying and acting on a range of risk factors for falls. Falls fell by 19%, and serious injury from falls fell by 77%.

Haines et al. (2004): This RCT (randomised control trial) was delivered on rehabilitation wards for older people and included an exercise programme and education and information packs for staff and for patients. Falls fell by 30% in the intervention group, but the reduction in falls was most noticeable after the patients had been in the exercise programme for more than six weeks.

Healey et al. (2004): This RCT focussed on patients on acute care of the elderly and rehabilitation wards who had been admitted with a fall, who were worried about falling, or who tried to walk alone although unsafe to do so. It used a core care plan that guided nurses to assess and act on common risk factors, and to prompt doctors to review medical causes of falls and pharmacists to review medication. There were also system changes like improved access to opticians and to replacement slippers. Falls reduced by 25% over a year.

Stenvall et al (2008): This RCT focussed on a group of patients very vulnerable to falling in hospital – patients admitted with a fractured neck of femur – and used a multidisciplinary team to identify and address patients' individual falls risk factors, with a special emphasis on eliminating causes of delirium, and early active mobilisation. Over more than two years, patients in the intervention group were almost three times less likely to fall, and no serious injuries occurred.

Von Reteln-Kruse et al. (2007): This was a multidisciplinary before and after study focussed on all patients on elderly care wards and included additional supervision with mobility and toilet use, staff education, patient information, support with footwear, eyeglasses, and mobility aids, with a particular emphasis on reassessment after any fall. Falls fell by 18% over eighteen months.

There are also three **systematic reviews** (Oliver et al. 2007, Coussement et al. 2008 and Cameron et al. (Cochrane database) 2009) that draw on some or all of these studies, although they also include studies from care homes, which might not always be relevant to hospital inpatients.

This 'How to' guide seeks to support staff to practically embed the evidence through reliable systems which will help to reduce harm from falls.

Part A:
First steps towards reducing harm from falls

This section identifies key issues you need to decide on before you begin actively implementing improvement.

This part of the 'How to' guide on reducing harm from falls will help you with:

1. Understanding the improvement model and creating your team
2. Setting an aim and measuring a baseline
3. Important dos and don'ts

1. Understanding the improvement model and creating your team

Read *The Quick Guide to Implementing Improvement*

Before progressing further with this document it is recommended that you read the accompanying Campaign document *The Quick Guide to Implementing Improvement* available at www.patientsafetyfirst.nhs.uk as it contains background information on:

- The Model for Improvement – a suggested approach to undertaking any improvement activity and the structure utilised in this document

- Getting Started – a series of actions to consider working on prior to attempting to implement changes.

Create a strategic falls prevention team

If you started working through the list in 'Getting Started' in *The Quick Guide to Implementing Improvement* you should have a team in place that is committed to reducing harm from falls. Note that the formation of this group is also identified as an action for your executive team in Part B. Many hospitals will already have teams in place responsible for reviewing procedures relating to falls. Where this is the case it may be useful to review the membership (Part B contains a list of suggested members) and decide if additional clinical or improvement expertise would be helpful. Gather the team together and work through this document based on the approach outlined in the section called 'The Model for Improvement' in *The Quick Guide to Implementing Improvement*.

Join your efforts up with other important workstreams

Many PCTs (Primary Care Trusts) have now put inpatient falls in the contract performance specifications. Falls also links with the national dignity agenda, the Department of Health's guidance on the protection of vulnerable adults and the new focus on quality (because this includes patient safety and patient satisfaction) so work in this area is of particular interest to the executive team.

Your strategic falls prevention group needs to be linked with any local projects that could also have an impact on falls prevention. You could link by presenting your plans and results to each others' meetings, or having people who are members of more than one group.

Acute and community hospitals need to link their falls prevention group with any local projects focused on prevention of **delirium** and its early recognition and treatment. This can bring widespread benefits in reduced morbidity and mortality (BGS 2006) and is also likely to have a positive effect on the risk of falls (Stenvall 2007). Acute and community hospitals also need to link their falls prevention group with any local projects to improve the care of patients with **dementia**, because of its high prevalence in their older inpatients, and the high rate of falls in people with dementia. Improvements to the general care, comfort and dignity of patients with dementia are likely to have a positive effect on their risk of falls.

Nutrition groups also have a part to play in falls prevention, as any interventions to improve patients' strength or balance will rely on them being as well nourished as possible. Mental health and learning disability units need to link their falls prevention group to any local projects seeking to improve the general health of service users and diagnosis and treatment of any **physical illnesses**, as this in turn is likely to reduce the risk of falling from medical causes. There may be other local projects that are also linked to fall prevention e.g. initiatives to ensure patients with **Parkinson's** disease get their medication on time.

As falls incidents account for 35% of all safety incidents and more in certain clinical areas, direct links with governance meetings and governance boards is important.

2. Setting an aim and measuring a baseline
Setting an aim
In order to agree your aim, you need to understand the current state. Find out the number of falls in your organisation per month for at least the last six months and preferably 12-18 months. Use the calculation on the next page to work out the number of patients being harmed. This information will help you set a realistic time frame and goal. An example of an aim statement could be:

We will reduce harm caused by falls by 15% within one year.

Setting a target helps break a mindset where falls are seen as inevitable, but it is important to strike a balance between being ambitious and being realistic. Remember that most of the research studies described earlier, even with the advantage of dedicated research staff and extra funding, took some time to see any impact from the changes they made, and only reduced falls by an average of 18% (Oliver et al. 2007).

Measuring improvement

Measurement is the only way to know whether a change represents an improvement, although there are challenges in using reported falls as an outcome measure, which will be explored in more detail on the next page. The rate of harmful falls per thousand occupied bed days is the recommended outcome measure, and the following section describes how to collect this. Process measures (like the percentage of staff attending falls prevention training) will be described later in this 'How to' guide.

Create the operational definition of your aim

For consistent measurement over time, it is critically important that you define any terms included in your aim statement. For example, if you are using the goal above relating to harm from falls, you will need to determine exactly what constitutes 'harm'. The simplest way to determine 'harm' is to use your organisation's own severity grading that is built into your incident reporting system. Just determine which severity groups you are including.

Decide how you are going to collect your outcome measure

This measure requires reporting to Patient Safety First via the on line extranet site:

Measure	How to calculate	Guidance
Rate of patients who were harmed by a fall	• Determine the numerator: the total number of patients who were harmed by a fall in the month • Determine the denominator: the total bed days in the month • Calculate rate for 1000 bed days by dividing the total number of harmful falls occurring in the month by the total number of bed days in the month • Multiply the result by 1000	• Use adverse incident reports as the primary data source • No sampling required. Count all falls that resulted in harm • Report data monthly

Although falls are the most commonly reported patient safety incident, some trusts that have undertaken case note review using the Global Trigger Tool have found that there is still significant under reporting.   A published study confirmed this but also suggested that the opposite can occur, with falls reported as incidents but not recorded in the patients' notes (Sari et al, 2007).

Because of this, any initiative on falls can create increased awareness that leads to better reporting and therefore an apparent increase in falls.

However, because no-harm falls are the most likely to go unreported (Haines et al. 2009), the rate of harmful falls may be less likely to be affected by improvements in reporting. Any such apparent increase in falls is most likely to be seen in the category of no-harm falls as these are the most commonly unreported (Haines et al. 2009). In addition the focus of **Patient Safety First** is to reduce harm. For these reasons the rate of harmful falls has been chosen as the outcome measure for this 'How to' guide.

It is worth collating a baseline of data that goes further back in time than you may normally need to. This is because it is helpful to be able to identify seasonal peaks in falls causing injury, for example numbers of falls increasing during the winter months due to higher numbers of admissions of older people with seasonally triggered illness.

You may also start or continue monitoring the total number of reported falls if this is still useful in understanding the whole picture of falls in your organisation, but be prepared for the effect of increased reporting, and recognise that a whole number (unlike a rate) will be affected by any increases or decreases in admission and bed occupancy in your trust.

Counting reported falls is only one small aspect of a local reporting system – improving the quality and content of falls reports, and improving the subsequent investigation, analysis, feedback, and learning is covered in more detail in Part B.

Balancing measures
As highlighted later, actions to reduce falls have to be balanced with patient rehabilitation, independence, privacy, dignity and personal choices. If you feel your falls prevention programme might lead to a possible risk of reducing patient privacy or independence you may wish to include a balancing measure. This could include an audit asking patients questions relating to their dignity and independence, or you could also utilise routinely collected hospital episode data including length of stay and discharge destination.

3. Important dos and don'ts
DON'T present falls prevention as a solely nursing problem
All the successful trials of falls prevention interventions have relied on getting the whole multi-disciplinary team involved – and given the many different causes of falls in hospital patients, all the multi-disciplinary team is needed. Teams will be most effective if they engage doctors, nurses, therapists, pharmacists, domestic staff and relevant others to work with them to develop key aspects of the implementation.

DON'T judge the quality of care by crude falls rates or panic because there is an increase in falls on one ward over a month or two
The numbers are small and one patient with dementia and agitation can skew the data.

DON'T panic because falls rates don't drop in the first year or two
This may reflect better reporting. Additionally, there are few 'quick fixes' for a problem as complex as falls; most of the research studies described earlier found they had to make a concerted effort over six to 24 months before they began to see a reduction in falls.

DON'T focus on assessment tools, checklists or box ticking at the expense of real interventions which alter patient care
Assessment with no intervention wastes valuable time and resources and can be frustrating for patients and staff.

DON'T focus on falls prevention at the expense of autonomy and rehabilitation

DO post updates to results regularly and prominently
Enthusiasm for the project will wane over time if clinical staff perceive that the leadership's enthusiasm has diminished. It is essential to regularly update all involved staff in the work on the monthly level of compliance and the monthly change in the number of harms from falls etc. Not only will this show dedication to the project but when the momentum becomes apparent, clinical staff will be aware of the progress.

DON'T benchmark
The practice of comparing rates of disease entities or patterns of therapy across institutions is commonly known as 'benchmarking'. Benchmarking may not be a valid method to compare performance between facilities because of differences in patient population, data collection, or severity of illness. Fortunately, none of the work required to reduce harm from falls requires a comparison of rates between hospitals. As long as you establish clear methods and definitions for your regular data collection in your organisation, your results will consistently reflect your own improvement, which is the most important thing. Although we don't recommend directly comparing yourself with other hospitals, we do recommend learning from them! If you learn of a hospital that has significantly improved using the same measure over time, then get in touch with them – there will be value in finding out how they achieved their results.

DO build actions into processes that already work
Making this initiative fit into the patterns and habits already established in your hospital is essential. Where possible try to fit new actions alongside ones that are already in routine use. This increases the likelihood that they will be remembered and carried out.

DON'T pick and choose the easiest bits
Discourage the tendency to select and try out items that seem easy at the expense of more difficult components also included in the intervention. There are many factors that contribute to falls and improving the care associated with each component of this intervention aggregates to a larger improvement overall. Only implementing one or two components reduces the overall impact of the intervention.

Part B:
Leadership actions to reduce harm from falls

This section addresses four key areas relating to falls that need to be addressed organisation wide by its leaders:

1. Actions for the Board: Appoint an Executive Lead and establish a falls group
2. Actions for governance and risk leadership: Improve reporting and learning and validate any prediction tool
3. Actions for learning and development leadership: Train and develop staff
4. Actions for Facilities leadership: Create a safer environment

1. Actions for the Board: Appoint an Executive Lead and establish a falls group

Appoint an Executive Lead

The appointment of an Executive Lead ensures that a reduction in harm from falls is represented as an integral part of the trust's improvement agenda. They can provide a voice for the project at the Board, have the leverage to remove barriers to progress and ensure that falls is included in the leadership walkrounds agenda. In the *'How to' guide for Leadership for Safety* (available at www.patientsafetyfirst.nhs.uk) it is suggested that there be an Executive Lead for each workstream relating to patient safety, that this responsibility could be included into their job plan and the work's progress form part of their appraisal process. More information on patient safety walkrounds can also be found in the same document and the more detailed supplement on the same website.

Establish a strategic falls group

The Executive Lead can be supported by a steering group which meets and reports monthly into the corporate assurance framework and ultimately to the Board. This steering group should be a multi agency, multidisciplinary environment; initiatives to reduce the harm from falls are unlikely to succeed if they are seen as only relevant to nurses and physiotherapists. In addition, links with social and primary care are important for joining up hospital falls prevention with initiatives in the community. The group should as a minimum include representatives from these professional groups / departments:

Doctors	Nurses	Physiotherapy
Executive Lead	Occupational therapy	Primary care
Facilities	Patient representation	Social care
Governance/Risk	Pharmacy	Training & Development

The falls steering group is an ideal place to draw up and systematically review action plans to address trends in falls.

As well as leading on the main interventions described in this 'How to' guide, they are also ideally placed to look at strategic falls prevention issues which go beyond individual wards or departments, for example:

- Are there systems in place for patients who need a walking frame to access one? A recent audit (RCP 2009) found 33% of hospitals had no system to provide such aids within 24 hours of admission

- If a patient is a faller – especially a repeat faller – how will that information be shared throughout the patient's journey, including repeat admissions? For example, one hospital attached a special warning to the case notes of patients with a history of falling

- Does the information provided to patients and their families on falls prevention need updating?

- Are any current policies on special observation for very agitated patients at constant risk of falling appropriate and achievable?

- Are there waiting lists or capacity problems for inpatient referrals that might impact on falls or injury prevention (e.g. older people's psychiatric liaison, physiotherapy, occupational therapy, dexa scanning).

Although attendance at the falls group is not a formal measure in the intervention, the group should review records of attendance, and particularly monitor whether staff representing the whole range of professional groups are attending regularly, as progress is likely to stall if any of the key professional groups are not part of the intervention, or do not appear to be committed.

2. Actions for governance and risk leadership: Improve reporting and learning, and validate any prediction tool

Improve the quality of reporting

Consistent and good quality reporting of falls is fundamental to understanding where improvements can be made to reduce harm. Governance leads need to encourage reporting, and also focus on the quality of information given in incident reports. An example of a prompt sheet for improving the detail required for meaningful reporting can be found on page 30 of *Slips trips and falls in hospital* (NPSA 2007). Internal reporting systems need to strike a balance to ensure reports are quick and easy to complete whilst collecting enough meaningful detail.

Improve the quality of analysis and feedback

Governance leads also need to ensure the reports of falls they receive are meaningfully reviewed, analysed, and used for learning, with feedback reports provided at ward, speciality, and whole trust levels. A variety of different approaches might be needed to make the most of the data, including:

- Try plotting all falls on a local map of a ward. This can be done with retrospective data, and new falls added on as they occur. This gives the ward staff a visual means of identifying 'hotspots' and seeing if they can make improvements

- Consider similar ways to visualise trends such as plotting against a 24 hour clock to see if you have peak times. Might these be related to shift patterns, staffing levels, or cleaning routines?

- What age group is most affected by falls? Compared to beds occupied by gender, which gender is more likely to fall?

- Pay special attention to patients who are 'serial' fallers. Are there any patterns or specific types of patient you can identify and focus your improvement efforts on?

Case study: Using better incident reporting to focus falls prevention efforts, Colchester Hospital University NHS Foundation Trust

Documentation audit results and random sampling of incident report forms identified that a general falls risk assessment screening tool for all patients (i.e. STRATIFY) was either incorrectly scoring patients or staff were failing to act upon the results and implement appropriate interventions. A decision was made by the Trust's Falls Operational Group to develop and implement a new Allied Health Professional Falls Integrated Care Pathway (ICP) based on the recommendations of the 2007 NPSA report. This was more specific in targeting those patients with a history of falls or who were admitted with unsafe mobility. The document would be initiated by either therapies, nursing or clinical staff. The ICP incorporated a cluster of interventions aimed at reducing the risk of slips, trips and falls and was broken down into each disciplines' area of responsibility.

In order to further improve patient outcomes, a number of additional sensor panel systems were purchased which alert staff to high risk patients once they begin to mobilise. A number of additional low rise height bed frames were also purchased for those patients at risk of falling or rolling from their beds but where bedrails were contraindicated. Using criteria within the ICP, alternative strategies were therefore made more readily available to staff to both reduce the risk of falls and secondly to reduce the severity of injury from falls for those higher risk patients.

As the next part of this process, the Datix Incident Reporting system was modified so that when staff logged in to electronically submit a slip, trip or fall incident they were automatically asked to provide a range of additional risk factor information

regarding the incident in the format of a mouse click, drop-down menu selection. The drop-down menu format also means that inputting time is minimal.

This information regarding risk factor trends is then automatically fed into mandatory falls prevention training sessions as well as e-learning programmes and competency packages. At both Trust and Ward level, action plans are developed and continually monitored and evaluated in order that each speciality looks to reduce risk trends unique to their patient profile as evidenced by the Datix system.

Evaluation of falls rates since the introduction of these measures has seen a reduction in falls from 8.1 to 5.25 falls per 1000 bed days. In order to monitor compliance with the ICP a quarterly audit programme evaluates implementation of the key interventions within it and this is then fed into the Falls Operational Group for analysis and action. The chart below identifies early reductions in falls rates since the introduction of the ICP outlined above.
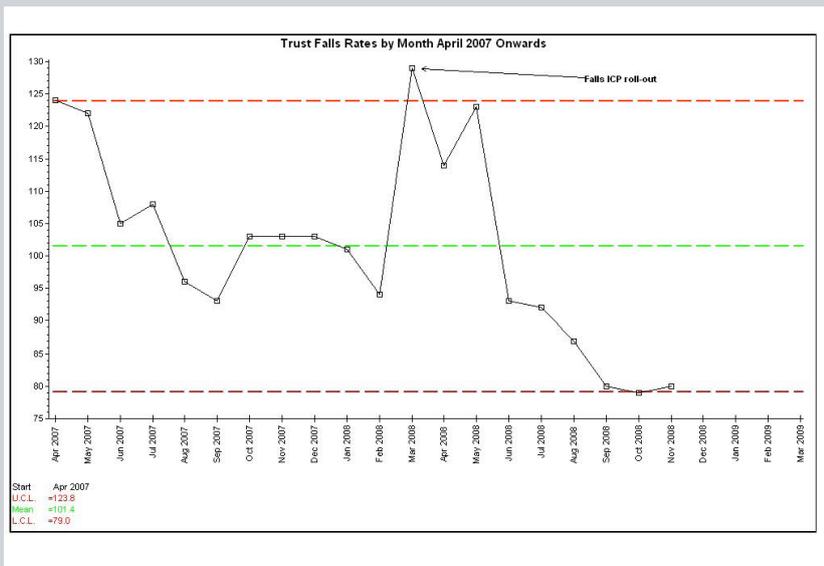
Root cause investigations for all serious falls

All falls causing significant injury (e.g. fractured neck of femur) should receive a full Root Cause Analysis (RCA) investigation seeking to identify underlying causes and action plans to prevent similar incidents. With a commonly occurring issue like falls, aggregate root cause analysis (a combined investigation of a cluster of falls in similar circumstances seeking to identify common themes) may be particularly valuable. Tools to support full and aggregate RCA can be found at http://www.npsa.nhs.uk/nrls/improvingpatientsafety/patient-safety-tools-and-guidance/rootcauseanalysis/rca-investigation-report-tools/

Locally validate your numerical risk assessment tool – or stop using it!

Recent reviews of the reliability of numerical falls risk assessments suggest there is a risk of such tools missing patients who are likely to fall or identifying a patient as a likely faller when in fact they are not (Haines et al. 2007, Oliver et al. 2007). Even tools which worked well in an original research study may not work in a hospital with a different case mix. Such tools also often contain questions or criteria that may lead to a higher score but can not be modified such as 'age over 80 years' and may not contain criteria that could be acted on, such as current use of sedatives. Perhaps even more importantly, most of the successful falls prevention trials described earlier did not use a numerical risk assessment score.

There can also be a risk that completing numerical assessment tools becomes an end in itself; the recording of the score is where the action ends. A key aim of this document is to highlight the need for an approach where risk factors are addressed and modified wherever possible, rather than simply used as predictors of the risk of falling.

Increasingly organisations are realising that all patients in hospitals are 'at risk' at some point during their in-patient stay, and key risk factors for falls – such as currently unsafe mobility, confusion, or continence problems – need assessing and addressing in their own right. Patients admitted with a history of falls or who have fallen since admission have to be the first priority for targeting prevention efforts, whilst in some healthcare areas (e.g. wards treating patients with stroke or fractured neck of femur) it would be more appropriate to simply assume that all their patients are at high risk of falls, and use assessment formats, core care plans, pathways, and care bundles documents that help staff consider and act on risk factors that can be changed.

Hospitals that are currently using a numerical risk assessment tool need to understand how sensitive and specific it is in their local patient population (i.e. how often the tool over-predicts falls, or misses a risk in patients who go on to fall). This downloadable article gives an overview of why this is important: http://www.nursingtimes.net/nursing-practice-clinical-research/falls-risk-prediction-tools-for-hospital-inpatients-do-they-work/1999146.article and the information in **Appendix 1** explains how to calculate any locally used tool's sensitivity and specificity using a combination of case note review and falls reported in your hospital. To make this easier, a simple Excel tool which will complete the calculations and explain their meaning can be found at www.patientsafetyfirst.nhs.uk.

3. Actions for learning and development leadership: Train and develop staff

Carry out training needs analysis

Learning and development leadership (supported by a falls team member/coordinator) may be best placed to undertake an extensive training needs analysis to identify staff requiring and receiving training in the prevention, reporting and management of falls.

What are we trying to achieve?

If this analysis shows that there is a skills deficit then the leadership can ensure that an action plan for training is developed and implemented throughout the organisation. An example of an aim statement might be:

Within 18 months a minimum of 95% of all appropriate staff will have received training in falls management within the previous 12 months.

How will we know that a change has been an improvement?

You will need to collect information on how many of the targeted staff receive appropriate falls prevention training. This measure requires reporting to Patient Safety First via the on line extranet site:

Measure	How to calculate	Guidance
Percentage of appropriate staff who have received training in falls management in the last 12 months	• Determine the numerator: the number of staff trained in the management of falls in the last 12 months • Determine the denominator: the total number of staff who require the training • Calculate percent by dividing the numerator by the denominator and multiplying the result by 100	• No sampling - track 100% • Review training attendance lists • You will need a central database listing all appropriate staff or make each area responsible for maintaining records. Consider utilising other systems you have in place for the tracking of statutory and mandatory training • Report data monthly

What changes can we make that will result in an improvement?
Develop and implement a plan for falls prevention training

- Learning and development needs will vary between different groups of staff, including doctors in training, registered nurses and health care assistants, pharmacists, porters and cleaners, etc. but make training multidisciplinary where possible. Consider novel ways of delivering training, including e-learning and ward-based teaching as well as traditional 'classroom' sessions

- Because the patient groups most vulnerable to falls include people with dementia or delirium, key components of falls prevention training are how to provide good care for patients with short-term memory problems or agitation, and how to prevent, detect, and manage delirium. For issues such as patients who want to walk alone although unsafe to do so, training needs to provide an overview of legislation including the Mental Capacity Act (2005) and professional guidance including the Royal College of Nursing's *Let's talk about restraint* (RCN, 2007).

Share training resources

The Patient Safety First website will have an area where you can share local training materials such as lesson plans, PowerPoint slides, and teaching exercises or case studies. Learn from other organisations' materials, upload and share materials that you develop, and comment on how useful you find any commercially available training packages.

4. Actions for Facilities leadership: Create a safer environment
Instigate a rolling programme of environmental risk assessment

The hospital environment can have an impact on the risk of falls or injury, and though the environment is usually less significant than the risk factors intrinsic to the patient, environmental improvements can benefit all patients. Facilities leadership is integral to ensuring an effective rolling programme of environmental risk identification and environmental improvement. The environment needs to be assessed thinking of the most vulnerable patients who are using it – those with poor eyesight, mobility problems, confusion, etc.

Environmental factors that may impact on the risk of falls include:

- Flooring surface, density, sheen, and pattern (which can create an illusion of steps or obstacles to patients with impaired vision or cognitive impairment)

- Cleaning methods and cleaning timing

- Lighting, including light gradients (moving from brightly lit into dimly lit areas) and daylight glare ('sun in my eyes') from windows

- Call bells, including visibility as well as reach

- Design of doors, including the effect of any automatic closures

- Distance between hand holds, hand rails, beds, chairs and toilets

- Line of sight for staff observing patients

- Signposting, particularly of toilets

- Trip hazards including steps, clutter, medical devices, oxygen tubing, and cables

- Furniture stability when leaned on

- Range of equipment available for patients with different needs and of different sizes, including beds, mattresses, trolleys, commodes, wheelchairs and armchairs.

Clear accountability structures for any environmental improvement plans

Where there is identified risk, the facilities leadership should ensure that there are systems in place to create, implement and monitor improvement plans. Facilities leaders are also well placed to ensure the effect of the environment on falls prevention is on the agenda for any refurbishment projects or new builds, when there are major furniture purchases, or when cleaning contracts or schedules are under review.

System in place for urgent environmental repairs

Assess how long on average it takes to carry out repairs that could create a falls hazard (e.g. failed lighting or damaged flooring) from the time of initial request. You may need to review your processes to create a system which allows urgent environmental repairs to be resolved in a timely manner.

Part C:
Actions for frontline staff to reduce harm from falls

The traditional approach to falls prevention programmes is to identify interventions that are helpful for all patients, with higher levels of interventions for patients at higher risk, and an even higher level for patients who have fallen. All of these are important, but in this 'How to' guide we're reversing the order, and asking you to consider a set of actions in this order:

1. After a patient has fallen in hospital
2. For patients who need an in depth assessment and plan of care
3. Basic assessments and safety for all patients

We've changed the order because we want to change the emphasis - the best evidence for successful falls prevention interventions is from studies that focussed the majority of their effort on more vulnerable groups of patients (whether that was patients needing elderly medicine care, patients on rehabilitation wards, patients admitted with a fall or fracture, or patients with currently unsafe mobility).

This reversal of the normal order also mirrors the approach taken by the *Falls and Bone Health Toolkit* (RCP 2009) which emphasises that there are still major gaps in secondary falls prevention and osteoporosis treatment even for the most unarguably high risk group - patients who have been admitted to hospital after fracturing their neck of femur. If we can't get falls prevention right for this most vulnerable group, we're not likely to get it right for patients whose risk of falls is only theoretical.

1. After a patient has fallen in hospital

After a fall has occurred the initial focus has to be on rapidly identifying and treating any resultant injury, but not all hospitals have a clear protocol for physical assessment after a fall including which physiological observations should be checked, at what intervals and for how long.

In addition to this they need to identify and treat any new physical cause, because in a hospital setting a fall can be an ominous sign of a change in their underlying illness (for example a further myocardial infarction, or an extension of a stroke).

It is also extremely important that any fall triggers a review, to identify what further actions might be taken to prevent the patient falling again, and for learning that might prevent other patients falling.

What are we trying to achieve?

In order to agree your aim you need to understand the current state. Find out if you already have a protocol in place for what should happen after a fall. If you do, perform an audit to find out your current level of compliance. This helps you to set a realistic timeframe for your goal. An example of an aim statement could be:

Within twelve months all patients who experience a fall will have all the physiological observations and injury checks specified in our local falls protocol recorded immediately after the fall.

How will we know that a change has been an improvement?

Create your operational definition

In the example above this means establishing what observations and actions are appropriate after a fall.

The measure that requires reporting to Patient Safety First via the on line extranet site is:

Measure	How to calculate	Guidance
Percentage of patients who after a fall have appropriate observations documented	• Determine the numerator: the number of patients in the sample who after a fall had the appropriate observations documented • Determine the denominator: the total number of patients reviewed • Calculate the percent of observations completed by dividing the numerator by the denominator and multiplying the result by 100	• Use a random sample of patients who fell* • Use incidents reports as primary data source • Report data monthly

* You may decide to track 100% if your total number of reported falls is low.

What changes can we make that will result in an improvement?

- Review your post-fall protocol. Find out if you already have a protocol in place for what should be done in the event of a fall. If you do, review it based on the information in this document and with the staff who use it to see if it needs to be improved. If you do decide to review your post-fall protocol, use the Plan Do Study Act (PDSA) cycle approach, outlined in *The Quick Guide to Implementing Improvement* at www.patientsafetyfirst.nhs.uk

- Make referring to the post-fall protocol easy. Consider putting a prompt sheet or flow chart with key actions after a fall in all high risk patient folders or somewhere easily accessible to staff. Put a box with the action points on a care plan designed for high risk patients.

Suggestions for what should be in a post-fall protocol include:

- Identification and treatment of any injury, including comfort, reassurance and pain relief where necessary, including how to refer onwards or access advice during days, nights, and weekends

- Taking and documenting appropriate observations, including observations to identify medical causes of the fall (e.g. temperature to identify if any new febrile illness) as well as observations to detect injury, especially hip fracture, and observations to detect head injury in line with the NICE guidance (2007)

- Making safe any obvious environmental hazard that contributed to the fall

- Informing the patient's relatives where appropriate, and involve them in any actions planned to reduce the risk of further falls

- Completing an incident form even if the patient suffered no physical harm, including all the key information for learning discussed earlier

- If there is serious injury, undertaking a full root cause analysis

- Taking action to reduce the risk of this patient falling again – refer to the steps outlined in the next section 'Patients who need an in depth assessment and plan of care'

- For 'serial' fallers, consider bringing in more senior staff or peers from a neighbouring ward; fresh eyes might identify further potential interventions.

2. Patients who need an in depth assessment and plan of care

If numerical risk assessment tools were truly effective at identifying high risk patients, this section could have a much simpler title of 'high risk patients' but in the absence of an effective tool the term 'high risk' can be misleading. However, one size fits all is not appropriate either, because the successful falls prevention studies described earlier suggest special efforts need to be focussed on patient groups who are more vulnerable

than the average hospital patient to falling (whether that was patients needing elderly medicine care, patients on rehabilitation wards, patients admitted with a fall or fracture, or patients with currently unsafe mobility).

So this part of the 'How to' guide requires you to decide which patient groups, more vulnerable to patients' falls, that you want to focus extra fall prevention efforts on. For these patients, aim to deliver an in-depth falls prevention assessment – a prompt list of falls risk factors that could be treated or better managed, not a numerical scoring tool - with interventions to reduce any identified risks planned and implemented.

These vulnerable groups will vary between hospitals but should always include:

- All patients admitted because of a fall
- All patients who fall in hospital
- All patients on wards whose specialism makes them falls 'hotspots' (e.g. wards specialising in vascular dementia, or brain injury rehabilitation).

Other vulnerable groups you may locally decide routinely need an in depth assessment and plan of care for falls prevention could include:

- Patients who try to walk alone although unsafe to do so
- Patients who express fear of falling
- Patients whose relatives are worried they might fall
- Patients with confusion and agitation
- All patients on elderly rehabilitation wards
- All patients on older people's mental health units
- All patient on elderly medicine wards
- Patients calculated as 'high risk' **if** the tool used has been locally validated for sensitivity and specificity as described earlier
- Any patient groups that your own locally reported data identifies as frequent fallers.

Also, patients may automatically be considered at risk after key interventions (e.g. post operatively or post sedation of any kind) and specialist departments might wish to add their own pragmatic triggers, for example considering patients whose consciousness level is affected by alcohol to be temporarily at high risk of falls.

What are we trying to achieve?
An example of an aim statement might be:

Within 1 year all patients who have been identified as needing an in depth assessment and plan of care will have documented evidence that this was completed and implemented.

How will we know that a change has been an improvement?

Create your operational definition

Depending on the patient mix in your hospital and your vulnerable patient groups, you may have identified a range of patient groups that you consider are in need of an in depth assessment and plan of care for falls prevention (see the section below **Content to consider for local in depth assessment and care plans**) and identifying a random sample could be difficult.

To make data collection simpler we suggest **acute hospitals** focus their measurement on patients admitted because of a fall – as these can be identified easily either through admission statistics, or through positive responses to the question on history of falls we suggest asking all patients on admission (covered in the next section on the four basics of falls prevention). **Community hospitals** might expect all their inpatients to be in need of an in depth assessment and plan of care for falls prevention, whilst **mental health units** might consider all patients on wards for older people with dementia are in need of an in depth assessment and plan of care for falls prevention.

Decide what measures will inform you of your progress and how you are going to collect them.

The measure that requires reporting to Patient Safety First via the on line extranet site is:

Measure	How to calculate	Guidance
Percentage of patients admitted with falls who have an action plan	• Determine the numerator: the number of patients in the sample with documented evidence that an in depth assessment and plan of care was completed and implemented • Determine the denominator: the total number of patients admitted with falls whose notes were reviewed • Calculate the percent of observations completed by dividing the numerator by the denominator and multiplying the result by 100	• Use a random sample of patients admitted with falls for acute hospitals • See notes above for community hospitals and mental health units • Exclude patients for whom an in depth assessment would be impossible or inappropriate (e.g. unconscious or totally immobile) • Report data monthly

What changes can we make that will result in an improvement?

Find out if you already have a document for patients who have been identified as needing an in depth assessment and plan of care for falls prevention. If you do, review it based on the information in this document and with the staff who use it to see if it needs to be improved. Elements that could be included are shown on the following two pages, and the subsequent completed example is based on the York RCT.

Content to consider for local in depth assessment and care plans:

Local documentation could be provided in the format of a core care plan, a care pathway document, or a care bundle – but the important thing is for your documentation to ensure each risk factor that has been identified leads to a clear plan of action. Elements to consider include:

- Ensure a review of the patient's **medication** has been completed. Care plans could prompt staff with names of commonly used medications that increase the risk of falls, or have a sticker you can use to make a request to the ward pharmacist for an expert review

- Investigate **medical causes** leading to the high risk status e.g. delirium, cardiovascular factors, other physiological factors. Groundwork for medical interventions are nursing observations including ward tests of urine, lying and standing blood pressure, and temperature. Stickers could be used to make a request to the ward doctors and consultants for an expert review on their next 'rounds'

- Check for any **cognitive problems** with simple tests like the Abbreviated Mental Test Score (Hodkinson, 1972). Recent changes or fluctuating cognitive problems can indicate delirium, requiring medical attention, and previously unnoticed cognitive impairment should prompt a medical review, with referral to psychiatric liaison services if appropriate

- Test the patient's **vision**. Rehabilitation wards should have access to a proper Snellan chart, but even in acute care environments a basic check for major visual problems (asking a patient to tell pen from key from scissors at a beds' length away) should be feasible. Develop a system so that where necessary glasses can be replaced and lens prescriptions updated*, or internal referrals made to the ophthalmology service for conditions such as cataract

- Ensure referrals are made for **physiotherapy** staff to review the patient's balance and mobility and provide appropriate advice and/or mobility aids

- For longer stay patients (e.g. in community hospitals, intermediate care, or rehabilitation settings) evidence based **exercise** programmes for fall prevention may be appropriate

- Ensure referrals are made to **occupational therapy** staff who can assess the safest ways for patients to carry out activities of daily living

- Communicate the advice from physiotherapy and occupational therapy to all staff, and ensure **mobility aids** remain within reach

- Assess the patient's **continence.** Are there remedial causes of incontinence or urgency, such as dehydration, urinary tract infections or constipation? Would the patient benefit from a tailored routine of offers to assist to the toilet?

- Undertake an **osteoporotic risk factors review** and if necessary investigate and treat (as per NICE osteoporosis guidance,2008)

- High risk of falling needs to be considered as part of the **discharge planning** and aftercare, therefore those involved in this planning need to be aware

- **Bedrail risk and benefit** review is a complex issue and some notes on the safe and appropriate use of bedrails can be found in **Appendix 2**.

* Patients aged over 60 who are unable to leave home unaccompanied and/or are in receipt of certain benefits may be entitled to a free visit from an optician. An internet search using your county or city plus 'optician home visits' should give an idea of services available locally.

An example of an individually targeted falls care plan

Based on the York randomised controlled trial (Healey et al. 2004)

GOAL: To reduce likelihood of falls whilst maintaining dignity and independence	State action taken:
Call. Ensure call bell explained and in reach. Consider alternatives for patients unable to recall use of call bell e.g. brass bell, move bed in sight of nurses' station	*Call bell in reach but may forget, will probably call her daughter's name instead – moved to Bay 3 within earshot of nurses' station*
Eyesight. Ensure eyesight is checked wearing glasses if worn; able to identify pen/key from bed length away? If eyesight too poor to identify objects, ask doctor to review. Ensure glasses/hearing aid are worn or within reach	*Glasses broken in fall at home – family have ordered replacement and hope to collect 7/3. Has fair distance vision without them. Have suggested they order spare pair too.*
Bed and bedrails. Assess the need for bedrails (refer to policy). If likely to fall from bed, ensure the bed is at the lowest possible height unless this would reduce mobility or independence. Consider use of special low bed	*Bedrails not appropriate as mobilises alone, even though unsteady, and might be confused enough to climb over. Bed set at right height for safe move from sitting to standing*
Medication. Check for medication associated with falls risk e.g. anti-depressants, sleeping tablets, sedation, anti-psychotics. Ask doctor to review (do not stop abruptly)	*On temazepam 10mg nocte for some years – to review at ward round*
MDT Ensure medical staff, physiotherapist, OT, social worker, etc. aware of the patient's risk, frequency, nature, seriousness of falls. *(Local protocol or pathway would cover expected actions by MDT members e.g. mini-mental, osteoporosis check, mobility aid review etc.)*	*SHO aware* *Physio & OT referral sent 3/2/07* *Noted on discharge plan*
Footwear. Check footwear for secure fit, non-slip sole, no trailing laces. Ask relatives to supply safer replacement or supply new slippers from ward store. Consider slipper socks in bed for patients at risk of falling at night	*Backless slippers – not safe. Daughter cannot get replacement until Saturday. Provided with slippers from ward store.*

Place. Nurse in most appropriate place on ward for their needs e.g. close to nurses' station, close to toilet, quietest area (considering other patients' needs as well)	*In bay 3 nearest toilet and within earshot of nurses' station*
Lighting. Consider lighting best for patient e.g. bedside lamp left on overnight, night light in toilet	*Will have overhead lamp on low overnight*
Urinalysis. Perform urinalysis. Send MSU if positive to blood, nitrates or protein	*Nitrates+++ protein++ blood trace* *MSU sent 3/2/07*
Toilet. Does the risk of falls appear to be associated with patient's need to use toilet? If so, a routine of frequent toilet visits may be helpful in preventing falls	*Currently frequency/urgency – will offer toilet every hour whilst awake*
L&S BP. Check L&S BP and record. If deficit exists inform doctor, advise patient on slow movement from lying to standing, consider anti-embolism stockings	*See TPR chart – no deficit*
Inform. Provide falls leaflet to patient/ family, engage them in care plan, check contact wishes in event of fall.	*Patient and daughter have leaflet and care plan explained. Contact wishes entered by NOK number.*

3. Basic assessments and safety for all patients

Almost all patients can be considered at risk of falls at some part in their hospital stay. Even young generally healthy patients may be briefly at risk whilst recovering from anaesthetic.

Many more patients will neither be young and healthy, nor fall into one of the very vulnerable groups discussed earlier. For these patients your standard admission formats are vital for identifying issues with mobility, balance, continence, confusion, or nutrition - all of which need assessment and action in their own right, as well as because of their contribution to falls risks. Documentation formats alone of course are not enough, and you may wish to discuss at your strategic falls group any local audits which identify gaps in how well these general assessments are completed, especially how often identified problems lead to actual changes in care or treatment.

In addition to this, the 'How to' guide suggests focussing on one basic assessment and three safety measures that would be relevant to every patient. We have called these the 'four basics'.

What are the four basics, and why are they important?

1. Ask patients on admission if they have fallen recently

The recent national *Falls and bone health audit* (RCP 2009) indicated around 10% of hospitals didn't include any question about recent falls in their admission documentation. Even where a question about recent falls is included in documentation formats, it is not always completed, and positive responses are not always acted on. But this question is vital to identifying patients who may need an in depth assessment and plan of care for falls prevention such as the one shown earlier.

How the question is asked – whether as falls in the last three months, or month, or just 'recently', or as one question in a locally validated numerical assessment tool – is less important than ensuring it is asked.

2. Avoid unnecessary hypnotic and sedative medications

Whilst there are numerous medicines that can increase risk of falling, a review on drugs and falls in the older population from the Centre for Reviews and Dissemination (University of York, 2004) demonstrated that "a consistent risk relationship between the use of psychotropic drugs and falls was identified". The increased risk was associated predominantly with antipsychotics, benzodiazepines, sedative-hypnotics and antidepressants. Hartikainen et al. (2007) in their systematic review also found that "The main group of drugs associated with an increased risk of falling was psychotropics: benzodiazepines, antidepressants, and antipsychotics."

In 2007, the Journal of the American Geriatrics Society reported "Use of antipsychotics for treatment of agitation and behavioural difficulties in elderly patients (for which they are not approved) was associated with 1.6 to 1.7 times greater mortality". (Shrank et al, 2007). In 2004 the NICE guidance on falls recommended: "Older people on psychotropic medications should have their medication reviewed, with specialist input if appropriate, and discontinued if possible to reduce their risk of falling."

Some of the successful falls prevention studies described in the introductory section of this guide included an element of reviewing medications and discontinuing them when appropriate, as did a successful care home RCT (Zermansky et al. 2007). More recently, a study awaiting publication (Close et al. 2009) found that around two-thirds of hospital patients who fell had received at least one medication that affects the central nervous system in the 24 hours prior to their fall, with some receiving as many as seven different types. By avoiding new prescriptions for these medications wherever possible, and reviewing prescriptions for patients on admission, the hospital expenditure on these types of medication reduced steadily, and there was a corresponding decrease in falls.

The aim is to avoid unnecessary or inappropriate prescribing of these medicines, not to set a numerical target for reduction of their use, in case patients who do require them find it difficult to obtain them or do not receive them at all. Therefore the selected measure for this element is evidence that the patient has had their medicines reviewed whether or not this led to decisions to continue or to discontinue sedative or hypnotic medication.

Note that patients habituated to sedatives or hypnotics should not have them abruptly discontinued, but gradually reduced.

3. Ensure patients have appropriate footwear

Hospital patients may be admitted in emergencies without bringing slippers or shoes, their slippers may be put out of use by an episode of incontinence, or they may have oedema or wound dressings that mean their normal footwear doesn't fit.

Many hospitals' falls prevention policies offer advice on safe footwear, but just giving advice may not be helpful for a patient ill in hospital without regular visitors willing to go shopping for them, and hospitals may only have disposable foam slippers available, which are not easy to walk safely in. Many patients need to wear anti-embolism stockings, which if worn without slippers or shoes can slide on vinyl flooring, especially if talcum powder has been spilt.

There is no definite evidence that improving footwear reduces the risk of falls, but some of the successful falls prevention studies described in the introductory section of this guide included footwear replacement, and having shoes or slippers that are safe to walk in is a basic aspect of safety and dignity in normal life.

4. Ensure call bells are within reach

Although many of the patients who fall in hospital may be too confused or too independent to use a call bell if they need help before mobilising, any patient who might be able to use the call bell should have it within sight and within reach. A proportion of national reports and local reports of falls in hospital note that the patient was mobilising alone when they have been unsuccessful in calling for help (although the cause of these falls is usually multifactorial rather than solely related to call bell access).

What are we trying to achieve?

A separate section on each of the basic assessments and safety measures follows, to provide information on how to ensure consistent measurement of each check and ways to make improvements in each. However, for the purposes of the Campaign an 'all or none' approach (as used in the measurement of implementing care bundles) has been taken to simplify the measurement process. This approach also provides more clarity on how often you are getting all the basics right – for all patients.

An example of an aim statement could be:

95% of patients will receive the 'four basics' by August 2010.

In recognition of the fact that this takes considerable time to achieve you may wish to set milestones or 'half lives' to keep the momentum going over time. For example:

50% of patients will receive the 'four basics' by January 2010.
80% of patients will receive the 'four basics' by April 2010.

How will we know that a change has been an improvement?
Creating your operational definition

In relation to this measure you will need to determine what constitutes "appropriate footwear". Some guidance on defining this can be found in **Appendix 3**.

There is one measure that requires reporting to Patient Safety First via the on line extranet site:

Measure	How to calculate	Guidance

Percentage of patients receiving the four basics of falls prevention	• Determine the numerator: the number of admitted patients in the sample receiving all the four basics
	
	• Determine the denominator: the total number of patients reviewed
	
	• Calculate the percent compliance by dividing the numerator by the denominator and multiplying the result by 100
		• Use a random sample of admitted patients. For privacy and dignity reasons, we suggest excluding patients who are in their bed or chair with curtains drawn round
		
		• Primary data sources could be:
		
		  - Case notes (checking evidence of falls question and medicines review)
		
		  - Direct observation (footwear and call bells), including asking the patient if appropriate if they can reach their bell
		
		• Remember this is a YES/NO outcome — only patients receiving all four basics are recorded as compliant
		
		• Remember to give credit where a reason for exclusion is documented. For example, patients clearly too ill to use a call bell or wear slippers (e.g. unconscious)
		
		• Perform the audit weekly but report to the extranet monthly. Aggregate the weekly results by totalling the numerator and denominator separately and entering them onto the extranet. The extranet will perform the relevant calculation.

A sample audit form can be found in **Appendix 4**.

Information gained regarding these basics should be reviewed in conjunction with the information collected on incident reports of falls citing one or more of them as a possible contributing factor.

Auditing your performance against this measure should commence even if you do not have the structures in place for how to find out all of the necessary information. This means that initially your compliance is likely to be extremely low. As you gradually improve the recording of the compliance with each element this will be reflected in the overall rate of compliance observed.

What changes can we make that will result in an improvement?

1. Ask patients on admission if they have fallen recently

- If your current admission documentation does not include any prompts reminding staff to ask patients and their relatives about recent falls, consider adapting your documentation to include it. If you do this, use the Plan Do Study Act (PDSA) cycle approach, outlined in *The Quick Guide to Implementing Improvement* at www. patientsafetyfirst.nhs.uk

- Remember, how the question is asked – whether as falls in the last three months, or month, or just 'recently', or as one question in a locally validated numerical assessment tool – is less important than ensuring it **is** asked.

2. Avoid unnecessary hypnotic and sedative medications

How you build this check into your existing local processes will depend on what those processes are.

- Where ward pharmacists routinely carry out medicines reconciliation on admission, they would be ideally placed to make such a check, or it could be made part of consultant rounds, formats used by nurses or doctors on admission, or part of handovers between day and night shifts

- Some hospitals have helped nursing staff to prompt medical staff to consider the need for review by placing a 'please review' sticker in the patient's notes at the place that will be used to write up the next doctor's round, or provided pharmacists with tiny dot stickers with a falls risk symbol to place against high risk medications on the patients' medication charts

- The aim is to review hypnotic and sedative medicines prescribed for all patients and discontinue them unless the benefits clearly outweigh the risks. For habituated patients, tapered withdrawal rather than abrupt discontinuation is vital

- Where possible, non pharmaceutical methods of behaviour control should be used. It is inevitable however that for some patients these medicines are necessary (such as cases of psychosis)

- You may just focus your local operational definition on review on admission, or you may set it to require evidence that where the patient is on sedatives or hyponotics, the need for them has been reviewed at least weekly

- Consider adding a tick box into the admission proforma to state that the need for ALL prescribed medicines, particularly hypnotics and sedatives, has been reviewed. The input of the pharmacist in your falls team is vital in considering the risk /benefit analysis for other medicines you include in this part of the intervention.

3. Ensure patients have appropriate footwear

You will almost certainly need to develop a system for the prompt provision of safe footwear where patients have no safe footwear and cannot get it provided by relatives.

- Encouraging the hospital shop to stock slippers in a range of sizes will help patients or relatives with money to buy them. Some hospitals with shops on the premises selling aids to independent living have set up systems where if patients need special slippers for medical reasons – perhaps because of oedematous or bandaged feet – the shop will supply these and invoice the hospital

- Checking your hospital's current expenditure on disposable foam slippers may help you make the case that buying a stock of new slippers in a range of sizes may actually prove cheaper

- Your 'League of Friends' or similar patient support charities may be willing to fund the cost of start-up stock.

Case study (Source: *Slips, trips and falls in hospitals*)

One of the largest randomised controlled trials of implementing multifaceted interventions took place over six elderly medicine wards and two community hospitals in York.

As one part of a range of multi-faceted interventions, the trial secured a small budget to buy some proper fitting slippers in a range of sizes, for giving to patients when there are no relatives to bring suitable footwear in. These were kept in a cupboard to which the staff had easy access – they didn't have to fill out a form or make a requisition. The slippers cost less than £4 and were cheaper than constantly replacing the disposable foam slippers, which barely lasted for a day.

4. Ensure call bells are within reach

- For patients with communication or cognitive impairment who are unable to use a conventional call bell, consider what alternatives could be made available, for example, voice intercoms, simple traditional hand bells or movement alarms may be appropriate substitutes for some patients

- Remember that for most patients, call systems need to be visible as well as in reach

- Ensure patients feel confident in using their call bells; for example, some patients might think they are only allowed to use it for emergencies

- For all other patient areas, including toilets, bathrooms and day rooms, access to call bells should be considered as part of the environmental reviews described earlier in Part B. For example, toilet pull cords are often hung against the wall behind the patient (so may be within reach in theory, but not visible to the patient) or may be out of reach whilst washing at a sink. Accessibility of bells in these areas can be assessed by the Facilities department and plans for organisation wide improvements developed.

Closing comments

Reducing fall rates and the resultant harm is infinitely more complex than any brief guide such as this can convey. It is hoped that this document will help staff apply a sound improvement approach to this area and provide useful suggestions for actions that will help them to set and/or achieve realistic goals.

However this document is used whether in full, in part or simply as inspiration for other relevant actions, its ultimate aim is to prompt teams to begin or increase their efforts to make a real difference in an area that causes pain and distress to many people every day.

Useful Links

UK hospital focused falls prevention resources:

- NPSA, The third report from the Patient Safety Observatory: *Slips, trips and falls in hospital.* 2007.
http://www.npsa.nhs.uk/nrls/alerts-and-directives/directives-guidance/slips-trips-falls/

- *What's new in preventing falls in hospitals and care homes?* Dr David Oliver's presentation to the British Geriatric Society Conference, November 2008.
http://www.bgs.org.uk/Publications/powerpoints/Aut08_Falls_Oliver.pdf

- Protection of vulnerable adults
http://www.dh.gov.uk/en/SocialCare/Deliveringadultsocialcare/Vulnerableadults/DH_261

International hospital focused falls prevention resources:
NOTE: Some of the following 'How to' guides reflect different legislative requirements and healthcare practice in other countries, and some may not incorporate the most recent research on problems with numerical falls risk prediction scores.

- Institute for Healthcare Improvement (IHI) *Transforming Care at the Bedside. 'How to' guide: Reducing Patient Injuries from Falls* available at
www.IHI.org

- On line network – Prevention of falls network Europe (ProFaNE)
http://profane.eu.org/

- ECRI Falls Prevention Resources
http://www.ecri.org/falls

- VA National Patient Safety Center Falls Prevention Toolkit
http://www.patientsafety.gov/SafetyTopics/fallstoolkit/index.html

- Massachusetts Hospitals
http://www.patientsfirstma.org/index.cfm

- Joint Commission Resources, Good Practices in Preventing Patient Falls
http://www.jcrinc.com/patientfalls

- Australian Commission on Safety and Quality in Healthcare. *Preventing Falls and Harm from Falls in Older People. Best practice 'How to' guidelines for Australian hospitals and residential aged care facilities.*
http://www.health.gov.au/internet/safety/publishing.nsf/content/FallsGuidelines
(These guidelines are currently under review and expected to be re-released in August 2009)

- Registered Nurses Association of Ontario. *Prevention of falls and falls injuries in the older adult. Nursing Best Practice 'How to' guidelines* 2005
http://www.rnao.org/Page.asp?PageID=924&ContentID=810

References

American Geriatrics Society, British Geriatrics Society, American Association of Orthopaedic Surgeons panel on falls prevention 2001 *Guideline for the prevention of falls in older persons* J Am Ger Soc vol. 49, pp. 664-672

Centre for Reviews and Dissemination, University of York 2004 *Preventing falls and subsequent injury in older people* http://www.york.ac.uk/inst/crd/EHC/ehc24.pdf

Close J 2009 – early findings from ongoing research presented at conference are available at http://www.anzfpconference.com/

Coussement J , De Paepe, L , Schwendimann R, et al. *Interventions for Preventing Falls in Acute- and Chronic-Care Hospitals: A Systematic Review and Meta-Analysis* JAGS 2009 56 1 29-36

Fonda D, Cook J, Sandler V, Baily M. *Reducing serious falls-related injuries in hospital.* Med J Australia 2006; 184: 379-382

Haines TP, Hill K, Walshe W et al. *Design-related bias in hospital falls risk screening tool predictive accuracy evaluations: Systematic Review and Meta-Analysis.* J Gerontol 2007; 62A (6): 664-72

Haines T, Bennell K, Osborne R et al. *Effectiveness of targeted falls prevention programmes in the subacute setting.* BMJ 2004; 328: 676-9

Haines T Massey BB Varghesse P et al. (2007) *Inconsistency in Classification and Reporting of In-Hospital Falls.* Journal of the American Geriatrics Society. 57(3):517-523, March 2009

Hartikainen S, Lönnroos E and Louhivuori K *Medication as a Risk Factor for Falls: Critical Systematic Review* The Journals of Gerontology Series A: Biological Sciences and Medical Sciences 62:1172-1181 (2007)

Healey F, Monro A. Cockram A, Adams V, Heseltine D. *Using targeted risk factor reduction to prevent falls in older hospital inpatients. A randomised controlled trial.* Age and Ageing 2004; 33: 390-5

Healey F, Oliver D, Milne A. (2008) *The effect of bedrails on falls and injury: a systematic review of clinical studies.* Age and Ageing 37(4):368-78

Hodkinson, HM 1972. *Evaluation of a mental test score for assessment of mental impairment in the elderly.* Age and Ageing 1 (4): 233-8. Access a copy at http://en.wikipedia.org/wiki/Abbreviated_mental_test_score

Mental Capacity Act (2005) HMSO: London

Murray GR, Cameron ID, Cumming RG. *The consequences of falls in acute and subacute hospitals in Australia that result in proximal femoral fracture.* Journal of the American Geriatrics Society. 2007; 55(4): 577-82

NICE 2004 'How to' guideline 21. *Falls: the assessment and prevention of falls in older people* 2004. www.nice.org.uk. (quote taken from section 1.7.1)

NICE 2007 *Triage, assessment, investigation and early management of head injury in infants, children and adults* www.nice.org.uk

NICE 2008 *Primary prevention of osteoporosis and Secondary prevention including strontium ranelate* www.nice.org.uk

NPSA 2007 *Slips, trips and falls in hospitals* www.npsa.nhs.uk

Oliver D. *Preventing falls and falls-injuries in hospitals and long-term care facilities* Reviews in Clinical Gerontology 2008 17 2 75-91

Oliver D, Papaiaoannou A, Foster G et al. *The utility of the STRATIFY score in predicting falls in older hospital patients.* Systematic Review and Meta-Analyses. Journal of the American Geriatrics Society. 2007

Oliver D, Connelly J, Victor C et al. *Strategies to prevent falls and fractures in hospitals and care homes and effect of cognitive impairment.* Systematic review and meta-analyses. BMJ 2007; 334: 82-7

Oliver, McMurdo M, Daly F, Martin F. *Risk factors and risk assessment tools for falls in hospital inpatients.* A systematic review. Age and Ageing 2004; 33: 122-30

Royal College of Nursing *Let's talk about restraint* 2007 http://www.rcn.org.uk/__data/assets/pdf_file/0007/157723/003208.pdf

Sari AB, Sheldon TA, Cracknell A et al.. *Sensitivity of routine system for reporting patient safety incidents in an NHS hospital.* BMJ 2007;334:79

Shrank W, Polinski J, Avorn J *Quality Indicators for Medication Use in Vulnerable Elders.* Journal of the American Geriatrics Society. 55 Supplement 2:S373-S382, October 2007.

Stenvall M Olafsson B Lundstrom M et al. *A multidisciplinary, multifactorial intervention program reduces postoperative falls and injuries after femoral neck fracture.* Osteoporos Int. 2007 February; 18(2): 167–175

Von Renteln-Kruse W, Krause T. F*alls events in geriatric in hospital patients. Results of incident recording over three years.* Z Gerontol Geriatr 2004; 37: 9-12

Zermansky A., Alldred D., Petty D. et al. *Clinical medication review by a pharmacist of elderly people living in care homes: randomised controlled trial.* Age and Ageing 2006; 35: 586-91

Appendix 1:
Types of training available in human factors/ non technical skills

Falls risk scores need to be tested in real life, based on how ward staff usually complete them, rather than on how they are completed by specialists. They also need to be tested on how well they work for your patient population, regardless of how they worked in an original research study, where the patient group could be very different. NHS organisations need to check a representative sample of falls risk scores in patients' records and compare these with numbers of patients who actually fell, in a grid like the one below:

	Patients who did fall	Patients who did not fall
Patients predicted as being at low risk of falls	Patients in this box were incorrectly identified as low risk, and missed out on falls prevention	Patients in this box were correctly predicted as low risk
Patients predicted as being at high risk of falls	Patients in this box were correctly predicted as high risk, but their falls were not successfully prevented	Patients in this box may have had their falls successfully prevented, but high numbers here would suggest your falls risk score is over-predicting falls risk in your patients, which could be wasting resources

To make these calculations much easier, access the electronic workbook at www.patientsafetyfirst.nhs.uk.

Appendix 2:
Using bedrails safely and effectively

Falls from bed in hospital make up around 20% of all falls; in England and Wales, over a single year there were around 44,000 reports of patients falling from bed. This included eleven deaths and around 90 fractured neck of femurs. Bedrails are not usually appropriate for a patient who could be independently mobile without them, nor for a patient with capacity who does not want them, nor for a patient with severe confusion who is mobile enough to climb over them. But for patients who request bedrails, or who are incapable of leaving their bed without help, bedrails are unlikely to act as restraint, or restrict independence, and may reduce the risk of injury from falls.

So organisations face the challenge of supporting good clinical decision making – ensuring bedrails are used where patients would benefit, but not where they would do more harm than good. To support them in this, a range of teaching materials, audit tools, draft policy, staff information posters, and bedside decision making tools can be found to support the NPSA Safer Practice Notice Using Bedrails Safely and Effectively at: http://www.npsa.nhs.uk/nrls/alerts-and-directives/notices/bedrails/

Bedrails need to be well designed, correctly fitted, and regularly maintained if they are not to cause harm through patient entrapment; deaths from bedrail entrapment occur in hospital settings in England and Wales around once in every two years, and could probably have been avoided if MHRA advice had been followed:

- MHRA Device Bulletin DB2006(06) The safe use of bedrails www.mhra.gov.uk
- MHRA Device Alert 2007/009 Bed Rails and Grab Handles www.mhra.gov.uk

It is particularly important that trusts take corporate action to identify and remove unsafe bedrails; some are still relying on formats that require staff to measure the gaps between bedrail bars each time they use the bedrail!

Further reading:

Healey, F. Oliver, D. Milne, A. (2008) *The effect of bedrails on falls and injury: a systematic review of clinical studies*. Age and Ageing 37(4) p368-378.

Healey F & Oliver D (2009) *Bedrails, falls, and injury: evidence or opinion?* Nursing Times 6th July 2009.

Royal College of Nursing *Let's talk about restraint* 2007 http://www.rcn.org.uk/__data/assets/pdf_file/0007/157723/003208.pdf

Appendix 3:
What is appropriate footwear?

You need to set your own operational definition, but this should be about basic safe footwear - if you manage to ensure nearly all of your patients have this, you could then aim higher. There is no no definitive research on the safest type of footwear and different patients may have different footwear needs but there is some footwear that is clearly unsafe such as those described below. Work with the physiotherapist and occupational therapists in your falls group to determine what footwear you will consider safe and keep provisions of.

Probably unsafe are:

• Bare feet

• Socks only

• Anti-embolism stockings only

• Bandages or dressings only

• Shoes or slippers that are visibly too big

• Shoes or slippers that are visibly too small

• Lace up shoes without laces, or with trailing laces

• Shoes or slippers worn with squashed backs

• Novelty slippers

• Backless shoes or slippers except for very confidently mobile patients

• Foam disposable slippers except for very confidently mobile patients

• High heeled shoes except for very confidently mobile patients.

You must allow for patient choice in this measure – count yes if the patient has been offered a safer alternative but refused.

Where patients are not getting out of bed at all, the measure can be counted as yes.

Appendix 4:
Example of care bundle audit tool
(Sample form for auditing falls basic assessment and safety compliance)

	Asked about recent falls?	Medication reviewed?	Appropriate footwear?	Call bell in sight and in reach?	ALL FOUR ELEMENTS COMPLETE?
Patient 1	✓	✗	✓	✗	✗
Patient 2	✓	✓	N/A	N/A	✓
Patient 3	✗	✗	✓	✗	✗
Patient 4	✓	✗	✗	✓	✗
Patient 5	✓	✓	✓	✓	✓
Patient 6	✓	✗	✓	✗	✗
Patient 7	✓	✓	✓	✓	✓
Patient 8	✗	✓	N/A	N/A	✗
Patient 9	✓	✓	✓	✓	✓
Patient 10	✓	✗	✓	✗	✗
% COMPLIANT	80%	50%	90%	60%	40%