

ICSI Institute for Clinical Systems Improvement

Health Care Protocol Prevention of Falls (Acute Care)

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Evidence Grading System

A. Primary Reports of New Data Collection:

- Class A: Randomized, controlled trial
- Class B: Cohort study
- Class C: Non-randomized trial with concurrent or historical controls
Case-control study
Study of sensitivity and specificity of a diagnostic test
Population-based descriptive study
- Class D: Cross-sectional study
Case series
Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

- Class M: Meta-analysis
Systematic review
Decision analysis
Cost-effectiveness analysis
- Class R: Consensus statement
Consensus report
Narrative review
- Class X: Medical opinion

Citations are listed in the guideline utilizing the format of (*Author, YYYY [report class]*). A full explanation of ICSI's Evidence Grading System can be found at <http://www.icsi.org>.

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Foreword

Introduction

Falls are a leading cause of hospital-acquired injury, and frequently prolong or complicate hospital stays. Falls are the most common adverse event reported in hospitals. (National Center for Injury Prevention and Control: Falls among Older Adults: An Overview. <http://www.cdc.gov/ncipc/factsheets/adultfalls.htm>)

Reviews of observational studies in acute care hospitals show that fall rates range from 1.3 to 8.9 falls/1,000 patient days and that higher rates occur in units that focus on eldercare, neurology and rehabilitation (*Oliver, 2010 [C]*). When this initial protocol was developed in 2008, best reported performance in fall rates was in the range of 2.5-3.5 falls/1,000 patient days, with injury rates as low as 0.1/1000 patient days (*Lancaster, 2007 [D]*).

Application of interventions similar to those suggested in this protocol have achieved further reduction in fall and injury rates. A four-year fall rate reduction of 63.9% to 1.3 falls/1,000 patient days with only two major injuries over four years has been reported by Staten Island University Hospital (*Weinberg, 2011 [C]*). The work group members shared their local falls rate data, as well as their most effective local interventions and finds that fall rates under 2.0 falls/100 patient days are achievable.

The purpose of fall prevention efforts is actually injury prevention and safety. There is greater focus on falls injury prevention as public reporting of fractures, serious injury and death has become available. The panel is aware of published and local reports of injury free intervals over one year in duration in acute care hospitals (*Weinberg, 2011 [C]*).

The current Minnesota Adverse Health Care Events Reporting Law requires the reporting of falls for those associated with a serious disability in addition to those associated with a death. In contrast, in Minnesota, the reporting of fall rates to the Minnesota Hospital Association is on a voluntary basis, with the information available to other members. Lowering fall rates is associated with a decrease in the injury rate, and voluntary reporting leads to awareness of better performing hospitals in terms of what fall rates are achievable; it may help drive improved performance (*Minnesota Department of Health, 2012 [D]*; *Lancaster, 2007 [D]*; *Serious Reportable in Massachusetts Acute Care Hospitals [NA]*).

A leading goal of the patient safety movement is the reduction and eventual elimination of falls that result in injury. Therefore, falls prevention programs should focus on factors associated with increased injury risk. The epidemiology of falls with injury may vary by hospital type, such as academic or non-academic, or physical plant factors. A retrospective cohort study of nine midwestern hospitals stated that injury was associated with older age, unassisted falls, bathroom falls and in patient care areas outside of the patient's room (*Krauss, 2007 [C]*).

Findings such as these influence the rationale for commonly used interventions. These include close observation, visual identifiers and communication of falls risk to all departments and disciplines.

In spite of extensive research on falls risk factors and the development of a number of falls risk instruments, protocols are applied inconsistently, and risk factor directed interventions are far from standardized.

This was evident in the key findings from the 2012 Minnesota Adverse Health Care Event on reportable falls with injury.

Many reportable falls were related to problems with the fall risk assessment process, including inconsistent application of interventions to the patient's fall risk, miscommunication of fall risk, or failure to properly assign patients to high risk.

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Foreword

One third of reportable falls with injury were related to bathroom use, over half were associated with "culprit medications" such as antianxiety or antipsychotic medication, and 40% occurred within 30 minutes of an intentional (hourly) rounding visit.

The Minnesota report also cites interventions in a large Minnesota Metro Hospital System as contributing to an 18% decrease in harmful falls from 2010 through 2011, which included:

- highlighting display of fall risk in the EMR
- removal of sleep medication from order sets
- rapid response team deployment for injury assessment in unwitnessed falls (*Minnesota Department of Health, 2012 [D]*).

Research on falls reduction in acute care hospitals has yielded relatively few randomized trials, and falls prevention interventions are complex and multifactorial. Randomized trials are unlikely to be the main source of clinical evidence in this situation (*Oliver, 2010 [C]*).

The best guide to effective fall prevention strategies is effective adoption of the key common elements in better performing falls programs and hospitals. These strategies are then adapted and modified according to the characteristics and abilities of that hospital.

As suggested by the results achieved in the Staten Island University Hospital report, ensuring compliance with risk assessments, incident investigations, confronting problem issues, and accountability for missed prevention opportunities may be more important than which risk assessment is used or which communication tool is used (*Weinberg, 2011 [C]*). The work group agrees that auditing for compliance with risk assessments, increased observation and surveillance or other interventions are key elements in achieving culture change. The work group has combined current knowledge of falls risk factors and interventions in the acute care setting into a suggested best-practice protocol. When these elements are applied, falls and injury rates tend to be lower; when vigilance or organizational support falters, falls and injury rates tend to climb. It is only when application of these interventions becomes normative behavior that a true culture of safety is achieved.

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Scope and Target Population

This protocol will include recommendations for a risk assessment for falls in hospitalized patients, and will focus on the strategies and interventions required for the prevention of falls and eventual elimination of falls with injury in acute care settings. The target population is adult patients in an acute care setting.

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Aims

1. Eliminate all falls with injury through a falls prevention protocol in the acute care setting. (*Annotations #1, 2, 3, 4, 5, 6*)
2. Increase the percentage of patients who receive appropriate falls risk assessment and falls prevention interventions. (*Annotations #2, 6*)

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Clinical Highlights

- Best practice results have only been achieved when there is significant organizational support for falls reduction across departments and disciplines. (*Annotation #1; Aims #1, 2*)
- Transparency of falls rates by sharing between hospital units, hospitals and hospital systems or public reporting has a positive effect on falls and injury reduction. (*Annotation #7; Aim #1*)
- Accountability through auditing of compliance with falls risk assessments and interventions has a positive effect on reducing falls rates and injury (consensus of panel members). (*Annotation #7; Aim #1*)
- Best practice in falls reduction includes:
 - falls risk assessment
 - visual identification of individuals at high risk for falls
 - falls risk factor directed interventions
 - standardized multifactorial education including visual tools for staff, families and patients. (*Annotations #1, 4, 5; Aims #1, 2*)
 - **Teach back** – a method of patient education that includes scripting such as "just to make sure I did a good job in teaching you how to prevent a fall while you are here, can you tell me the most important thing you can do to prevent a fall?"
- There should be interdisciplinary collaboration on falls prevention at the time of admission between admitting clinicians having first contact with the patient, including admitting physicians, pharmacists and nurses. (*Annotations #2, 4; Aim #2*)
- Incorporate team-based success factors associated with the best reported reductions in falls and injury rates including:
 - Ensuring falls risk assessments, investigation of falls incidents, confronting problem issues, and accountability for missed opportunities.
 - Interdisciplinary discussion of patient falls risk during daily rounding.
 - Medication review for all patients at risk for injury and/or risk for falls.
 - Nurse rounds to include reinforcement of education patients/families role in falls risk prevention (use of call light, assist with ambulation to bathroom, etc.).
 - Implementation of interdisciplinary post-fall huddle to discuss action plan after patient fall event.
- Falls risk assessment (regardless of age) should include:
 - a determination through the use of an assessment tool that the patient has fallen in the past year,
 - a functional assessment test – visual observation of the patient's mobility for those not confined to bed rest, and
 - an injury risk assessment.
- Acute care settings should implement a visual identification system for patients at risk of falling. (*Annotation #4; Aim #2*)
- Communication of falls risk across departments and disciplines (including to attending physicians) should be reliable. (*Annotation #4; Aim #2*)
- Multifactorial interventions that increase observation and surveillance have been found to be effective on falls. (*Annotations #5, 6; Aim #2*)

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Implementation Recommendation Highlights

The following system changes were identified by the protocol work group as key strategies for health care systems to incorporate in support of the implementation of this protocol.

- Organizational leadership needs to identify and support an interdisciplinary falls prevention team composed of clinical and non-clinical staff to oversee the falls prevention program. The team should include at least one clinician with a background or additional education in falls prevention.
- Organizations need a reliable process in place for a comprehensive, interdisciplinary clinical assessment, communication and risk factor intervention plan.
- Falls prevention education should be provided to patients, families, clinical and non-clinical staff.
- Organizational leadership needs to support systems that promote learning, ongoing evaluation and improvement of the falls prevention program including analysis of falls rates and injuries (falls/1,000 patient days and falls with injury/1,000 patient days). The analysis should report on the internal effectiveness (validity) of falls screening and effectiveness of interventions applied to those screened at risk.
- Organizations need to support team-based success factors associated with the best-reported reductions in falls and injury rates including:
 - Ensuring fall risk assessments, investigation of fall incidents, confronting problem issues, and accountability for missed opportunities (*Weinberg, 2011 [A]*).

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Related ICSI Scientific Documents

Guidelines

- [Preventive Services for Adults](#)

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Definitions

Clinician – All health care professionals whose practice is based on interaction with and/or treatment of a patient.

Falls: a fall is defined as any unplanned descent to the floor.

Falls with injury: a five-point injury scale is recommended:

1. No apparent injury
2. Minor: bruises or abrasions as a result of the fall
3. Moderate: an injury that causes tube or line displacement, a fracture, or a laceration that requires repair
4. Major: injury that requires surgery or a move to intensive care unit for monitoring a life-threatening injury
5. Death

Injuries rated as 3-5 are reported as falls with serious injury/1,000 patient days. Mandatory reporting of serious injury tends to go into categories 4 or 5. These are reported as serious reportable events/100,000 patient days to facilitate comparisons.

(*Commonwealth of Massachusetts Department of Public Health, 2009 [NA]; Lancaster, 2007 [D]*)

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Protocol

Perform risk assessment to identify risk factors (*Annotation #3*)

- Test for cognitive dysfunction (dementia, delirium)
- Assess gait and mobility function
- Identify potential medication factors
- Perform an environmental safety assessment

Communicate risk factors (*Annotation #4*)

- Use visual communication tools
- Inform patient and family of risks
 - Describe organization's falls prevention program – discuss how patient/family can assist with falls prevention and when/how to contact staff when necessary
 - Patient education
- Communicate patient falls risk to all members of the health care team

Perform risk factor interventions (*Annotation #5*)

- Establish universal falls interventions for all patients
- Implement behavioral interventions
- Implement impaired mobility interventions
- Perform environmental rounds

Observation and surveillance (*Annotation #6*)

- Monitor at regular intervals – suggest hourly
- Reassess:
 - At shift change
 - If change in clinical status
 - Following a fall

Auditing, continuous learning and improvement (*Annotation #7*)

- Perform safety huddles
- Create action plan for future

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Annotations

1. Obtain Organizational Support for a Falls Prevention Program

It is clear that in order to maximize the effectiveness of patient safety programs like falls prevention strategies, involving multiple levels of management and taking accountability as a team are encouraged. The organization should not only implement standard interventions for fall prevention but also foster a culture to promote accountability, safety awareness and teamwork of the interdisciplinary team. This approach has been attributed to falls reduction rates (*Weinberg, 2010 [C]*).

It is clear that application of a falls risk tool or prevention protocol by itself will have little impact on rates of falls and falls with injury. Organizational support for making falls injury prevention a highly prioritized, well-publicized organizational aim that touches all disciplines and departments is necessary for achieving best results. This includes involving and enlisting the support of medical staff of health care organizations to a much greater degree than has been done in the past. This support has been linked to falls reduction rates (*Healey, 2007 [R]; Lancaster, 2007 [D]*).

Best-practice results have been achieved only when there is significant organizational support for falls reduction across departments and disciplines.

- The organization has an interdisciplinary team in place to oversee the strategic plan for the falls prevention program.
 - The falls prevention program plan is reviewed by the team and updated periodically throughout the year.
 - The organization utilizes a "Unit-Based Champion" approach to falls prevention (or a hospital-wide champion approach for smaller facilities).
 - The organization has falls prevention program policies and procedures that are designed for differential interventions based on specific populations and units.
- The organization supports recommendations from the falls prevention team on equipment and environmental safety.
 - The organization has monthly falls reviews by unit leadership and staff.
 - The organization has a post-falls assessment process to identify trends and opportunities to improve safety.

Education of Falls Reduction Policies and Procedures

All clinical and non-clinical staff should understand the hospital's policies and procedures in place for the prevention of falls. Education measures should include:

- All staff are educated on falls prevention indicators and post-falls protocols for specific organization.
- Education is ongoing and includes brief understanding of the assessment tool and the implications and strategies for falls prevention.
- All staff should be aware of environmental indicators that can be a potential hazard to patient safety/falls.

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2. Establish a Process for Evaluation of the Hospitalized Patient on Admission for Risk of Falling

The question for all hospital staff assessing a patient is "Will this patient fall?" Staff members include physicians, nurses, nursing assistants, transport aides and support staff. In answering this question, current available literature suggests falls risk prediction can be condensed to three elemental questions:

1. Has the patient fallen in the last year?
2. Does the patient look like he/she is going to fall? In other words, does the patient have a clinically detectable abnormality of gait or balance?
3. Does the patient have an additional risk factor for an injurious fall?

The systematic review (*Ganz, 2007 [M]*) of falls prediction in community dwelling elderly found that the most consistent predictors of future falls were a history of falls in the last 12 months (likelihood ratio range 2.3-2.8) and clinically detected balance and gait abnormalities (likelihood ratio range 1.7-2.4). It is important to note that visual impairment, medication variables, and impaired cognition or activities of daily living deficits did not consistently predict falls across studies of community dwelling elderly.

These domains are often included in assessments of falls risk upon patient admission to acute care hospitals. Nursing assessment instruments have been developed in the last 10-15 years to address Question #2 in a more standardized manner to better predict falls risk on admission and to direct falls prevention resources to those patients. Typically, these assessments are done by nursing staff. The addition of a physician assessment as part of an admission order set had additional value in identifying patients at risk and reducing falls rates on a neurology unit at Mayo Clinic (*Hunderfund, 2011 [C]*). The admitting physician simply selected "patient is" or "patient is not at high risk of falls by physician assessment" on the electronic admission order set. Falls in the seven quarters after implementation were significantly lower than the nine quarters preceding implementation as compared to non-intervention units.

There is no disagreement that some type of falls risk assessment should occur at patient admission to the acute care hospital. Falls risk assessment in the emergency department has also been mentioned as a part of a multifactorial falls prevention protocol (*Lancaster, 2007 [D]*) and adopted by some of ICSI's member hospitals.

Standardized Assessment Tool

A number of falls risk assessment instruments (the Hendrich I and II, Johns Hopkins, Innes, Morse, STRATIFY, Downton, Tinetti and Schmidt) have been developed and validated. To date, there has been no consensus as to whether any of these assessment instruments is better than others in falls prediction. In fact, even the best of these tools in terms of sensitivity and specificity underpredicted and overpredicted falls in acute care settings (*Healey, 2007 [R]*). Falls risk assessment instruments by themselves do not prevent falls, but rather only predict them. In addition, many of these tools may take four to seven minutes per patient to complete, straining nursing resources (*Vassallo, 2005 [C]*).

If a risk factor score is used, a further assessment that identifies and treats the modifiable (also termed personal) risk factor is required. Oliver, a developer of the STRATIFY tool, concluded in a recent systematic review that the focus of falls risk assessment should shift directly to identifying and treating those modifiable risk factors. This review included many commonly used scales such as STRATIFY and Morse. It did not include the Hendrich I scale, as the data were insufficient to calculate odds ratios and confidence intervals (*Oliver, 2004 [M]*).

The more recently developed and commonly used Hendrich II falls risk model was not included in the above review. This model includes an easily performed assessment of mobility, names modifiable risk factors, and directly links to interventions or a set of strict falls risk precautions. A score of 5 or greater is classified as

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high falls risk. Widespread use and incorporation of the Hendrick II into the electronic medical record has been linked to achievement of falls rates in the "better performer" category of 2.5-3.5 falls/1,000 patient days (*Lancaster, 2007 [D]*; *Premier safety Web site retrieved 8/2007*; *Hendrich, 2003 [C]*).

Since our 2008 revision, the work group has become aware of successful falls reduction programs employing the Hopkins or Morse falls assessments. These are non-proprietary; however, the successful falls reduction programs appear to couple these assessments with a mobility test such as Get Up and Go or additional injury assessment (ABCs).

A comparison of the domains or variables contained within each of these instruments is noted below:

Comparison of the Hendrich, Morse, and Johns Hopkins Tools

Risk Factors for the Morse Tool	Score	Risk Factors for the Hendrich II Tool	Score	Risk Factors for the JHH Tool	Score
History of falls	25		7	Falls history	0-5
Secondary diagnosis	15				
Ambulatory aid	30 or 15			Patient care equipment	0-3
IV/heparin lock	20			IV in patient care equipment	
Gait transferring	20 or 10	Get Up and Go Test	0-4	Mobility	0-6
Mental status	15	Confusion/disorientation	4	Cognition	0-7
		Altered elimination	1	Elimination	0-4
		Dizziness/vertigo	1	Dizziness mentioned in mobility	
		Depression	2		
		Gender (male)	1		
		Any Anti-epileptics	2	Medications (high-risk drugs)	0-3
		Any benzodiazepines	1	See medications	
				Age	0-3
				Automatic risk factors	Low or high

Regardless of the falls assessment tool selected, internal validation of the instrument within the hospital should occur on a periodic basis (*Healey, 2007 [R]*). It is suggested that this assessment include completing a 2x2 table of falls prediction. From this table, sensitivity and specificity at the facility can be calculated on a periodic basis to determine if the risk assessment tool is performing with adequate sensitivity. In general, a facility's trustee of falls prevention efforts would want to minimize the number of false-negatives in screening for falls risk. This would optimize the negative predictive value of negative screens and optimize sensitivity. In addition, other factors such as cost, training, and nursing time to administer the screen should be considered.

Risk category	Fall N (%)	Did not fall N (%)
Assessed as high fall risk		
Not assessed as high fall risk		

The alternative to using a falls risk assessment instrument is a simple screening protocol of determining if a patient has fallen in the last year, and performing a mobility assessment, either a Get Up and Go Test or a timed Get Up and Go Test in addition to the clinical judgment of the person assessing the patient (*Mathias, 1986 [C]*). However, the work group is aware of no published reports of better performance in falls and falls injury rates without using a falls risk assessment instrument.

The Get Up and Go Test and the Timed Get Up and Go Test are available at <http://www.fpnotebook.com/Geri/Exam/GtUpAndGTst.htm>.

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If either of these screening measures suggests increased falls risk, the assessor should determine the modifiable risk factors and identify falls prevention interventions triggered by the presence of that risk factor.

On the basis of the current literature, this work group concluded that:

- falls risk scores are not an essential part of falls prevention policies;
- the falls risk score may under- or overpredict patient falls;
- any falls risk score should be tested at the facility for specificity and sensitivity;
- of the currently available falls risk scores, the Hendrich II has been associated with better performance benchmarks in falls prevention in a major multihospital health care system. Non-proprietary assessments such as the Morse scale or Hopkins scale should be coupled with a mobility test such as a Get Up and Go Test, or nursing observation and judgment on the patient's mobility.
- a second stage of assessment for injury risk modifiable (personal) risk factors leading to risk factor specific interventions should be done. These factors include **age, bone, coagulations** and **surgery** (ABCs).

Injury Risk Assessment

- There has been increased focus on assessing each patient's risk for injury, as well as his/her risk for falling.
- There are certain populations that, if they fell, would be at much greater risk for serious injury.
- The common categories that have been used recently are age (often 85 years old and older), bone (osteoporosis, conditions that are risk factors for osteoporosis, metastases to the bone, etc.), and coagulation (on anticoagulation therapy or bleeding disorder). Another category could include major surgery (surgical wound that could dehiscence with a fall). These have been referred to as the ABCs (Quigley, 2008 [D]; Currie, 2004 [M]). Additional information available at <http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=nursehb&part=ch10>.
 - In addition to utilizing a falls risk tool, risk for injury assessment should include the nurse and interdisciplinary team using clinical judgment and critical thinking skills to identify patients at risk. Even if a patient does not have a diagnosis of osteoporosis or an International Normalized Ratio (INR) greater than 2, but DOES have a condition you feel would increase his/her risk for injury if he/she were to fall, consider designating him/her at increased risk for injury.
 - Use of critical thinking and clinical judgment should be used to override the result of any fall assessment tool assessment.

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3. Perform Risk Assessments to Identify Risk Factors

Cognitive Dysfunction as a Risk Factor

When discussing the cause of many geriatric syndromes, it is evident that multiple factors work together to cause the syndrome at hand. The issue of falls in the elderly is no different. One of the well-established risk factors for falls in the inpatient setting is cognitive dysfunction. Practically, this can be thought of in two ways: patients with preexisting cognitive impairment or dementia, and those who develop an acute state of severe confusion, or delirium. Patients with dementia are known to be at higher risk for delirium, but delirium can occur in patients with baseline normal cognitive function. This section of the protocol will focus on these two conditions as independent risk factors for falls.

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Annotations

Delirium

Delirium has many synonyms, including acute confusional state, altered mental status, reversible dementia, and organic brain syndrome. More than 30% of geriatric hospitalized patients will suffer from delirium at a point during their hospitalization. Approximately 15% of elders present to the emergency room with delirium. Patients may be agitated or hypoactive, or may hallucinate or demonstrate emotional lability.

All patients over the age of 65 years on admission, regardless of admitting diagnosis, should be assessed for both dementia and delirium. Geriatric patients with acute illnesses are known to be at a higher risk of falling. This group's review of the literature has identified multiple systematic reviews and original articles demonstrating that patients with delirium or confusion are at higher risk of falls. In one review, altered mental status was identified as the most common risk factor. Other studies have consistently demonstrated that patients with confusion are at higher risk for falls as compared to those without confusion. Agitation in a case-control study (*Oliver, 1997 [C]*) demonstrated an odds ratio of 20.9 [9.62:45.62].

Recognition of delirium is particularly important as a modifiable risk factor for falls, and an interdisciplinary approach is needed to screen patients. We advocate the use of the four-item Confusional Assessment Method (CAM) (*Inouye, 1990 [C]*), as it has a sensitivity of 94-100%, a specificity of 90-95% and a high inter-observer reliability. This tool is easy to administer and use, and requires very little training. See the [Implementation Tools and Resources Table](#) for CAM.

Dementia

Patients with dementia include those with a diagnosis of Alzheimer's disease, vascular dementia, Lewy-Body dementia, fronto-temporal lobe dementia, and those associated with other disorders. Such patients normally have slower reaction times and demonstrate impaired judgment. In addition, these patients often have impaired mobility, are admitted from nursing homes, have poor baseline functional status and impaired strength, and are at higher risk for significant polypharmacy, all of which are known to place patients at higher risks for falls.

Cognitive impairment has been well established as a risk factor for falls. In one study (*Tinetti, 1995 [B]*), the relative risk of falling for patients with an Mini-Mental Status Exam (MMSE) of less than 20 was 2.6 (95% CI:1.7:4.0). Patients with preexisting cognitive dysfunction often have impaired executive functioning and lose insight, particularly with the inability to differentiate between a safe and unsafe environment.

In the inpatient setting, we recommend two approaches in screening patients for cognitive impairment. The first is the Mini-Cog, a clinical tool advocated by the Society of Hospital Medicine as a screening instrument for dementia. It involves three items plus a clock-drawing test, can be administered in three minutes, and is highly reproducible and reliable (*Borson, 2000 [C]*). Two other methods of screening include the Folstein Mini-Mental State Examination and the Kokmen Short Test of Mental Status. Both can take up to 10 minutes to administer and have been well validated in previous studies in screening for dementia. The MMSE is well accepted and commonly used. However, a significant disadvantage is that it is copyrighted and would require a license for use in institutions. Patients with a MMSE score of less than 24/30 are at higher risk for falls. The Kokmen is in the public domain, has been shown to be just as effective as the MMSE, and can be used free of charge. An alternative screening method includes the Short Portable Mental Status Questionnaire (*Pfeiffer, 1975 [C]*). This 10-item questionnaire is easy to administer, and patients with five or greater incorrect items have been demonstrated to be at a higher risk of falls (*Tinetti, 1988 [B]*).

See the [Implementation Tools and Resources Table](#) for Mini-Cog, MMSE and Kokmen Short Test of Mental Status Sources.

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Impaired Mobility

Impaired mobility has been identified as being a risk factor for falling. This includes impaired gait, weakness, decreased lower extremity mobility, and decreased coordination and balance. The literature also suggests that patients who fell were more likely to have been using an assistive device (*Evans, 1998 [M]*).

Physical assessment of the patient's mobility is an important factor in the identification of patients at risk for falling. The literature contains several different tools to use but does not adequately define the "best" tool. Examples of tools include the Timed Get Up and Go Test, the Tinetti, and the Berg.

The Get Up and GoTest takes about five minutes and has patients perform six tasks. It is scored on a five-point scale, with 1 being normal and 5 being severely abnormal. The Tinetti Assessment tool takes 10 to 15 minutes. It has been shown to have good interrater reliability. Patients who score 19 or below are at high risk for falls. Patients who score between 19 and 24 are at risk for falls. The Berg Balance Measure tool takes 15 to 20 minutes. The patient performs 14 tasks to challenge his/her balance. The higher the score, the more independent the patient (*Podsiadio, 2000 [C]*; *Berg, 1989 [C]*; *Mathias, 1986 [C]*; *Tinetti, 1986 [C]*).

Medications

According to the latest Minnesota Adverse Health Events public report (*Minnesota Department of Health, 2012 [D]*), over half of all patients with a serious fall event were taking one or more types of medications known to increase falls risk within 24 hours of their fall. Several drugs are associated with increased risk for falls in patients of all ages. Agents that have been associated with falls are anticonvulsants, antidepressants, antipsychotics, benzodiazepines, Class 1A antiarrhythmic, digoxin, opiates and sedative hypnotics.

A subset of patients at risk include the elderly population, who are more prone to adverse effects of medications due to changes in metabolism and slowed clearance from renal and hepatic impairment. In addition, drug interactions leading to adverse effects by additive or synergistic effects may be more prevalent in elderly people as they are often on multiple medications (*Neutel, 2002 [D]*). **Patients on four or more drugs are at greater risk of falls.**

Particular drugs may be an independent risk factor in itself in causing falls in the elderly, but other parameters relating to drug use can increase risk even further. For example, with benzodiazepines the risk increases in the first two weeks, and higher doses have higher risk (greater than 8 mg diazepam or equivalent) (*Tinetti, 2003 [R]*; *Leipzig, 1999 [M]*). Benzodiazepines have been recognized as independent risk factors for falls among elderly people. Benzodiazepines with a shorter half-life were positively associated with falls during hospital stay. The risk increases if other psychotropic drugs or diabetic medications are being used, if the patient has cognitive impairment, if comorbidities are present, if greater than 80 years of age, or if they were in hospital longer than 17 days. Long-acting benzodiazepines increase falls and the risk of hip fracture (*Rhalimi, 2009 [C]*; *Passaro, 2000 [D]*).

There is an associated risk of falls when patients use zolpidem, meprobamate or calcium channel antagonists. When an alternate medication can be selected, this is advised. It has been demonstrated that use of polypharmacy may represent an exposure to medications that increase the probability of falls. Falls risk increases from 25% with one medication to 60% with six or more concurrent medications (*Rhalimi, 2009 [C]*).

Psychotropic medications have about a twofold increased risk of falls and fractures. Similarly there is strong evidence for antidepressants increasing falls risk – particularly the tricyclics. Antidepressants and antipsychotics can cause drowsiness, gait imbalance, lack of coordination or slow reaction, confusion, orthostatic hypotension and involuntary muscle contractions, all of which can lead to a fall (*Rhalimi, 2009 [C]*; *Leipzig, 1999 [M]*).

There are different mechanisms by which medications increase the falls risk. A key mechanism seems to be the orthostatic hypotension (defined as a drop in systolic blood pressure greater than 20 mmHg or a drop in

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diastolic blood pressure greater than 10 mmHg on standing). Antihypertensive medications, antiarrhythmics, antianginals and anti-parkinsonian drugs can cause low blood pressure or orthostatic hypotension, which can cause dizziness and fainting. A very slow heart rate can also cause falls.

When given to hospitalized patients, zolpidem has been shown to be associated with adverse central nervous system (CNS) reactions such as confusion, daytime somnolence and dizziness. (*Chang, 2011 [C]*).

Diuretics can increase frequency of urination, leading to frequent bathroom trips, and can provoke a fall. Low potassium can cause weakness, leading to a fall.

Allergy and cold medications (antihistamines/diphenhydramine, etc.) can cause drowsiness, confusion and dizziness. Diabetic medications, in particular oral hypoglycemics, in the setting of acute hospital stays can cause very low blood sugars, leading to weakness, confusion and dizziness, which in turn can cause a fall.

Considerations for improvement in assessing falls risk and medication management:

- 1) Sleep Hygiene Program
 - a. Interview and assess patient's need for sleep aid. Assess patient's past methods of falling asleep and past use of medications and/or non-pharmacological methods to induce sleep.
 - b. Assess the physicians, nurses, pharmacists and other team member's knowledge on use of sedatives for patients.
 - c. Review standardized order sets for individualized need of any sedative/hypnotic ordered for patient. Consider removal of sedative/hypnotic on order set.
 - d. Consider non-pharmacological versus pharmacological interventions to aid in enhancing sleep.
- 2) Medication Assessment and Adjustments
 - a. Complete falls medication assessment review by physician, nurse, pharmacist and others.
 - b. Identification of medications that will place patient at risk for injury by the health care team.
 - c. Unnecessary medications discontinued.
 - d. Medications with overlapping side effects that promote confusion and sedation will be reevaluated and altered appropriately.
 - e. Minimizing the use of zolpidem will be discussed by the health care team.

Further information is located in the [Implementation Tools and Resources Table](#) section.

Environmental

Physical hazards are often involved in patient falls. An environmental assessment or checklist can often identify modifiable risk factors to falls, such as floor mats, lack of handrails in bathrooms, poorly anchored rugs or clutter (*Agostini, 2001 [R]*).

See the [Implementation Tools and Resources Table](#) section for an example of environmental checklists.

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4. Communicate Risk Factors

Visual Communication

Identify those at risk by placing visual identifiers such as signs on room and bathroom, wristbands, buttons, stickers, posters, chart identifiers, door/name identifiers, etc.

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Members of the health care team, in all departments, should be educated in recognizing these cues. Also, all family and visitors should be educated in recognizing and understanding the identifiers and be aware of how to obtain help from appropriate staff.

Patient-specific falls risk status must be identified clearly to alert all staff handling the patient and anyone entering the room. Icons can be very helpful for health care clinicians to identify what a patient's risks may be, but they need to be communicated by all staff and agreed upon to be effective. Optimizing use of visual cues (i.e., assist of two for transfers, needs assistive device, history of falls) by members of the health care team to clearly alert all staff of a patient's specific falls risk is important for follow-through and to facilitate immediate recognition/interpretation. When utilizing visual cues, it is important to consider sign fatigue (Hurley, 2009 [C]).

Examples of visual identifiers/cues

Catch a Falling Star Program: falling star on door to patient room, yellow armband on patient, non-skid slipper socks on patients.

Ruby Slippers Program: Ruby Slippers or Red Star sign on door to patient room, red non-skid slipper socks on patient's feet, red stickers on front of chart/cardex, special ruby slipper marker on patient's census board.

SAFE Program: "Stay Alert for Falls Event": yellow SAFE sign on door, yellow armband on patient, non-skid slipper socks on patient.

LAMP Program: "Look at Me Please": yellow lamp sign on door, yellow armband on patient, non-skid slipper socks on patient.

IRIS Program: "I Require Intensive Surveillance:" sign on door, pink armband in place, non-skid slipper socks on patient.

Visual Cues Program from The Joint Commission Journal on Quality and Patient Safety July 2007 (Lancaster, 2007 [D]).

Communication to Patients and Families

- Notify patient and family of falls risk upon admission, as risk changes, and upon discharge.
- Describe the organization's falls prevention program, and educate the patient and family in recognizing and understanding visual identifiers.
- Clarify reasonable expectations of the organization.
- Discuss how the patient and family members can assist with falls prevention and when/how to contact staff when necessary.
- Document evidence of patient education regarding falls risk, and patient and family members understanding of the risk and prevention measures.

(Tinetti, 1994 [B])

Patient Education

- Evidence shows that the best falls prevention programs are multifactorial, education being one of those pieces (Ryu, 2008 [D]).

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- Clinical practice guidelines from the United States and Canada both recommend patient education as a part of falls prevention (*Ryu, 2008 [D]*). A successful method of education is the "teach back" process, which is a method of patient education that includes scripting such as "Just to make sure I did a good job in teaching you how to prevent a fall while you are here, can you tell me the most important thing you can do to prevent a fall?"
- A multimedia or complete patient education program has significantly reduced falls in people with no cognitive impairment. This includes written education regarding falls data and causes of falls, self-assessment of risk, problem area identification, development of preventive strategies and behaviors, goal setting and review along with video/DVD material highlighting these same points and then followed with a trained professional working with the patient (*Haines, 2011 [A]*).

Communication to Members of the Health Care Team Who Come in Contact with the Patient

The goals of communication include seamless transition of patient information from one unit to another, one caregiver to another and one department to another. Organizations must implement a standardized approach to hand off communications consistent with The Joint Commission's National Patient Safety Goals. In a hospital, such interactions may occur upon arrival to or from the following patient care areas:

- Radiology
- Procedure rooms
- Surgery
- Rehabilitation therapy (includes physical therapy, occupational therapy, speech and language pathology therapy)

Visual identifier clues (ruby slippers, falling stars, wristbands, etc.) should be active and prominent so every department that is dealing with the patient should be able to relate to the high-risk status of the patient. Members of the health care team, in all departments, should be educated in recognizing these cues.

A transport procedure checklist documents the information for transfer of the patient and responsibility for care from one department and caregiver to another. Similarly, some facilities use a patient passport, which is a comprehensive checklist that must be completed and signed before a patient can leave the care unit. Such a checklist should include the falls risk status and recommendations such as "Do not leave the patient unattended."

It is critical that all patients at high risk for falls are identified to everyone when the patients are being transported to other disciplines, and evident to those transferring. It is imperative that someone is assigned the leadership role to enforce accountability of staff and follows through to the next person in contact with the patient (*Weinberg, 2011 [C]*). An interdisciplinary safety team may promote a safety culture to empower staff to participate. Leadership needs to be engaged with staff to promote a safe patient handling culture (*Minnesota Department of Health, 2012 [D]*).

If a patient receives medications, such as midazolam and lorazepam for procedures or radiology tests, communicate this to the nursing staff on the patient's unit. A handoff communication protocol such as SBAR (Situation, Background, Assessment, Recommendation) is recommended. The patient should then be monitored closely for the next 24 hours as the risk for falling increases with these medications.

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5. Perform Risk Factor Interventions

Universal Falls Interventions

These interventions should be present for all patients regardless of risk of falling

- Familiarize the patient to the environment.
- Have the patient "teach back" call light use.
- Keep the call light within reach at all times.
- Keep patient's personal possessions within reach.
- Have sturdy handrails in patient bathrooms, room and hallway.
- Keep the hospital bed in low position with brakes locked.
- Provide non-slip, well-fitting footwear for the patient.
- Utilize night light or supplemental lighting.
- Keep floor surfaces clean and dry. Clean up all spills promptly.
- Keep patient care areas uncluttered.

A falls prevention electronic toolkit has been successful in acute care hospitals as a way to assess for falls risk, provide bedside alerts to all stakeholders, educate on fall interventions and prevention, and document falls prevention in the plan of care (*Dykes, 2010 [A]*). This software with its multifaceted capabilities has proven to reduce falls.

Other falls precautions that should be incorporated with the toolkit would be the following:

- A staff member should remain with the patient when in the bathroom.
- Perform intentional Rounding Behaviors at least hourly.
- Transfer belts should be available at the bedside.
- Assess need for home safety evaluations, including physical and occupational consultation as part of the discharge planning needs.
- Assess the need for 1:1 monitoring, and arrange as needed.
- Use chair or bed alarm.

Behavioral interventions can be used in patients with dementia in order to prevent falls. There is limited success with pharmacotherapy. These interventions can be implemented by the interdisciplinary team and should be communicated to the patient's primary care clinician in order to prevent falls in the outpatient setting. Maintain consistency in procedures, routines and schedules, and staff allocation. Identify possible triggers for agitated, impulsive behavior, such as a particular medication, time of day, infection or loud noise, and minimize them when possible.

Refer the patient to occupational and physical therapists to assist with behavioral management, to develop a plan to maximize orientation, awareness and function, and to determine whether gait aids are needed and used appropriately and correctly.

Impaired mobility interventions should be interdisciplinary in nature. The following interventions have been employed by hospital systems to reduce falls rates. However, the literature is contradictory in determining which intervention is most effective. Hospitals generally use multiple interventions to produce their improvement in falls rates (*Barnett, 2002 [R]*).

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Exercise reduces the rate of falling in older people. Decreased muscle strength, impaired mobility and gait are some common risk factors that help predict falls. These risk factors can be modified by an exercise program prescribed by a physical therapist (*Sherrington, 2008 [M]*).

Interventions:

- Patients should wear their shoes or non-skid footwear (some have used red slippers for easy identification by staff)
- Physical therapy and occupational therapy consults for evaluation and possible treatment
- Instruct the patient to rise slowly
- Early and regular ambulation of high-risk patients
- Repeated education of safety measures to the patient and family members
- Assist high-risk patients with transfers
- Use of patient's regular assistive device such as a walker or cane, or equipment recommended by physical therapy or occupational therapy
- Regularly scheduled assistance with toileting
- Provide supportive chairs with armrests
- Apply hip protectors to patients at high risk for hip fracture
- Adequate daytime and nighttime lighting for ambulation and activities of daily living
- Use of elevated toilet seats
- Use of a gait belt or transfer belt during mobility activities

(*VA National Center for Patient Safety, 2004 [R]; Evans, 1998 [M]*)

Environmental Interventions

Facility management, nursing and biotech staff should perform environmental rounds to confirm that hallways and patient areas are well lit, uncluttered and free of spills – also that locked doors are kept locked when unattended, handrails are secure, and tables and chairs are sturdy. Biotech staff should inspect assistive devices regularly. Nursing staff should confirm that patient rooms are set up in a way that minimizes the risk of falling. All staff should make sure that unsafe situations are dealt with immediately.

An example of environmental rounds can be found at <http://www.health.vic.gov.au/qualitycouncil/>.

In recent reviews, the authors reported on hip protectors, removal of physical restraints, falls alarm devices and other physical environmental changes.

Hip protectors: These are a consideration in hospital units where strict falls precautions or close observation is problematic. Examples might include rehabilitation units, behavioral health units or geriatric psychiatry units.

Hip protectors were associated with reduction in hip fracture (ratio 0.67) but not in falls rates (*Oliver, 2006 [M]*). The variability of hip protector types and patient tolerance of the protectors remain significant barriers that preclude their being a standard component of strict falls precautions (*Healey, 2007 [R]*).

Removal of physical restraint: A meta-analysis that included a hospital stroke unit showed a reduced rate for falls (*Oliver, 2006 [M]*).

Falls alarm devices: One study in a nursing home reported a significant reduction in falls with alarm devices (*Oliver, 2006 [M]*). Associations with falls reduction in hospitals are far less clear. Another recent

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literature review found only one small hospital study concluding that they were not effective in falls prevention. Suggested reasons for this lack of effectiveness are related to temporal factors. Patients with severe gait instability who will fall as soon as they get out of bed or a chair will not be protected by these devices (Healey, 2007 [R]).

Beds: Beds that have low height have recently been associated with falls reduction. These beds have various features but must be able to get within 8-10 inches off the floor. One large health care system reported that integration of beds with features of pressure redistribution surfaces, built-in alarms and ability to get within 8-10 inches off the floor was linked to a 9% falls rate reduction within five months. The average falls rate after bed integration of 2.43 falls/1,000 patient days is on the lowest end of reported falls rates in the literature to date (Lancaster, 2007 [D]). If subsequent reports bear these findings out, hospitals will need to consider facilitywide bed replacement as a key component of their falls and injury reduction strategy.

Other environmental factors: One small general hospital study found that wood flooring was associated with a significantly lower injury rate (Healey, 1994 [D]).

Examples of environmental interventions utilized by facilities include:

- purchasing adult assistive walking devices,
- installing convex mirrors to enable nursing staff to visualize all hallways from the nursing station,
- implementing motion detectors at the bedside in patients' rooms,
- having patients use non-slip footwear, and
- upgrading all bed-exit alarms.

(Gowdy, 2003 [D])

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6. Observation and Surveillance

All patients admitted to acute care need to be monitored and reassessed on a regular basis. Due to the likelihood of ongoing changes, patients should be continuously reassessed even though they may not be in a high-risk falls group. Routine reassessments should occur at shift change, with a change in the patient's clinical status and following a fall.

The same assessment tool should be used on all reassessments. If risk factors have changed from the previous assessment, interventions need to be revised to address any new risk factors.

Intentional Rounding

Intentional timed rounding by nursing staff is best practice utilized in a number of better performing fall prevention protocols. Sometimes known as safety rounding, it is a strategy allowing nurses to monitor for changes in the patient's condition (Meade, 2006 [C]). However, recent literature shows that hourly rounding can be expanded to comfort and safety rounding, as well. Studies have shown that 45.2% of all falls were toileting related (Tzeng, 2009 [D]). By implementing hourly rounding and incorporating toileting assistance, hospitals have been able to reduce their falls by 60% in one year (Quigley, 2008 [D]; Meade, 2006 [C]). Patient satisfaction and safety have been improved with this concept, and hospital personnel experience less job fatigue and "burnout" with the decreased number of call lights experienced throughout the shift. The nursing professional team shares the responsibility of these rounds and finds that shifts are quieter and more organized, allowing nurses time for charting and patient and family education.

Components of the hourly safety and comfort rounds may include:

- assessment of pain level;

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- offering toileting assistance;
- re-positioning and comfort;
- patient belongings, call light, telephone, television remote, urinal, etc. within reach;
- dressing checks;
- water refreshed and offered;
- lighting and temperature of room;
- checking room for environmental and hazardous concerns;
- asking the final question, "Is there anything else I can do for you?" and
- making arrangements for time to return.

These measures are often referred to as The Four P's – position, plan assessment, personal needs, and placement (*Quigley, 2008 [D]; Meade, 2006 [C]*).

Successful implementation of an hourly rounding program revolves around hospital leadership supporting the concept, as well as a strong training program and accountability on every level. Recognition of a successful falls prevention program helps to sustain staff's continued commitment to the program. Posters showing success rates in decreasing numbers of patient falls and days without falls in prominent view for staff, patients and families gives staff a great sense of pride in a job well done. These types of posters bring the topic of falls prevention into daily conversations and help involve the entire interdisciplinary team in the program. Challenging the staff to build on previous success rates with the promise of unit reward or celebration parties build incentive to continue the satisfying work.

Sitters

Available evidence suggests that sitters contribute little to falls prevention programs. Two studies from Australia had mixed results. In both studies, sitters' hospitals had no patients falls while volunteer sitters were present. However, the overall falls rate of the facility was not decreased in one study (*Donoghue, 2005 [C]*) but was reduced 44% in another study (*Giles, 2006 [D]*). Furthermore, an attempt to develop a Patient Attendant Assessment Tool (PAAT) at the University of Michigan (*Tzeng, 2008 [C]*) improved the fill/request rates for sitters, but the rate of falls with injuries was higher. None of these studies described the training or education provided to either volunteer or paid sitters.

Thus, while studies involving sitters suggest a questionable effect on falls rates, studies that involve increased observation and surveillance by nursing appear to have a more consistent positive effect on falls rates.

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7. Auditing, Continuous Learning and Improvement

Safety huddles (post-falls huddles) provide a mechanism to learn from falls, near misses or other unexpected events. These immediate assessments of the situation allow a review of the event with the people involved, including family members, and can be done at the bedside. Points included in safety huddles:

- What happened?
- Risk factors
- Injury
- Falls interventions in place at time of fall
- Action plan for future

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Corrective actions can be put in place and preventive measures can be instituted for improvement after this exchange (*Quigley, 2008 [D]*). These huddles can be documented and audited for learning opportunities to be shared throughout the interdisciplinary health care team.

Refer to [Appendix A](#) for a Falls Risk Audit tool used by a major metropolitan hospital.

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The Aims and Measures section is intended to provide guideline users with a menu of measures for multiple purposes which may include the following:

- population health improvement measures,
- quality improvement measures for delivery systems,
- measures from regulatory organizations such as Joint Commission,
- measures that are currently required for public reporting,
- measures that are part of Center for Medicare Services Physician Quality Reporting initiative,
- other measures from local and national organizations aimed at measuring population health and improvement of care delivery.

This section provides resources, strategies and measurement for use in closing the gap between current clinical practice and the recommendations set forth in the guideline.

The subdivisions of this section are:

- Aims and Measures
- Implementation Recommendations
- Implementation Tools and Resources

Aims and Measures

1. Eliminate all falls with injury through a falls prevention protocol in the acute care setting.

Measures for accomplishing this aim:

- a. Falls prevalence: rate of inpatient falls per 1,000 patient days.
- b. Falls with injury: rate of inpatient falls with injury per 1,000 patient days.

2. Increase the percentage of patients who receive appropriate falls risk assessment and falls prevention interventions.

Measure for accomplishing this aim:

- a. Percentage of patients who receive appropriate falls prevention interventions based upon the results of their falls risk assessment.

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Aims and Measures

Measurement Specifications

Measurement #1a

Falls prevalence: rate of inpatient falls per 1,000 patient days.

Population Definition

All adult hospitalized patients who have falls during their hospital stay.

Data of Interest

$$\frac{\text{\# of hospitalized patients who fall} \times 1,000}{\text{\# of total inpatient days}}$$

Numerator/Denominator Definitions

Numerator: Total number of hospitalized patients who fall during their hospital stay.

Denominator: Total number of inpatient days.

Measurement Period

Monthly, in order to assess the system's performance on a more frequent basis.

Note

This is an outcome measure, and improvement is noted as a decrease in the rate.

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Aims and Measures

Measurement #1b

Falls with injury: rate of inpatient falls with injury per 1,000 patient days.

Population Definition

All adult hospitalized patients who fall and have an injury during their hospital stay.

Data of Interest

$$\frac{\text{\# of inpatient falls with injury}}{\text{\# of total inpatient days}}$$

Numerator/Denominator Definitions

Numerator: Number of inpatient falls with injury within 1,000 patient days.

Denominator: Total number of inpatient days.

Measurement Period

Monthly, in order to assess the system's performance on a more frequent basis.

Note

This is an outcome measure, and improvement is noted as a decrease in the rate. This is an IHI measure on fall prevention.

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Aims and Measures

Measurement #2a

Percentage of patients who receive appropriate falls prevention interventions based upon the results of their falls risk assessment.

Population Definition

All adult hospitalized patients.

Data of Interest

$$\frac{\text{\# of patients who receive appropriate falls prevention interventions}}{\text{\# of hospitalized patients}}$$

Numerator/Denominator Definitions

Numerator: Number of patients who receive appropriate falls prevention interventions based upon the results of their falls risk assessment.

Denominator: Number of hospitalized patients.

Measurement Period

Monthly, in order to assess the system's performance on a more frequent basis.

Note

This is an outcome measure, and improvement is noted as an increase in the rate.

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Implementation Recommendations

Prior to implementation, it is important to consider current organizational infrastructure that address the following:

- System and process design;
- Training and education; and
- Culture and the need to shift values, beliefs and behaviors of the organization.

The following system changes were identified by the guideline work group as key strategies for health care systems to incorporate in support of the implementation of this guideline:

- Organizational leadership needs to identify and support an interdisciplinary falls prevention team comprising clinical and non-clinical staff to oversee the falls prevention program. The team should include at least one clinician with a background or additional education in falls prevention.
- Organizations need a reliable process in place for a comprehensive, interdisciplinary clinical assessment, communication and risk factor intervention plan.
- Falls prevention education should be provided to patients, families, clinical and non-clinical staff.
- Organizational leadership needs to support systems that promote learning, ongoing evaluation and improvement of the falls prevention program, including analysis of falls rates and injuries (fall/1,000 patient days and falls with injury/1,000 patient days). The analysis should report on the internal effectiveness (validity) of falls screening and effectiveness of interventions applied to those screened at risk.
- Organizations need to support team-based success factors associated with the best-reported reductions in fall and injury rates including:
 - Ensuring fall risk assessments, investigation of fall incidents, confronting problem issues, and accountability for missed opportunities (*Weinberg, 2011 [C]*).

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Implementation Tools and Resources

Criteria for Selecting Resources

The following tools and resources specific to the topic of the guideline were selected by the work group. Each item was reviewed thoroughly by at least one work group member. It is expected that users of these tools will establish the proper copyright prior to their use. The types of criteria the work group used are:

- The content supports the clinical and the implementation recommendations.
- Where possible, the content is supported by evidence-based research.
- The author, source and revision dates for the content is included where possible.
- The content is clear about potential biases and when appropriate conflicts of interests and/or disclaimers are noted where appropriate.

Resources Available to ICSI Members Only

ICSI has knowledge resources that are **only** available to ICSI members (these are indicated with an asterisk in far left-hand column of the Resources Table). In addition to the resources listed in the table, ICSI members have access to a broad range of materials including tool kits on Continuous Quality Improvement processes and Rapid Cycling that can be helpful. To obtain copies of these or other Resources, go to [Education and Quality Improvement](#) on the ICSI Web site. To access these materials on the Web site, you must be logged in as an ICSI member.

The resources in the table on the next page that are not reserved for ICSI members are available to the public free-of-charge unless otherwise indicated.

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Implementation Tools and Resources Table

*	Author/Organization	Title/Description	Audience	Web Sites/Order Information
	Department of Veterans Affairs National Center for Patient Safety	National Center for Patient Safety: The Falls Toolkit – includes background information and materials for designing a falls reduction program including the Morse Falls Scale, falls risk assessment, and standard falls prevention interventions.	Health Care Clinicians	http://www.patientsafety.gov/SafetyTopics/fallstoolkit/index.html
	Family Practice Notebook.com	Kokmen Short Test of Mental Status, Mini-Mental State Exam, Get Up and Go Test	Health Care Clinicians	http://www.fpnotebook.com/Neuro/Exam/KkmnShrtTstOfMntlSts.htm
	The Hospital Elder Life Program (HELP)	Includes information on recognizing delirium.	Health Care Clinicians	http://hospitalelderlifeprogram.org/public/public-main.php?zoom_highlight=recognizing+delirium
*	ICSI members	Falls prevention toolkit – a variety of assessment tools, nursing protocols and care plans developed by ICSI members.	Health Care Clinicians	http://www.icsi.org/
	The Joint Commission	National Patient Safety Goals contains a chapter on reducing falls in an inpatient setting.	Health Care Clinicians	http://www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals
	Minnesota Department of Health	Consumer Guide to Adverse Health Events – includes current adverse events information and a guide to learn about questions patient and families should ask to make sure they receive the best care.	Patients and Families	http://www.health.state.mn.us/patientsafety
	Minnesota Hospital Association	Information about the SAFE from FALLS call to action. Information includes Morse Falls Scale and John Hopkins Hospital Falls Risk assessment tools, prevention suggestions, and a post-falls huddle form.	Patients and Health Care Clinicians	http://www.mnhospitals.org
	Minnesota Safety Council: Minnesota Senior Safe	Includes falls prevention checklist, home safety checklist, fact sheets on preventing falls, exercise and safety. Includes links to other senior health sites.	Patients and Families	http://www.mnsafetycouncil.org
	Society of Hospital Medicine	Mini-Cog Assessment Instrument for Dementia. A clock drawing test combined with a 3-item recall test. Includes a teach back video in addition to other resources.	Health Care Clinicians	http://www.hospitalmedicine.org/geriresource/toolbox/mini_cog.htm

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Implementation Tools and Resources Table

*	Author/Organization	Title/Description	Audience	Web Sites/Order Information
	The Victorian Quality Council Safety and Quality in Health Care State Government of Victoria, Australia	Includes guidelines for acute, sub-acute and residential care settings. Provides a framework (model) and supporting resources for a falls prevention program in hospitals, including environmental rounds, environmental checklists and other tools. Virtual training in falls assessment can be accessed through this Web site.	Health Care Clinicians	http://www.health.vic.gov.au/qualitycouncil

* Available to ICSI members only.

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The subdivisions of this section are:

- References
- Appendix A

References

Links are provided for those new references added to this edition (author name is highlighted in blue).

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Appendix A – Falls Risk Audit

EPIC INFORMATION	MR# ROOM:	MR# ROOM:	MR# ROOM:	MR# ROOM:	MR# ROOM:	MR# ROOM:	Percentage
DATE AND TIME OF LAST FALLS SCORE.	Score=	Score=	Score=	Score=	Score=	Score=	
Falls Risk Assessment done within 4 hours of admission/transfer.							
Are appropriate interventions being documented?							
Is there a Falls/Impaired mobility care plan?							
Has Falls Prevention Education been given & documented for patient and or family?							
RISK ALERTS							
Falls Risk sign must be posted near the door and above the HOB if in a double room.							
Green armband?							
Red slippers?							
IS A BED ALARM IN USE? IF SO, IS IT TURNED ON?	Posey= Versa care=	Posey= Versa care=	Posey= Versa care=	Posey= Versa care=	Posey= Versa care=	Posey= Versa care=	
Is Hourly Rounding form being completed?							
Is toileting Schedule indicated?							
Is there documentation that shows the patient is being mobilized?							
Is there documentation that CNS or Pharmacy was consulted?							
Discussion with staff?							
FALLS OCCURRENCE							
Is there documentation in EPIC on clinical Doc Flow Sheet, related to the fall?							
Is there documentation indicating alternative strategies have been deployed?							
PERCENTAGES							

UNIT _____ Date _____ Time _____

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ICSI has long had a policy of transparency in declaring potential conflicting and competing interests of all individuals who participate in the development, revision and approval of ICSI guidelines and protocols.

In 2010, the ICSI Conflict of Interest Review Committee was established by the Board of Directors to review all disclosures and make recommendations to the board when steps should be taken to mitigate potential conflicts of interest, including recommendations regarding removal of work group members. This committee has adopted the Institute of Medicine Conflict of Interest standards as outlined in the report, *Clinical Practice Guidelines We Can Trust* (2011).

Where there are work group members with identified potential conflicts, these are disclosed and discussed at the initial work group meeting. These members are expected to recuse themselves from related discussions or authorship of related recommendations, as directed by the Conflict of Interest committee or requested by the work group.

The complete ICSI Policy regarding Conflicts of Interest is available at <http://bit.ly/ICSICOI>.

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ICSI facilitates and coordinates the guideline development and revision process. ICSI, member medical groups and sponsoring health plans review and provide feedback, but do not have editorial control over the work group. All recommendations are based on the work group's independent evaluation of the evidence.

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All ICSI documents are available for review during the revision process by member medical groups and sponsors. In addition, all members commit to reviewing specific documents each year. This comprehensive review provides information to the work group for such issues as content update, improving clarity of recommendations, implementation suggestions and more. The specific reviewer comments and the work group responses are available to ICSI members at <http://www.icsi.org>.

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ICSI Document Development and Revision Process

Overview

Since 1993, the Institute for Clinical Systems Improvement (ICSI) has developed more than 60 evidence-based health care documents that support best practices for the prevention, diagnosis, treatment or management of a given symptom, disease or condition for patients.

Audience and Intended Use

The information contained in this ICSI Health Care Guideline is intended primarily for health professionals and other expert audiences.

This ICSI Health Care Guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients and families are urged to consult a health care professional regarding their own situation and any specific medical questions they may have. In addition, they should seek assistance from a health care professional in interpreting this ICSI Health Care Guideline and applying it in their individual case.

This ICSI Health Care Guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition.

Document Development and Revision Process

The development process is based on a number of long-proven approaches and is continually being revised based on changing community standards. The ICSI staff, in consultation with the work group and a medical librarian, conduct a literature search to identify systematic reviews, randomized clinical trials, meta-analysis, other guidelines, regulatory statements and other pertinent literature. This literature is evaluated based on the GRADE methodology by work group members. When needed, an outside methodologist is consulted.

The work group uses this information to develop or revise clinical flows and algorithms, write recommendations, and identify gaps in the literature. The work group gives consideration to the importance of many issues as they develop the guideline. These considerations include the systems of care in our community and how resources vary, the balance between benefits and harms of interventions, patient and community values, the autonomy of clinicians and patients and more. All decisions made by the work group are done using a consensus process.

ICSI's medical group members and sponsors review each guideline as part of the revision process. They provide comment on the scientific content, recommendations, implementation strategies and barriers to implementation. This feedback is used by and responded to by the work group as part of their revision work. Final review and approval of the guideline is done by ICSI's Committee on Evidence-Based Practice. This committee is made up of practicing clinicians and nurses, drawn from ICSI member medical groups.

Implementation Recommendations and Measures

These are provided to assist medical groups and others to implement the recommendations in the guidelines. Where possible, implementation strategies are included which have been formally evaluated and tested. Measures are included which may be used for quality improvement as well as for outcome reporting. When available, regulatory or publicly reported measures are included.

Document Revision Cycle

Scientific documents are revised every 12-24 months as indicated by changes in clinical practice and literature. Each ICSI staff monitors major peer-reviewed journals every month for the guidelines for which they are responsible. Work group members are also asked to provide any pertinent literature through check-ins with the work group mid-cycle and annually to determine if there have been changes in the evidence significant enough to warrant document revision earlier than scheduled. This process complements the exhaustive literature search that is done on the subject prior to development of the first version of a guideline.

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