

Actionable Patient Safety Solutions™ (APSS™): Falls and Fall Prevention in Adults

How to use this guide

This APSS provides evidence-based actions and resources for executives, leaders, clinicians, and performance improvement specialists. This document is intended to be used as a guide for healthcare organizations to examine their own workflows, identify practice gaps, and implement improvements. In it, you'll find:

Best Practice Summary: A high level summary of evidence-based, clinical best practices. (page 2)

Executive Summary: Executives should understand the breadth of the problem and its clinical and financial implications. (page 3)

Leadership Checklist: This section is for senior leaders to understand common patient safety problems and their implications related to falls and fall prevention in adults. Most preventable medical harm occurs due to system defects rather than individual mistakes. Leaders can use this checklist to assess whether best practices are being followed and whether action is needed in their organization around falls and fall prevention in adults. (page 3)

Clinical Work low: This section includes more specific information about falls and fall prevention in adults across the continuum of care. Leaders should include the people doing the work in improving the work. This section outlines what should be happening on the frontline. Clinicians can use this section to inform leaders whether there are gaps and variations in current processes. This is presented as an infographic that can be used for display in a clinical area. (page 5)

Education for Patients and Family Members: This section outlines what frontline healthcare professionals should be teaching patients and family members about falls and fall prevention in adults. Clinicians can inform leaders whether there are gaps and variations in the current educational processes. (page 9)

Performance Improvement Plan: If it has been determined that there are gaps in current practice, this section can be used by organizational teams to guide them through an improvement project. (page 11)

What We Know about Falls and Fall Prevention in Adults: This section provides additional detailed information about falls and fall prevention in adults. (page 14)

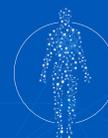
Resources: This section includes helpful links to free resources from other groups working to improve patient outcomes and safety. (page 22)

Endnotes: This section includes the conflict of interest statement, workgroup member list, and references. (page 23)

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Patient Safety
MOVEMENT

Best Practice Summary

Upon Admission

- Conduct a comprehensive falls risk assessment, including, but not limited to, the following:
 - Visual assessment
 - Hearing and vertigo assessment
 - Mobility assessment
 - Medical history review
 - Medications review
- Clearly communicate patient fall risk to other team members.

Routine Care

- Continuously reassess fall risk, particularly alongside changes in medication, patient condition, or treatment plan.
- Leverage techniques to mitigate fall risk, including but not limited to,:
 - Ambulation equipment (e.g., gait belt)
 - Visual cues (color coded gowns, wrist bands, socks, signage)
 - Maternal wraps
- Ensure the patient's bed is in the lowest position and appropriate bedrails are lifted.
- During multidisciplinary rounds, discuss the patient's balance between early mobility capability and fall risk.
- Educate patients and family members on fall risk factors and involve them in fall prevention efforts.
- Do not use restraints for fall risk prevention.
- Identify environmental hazards that could contribute to falls (e.g., wires on the floor).

Treatment after a Fall

- Provide lifesaving treatment if indicated (e.g., control bleeding).
- Conduct a thorough evaluation of the patient after the fall.
- Disclose the incident to the patient and their family members.
- Debrief with the patient and family members and discuss root causes.
- Communicate with the patient or a witness of the fall what had happened to cause the fall. Ask the patient if they have experienced or are experiencing pain at any given time.
- Share findings from the root cause analysis across the organization.
- Provide support to the patient and family members after a patient/infant fall.

Discharge

- Conduct another falls risk assessment and set realistic expectations for the patient's recovery.
- Consider cultural factors that may contribute to fall risks and discuss with patients and family members how to mitigate (e.g., washing of feet before prayer).
- Ensure patients and family members are aware of their personal risk factors for a fall (e.g., certain medications prescribed).

Executive Summary

The Problem

Annually, there are between 700,000 and 1,000,000 falls in US hospitals alone ([AHRO, 2021](#)). Furthermore, nearly 40% of elderly patients experience a fall within six months post-discharge ([Hill et al., 2019](#)). According to the Centers for Medicare and Medicaid Services, one in every three people over 65 years of age experience a fall each year and this figure increases to nearly half of adults over the age of 80 ([CMS.gov, n.d.](#)). The implications after a fall are vast and can include fractures, lacerations, or internal bleeding, ultimately leading to a significantly greater burden on the healthcare system and for the patient and family members.

The Cost

The wide variety of implications post-fall poses a tremendous responsibility on healthcare organizations. In total, the direct cost of all fall injuries in older adults in 1994 was \$20.2 billion and is estimated to reach \$32.4 billion by 2020. While the estimates of hip fractures in 1991 hovered around \$2.9 billion, the aging population is expected to experience a growing number of hip fractures, thereby increasing the estimate to \$240 billion by 2040 ([CMS, n.d.](#)).

The Solution

Many healthcare organizations have successfully implemented and sustained improvements and reduced death from falls. This document provides a blueprint that outlines the actionable steps organizations should take to successfully reduce falls and summarizes the available evidence-based practice protocols. This document is revised annually and is always available free of charge on our website.

Leadership Checklist

Use this checklist as a guide to determine whether current evidence-based guidelines are being followed in your organization:

- Measure and report falls monthly (Falls/1,000 patient days). Note trends in areas with low screening and prevention compliance and high fall incidence. Routinely reassess outcomes. Consider tracking and collecting inpatient fall data and outcomes post-discharge to monitor the frequency and cost of morbidity and mortality. Sustain focus on fall prevention with system-wide visibility on metrics at multiple touch-points within the organization. See “Define falls and collect and communicate data about falls” in the “What We Know” section.
- Perform a baseline assessment of risk management data to understand the common causes of falls on inpatient units, applicable to all care areas (e.g., Pareto charts).
- Initiate a PI (performance improvement) project. If a problem is not indicated, routinely reassess to identify gaps, and ensure integrity of the data collected.
- Expect that when the organization starts tracking safety events, there will be an initial increase in reported events before organizational improvement work begins to reduce error rates over time. Ensure that the frontline staff and leaders understand this so they don’t become demotivated to improve.
- Ensure frontline involvement in falls improvement activities. Maintain their engagement and remove barriers to progress. See “Engage staff, patients, and families” in the “What We Know” section.
- If a PI plan is put in place, measure the associated process outcomes.

- Ensure that falls protocols are embedded into clinical workflows, whether electronic or paper.
- Ensure there are enough clinically competent, trained staff to effectively manage necessary preventive care. See “Provide education and training” in the “What We Know” section for more information.
- Ensure adequate training and documentation of falls screening and prevention competencies and skills.
- Eliminate barriers to making rapid changes to documentation templates and order sets.
- Debrief on a regular basis to solicit team feedback about barriers to sustained compliance. Adjust the plan quickly and nimbly as needed.
- Hold staff accountable for providing the standard of care and reward success.
- Reinforce just culture practices for staff members who report patient falls.
- Ensure that leaders have a simple process to oversee falls improvement work while also considering how it aligns with other initiatives across the organization.
- Include the patient and family voice in this process by involving your organization’s patient and family advisory body (such as a Patient and Family Advisory Council (PFAC) or by including current or former patients or patient advocates
- Ensure falls prevention is organization-wide and that the responsibility does not fall on one discipline.
- Adopt a standardized definition of falls with specific categorization criteria. See “Clearly define what constitutes a fall” in the “What We Know” section.
- Review the current assessment tools (e.g., Morse Fall Score, Hendrich Fall Risk Model, Schmid, etc.). and determine if the tools are used to triage or screen for the likelihood of a fall. Consider adopting tools to evaluate patients for muscle strength, gait, and other contributing factors. Assess the competency of clinicians who use the tool on an ongoing basis to ensure accuracy and knowledge application of the tools.
- Standardize visual cues to indicate high-risk fall patients for staff members, in addition to ambulation equipment (e.g., color coded gowns, wristbands, socks, etc.).
- Review your fall data monthly at Quality and Patient Safety Committee meetings. Share track/ trended falls data and lessons learned with frontline staff. Be transparent about causes of Falls on unit and engage frontline staff in finding solutions to minimize those causes. It is not uncommon for frontline staff to not understand why falls data is being collected.
- Create a tiered Falls Prevention Program with involvement from those at the unit level, with outpatient providers, and at the leadership and systems levels to ensure when people move throughout the system, they are faced with the same protocols. Ensure comprehensive discipline representation.
- Maintain inventory of appropriate tools for ambulation and injury prevention (e.g., hip pads, personal alarms, etc.).
- Train non-clinical staff alongside clinical staff for identifying a patient at high risk, maintaining a safe environment, and calling for help.
- Establish a standardized debrief process to examine all falls, near misses and analyze the system of safety practice for points of failure and opportunities for improvement. Standardize post fall management protocol and including post-fall huddle format. See “Create a post-fall huddle protocol” in the “What We Know” section for more information.
- Have a [plan for sustainability](#).

Clinical Workflow

1. ADMISSION

- Conduct a comprehensive falls risk assessment immediately upon admission. See “Factors that increase fall risk” in the What We Know section.
 - A comprehensive risk assessment should include a visual assessment, a hearing and vertigo assessment, a gait, balance, and mobility assessment, medical history review, including previous falls, and a medication review.
- Conduct the risk screening and then assessment as indicated based on the organization-specific standard.
- Obtain previous falls history.



2. ROUTINE CARE

- Continuously reassess for falls risk and for the presence of risk factors. Assess upon admission, transfer of care (handoffs), with altered mental status, and/or with any change in condition. See “Factors that increase fall risk” in the What We Know section and [section 3.4.2 of AHRQ’s Fall Prevention Toolkit](#).
- Provide education for the patient and their support person on preventing falls before, during, and after a patient’s hospital stay (see examples at CampaignZERO.org).
- Use ambulation equipment and visual cues, such as color-coded gowns, wristbands, socks, signage, and other visual cueing. Share this information with patients and their loved ones to heighten their awareness of fall risks and your proactive prevention cues.
- Tailor interventions to specific fall risk factors and share this information with patients and families to heighten their awareness of fall risk factors and potential ways to collaborate with you to prevent falls.
- Keep beds in the position most appropriate for the patient. Often, this may be the lowest position but assess patient height, need for transfer, and other factors. Position guardrails according to organizational policy with caution to avoid unnecessary or unintentional restraint.
- Use a gait belt upon ambulation, as indicated, only if adequately trained, and only as appropriate. Before gait belt use, assess the patient for contraindications, including recent abdominal, back, or chest surgery, hernia, severe cardiac or respiratory conditions, abdominal aneurysm, or the presence of a gastrostomy tube or other equipment that might be compromised by gait belt use.
- Ask the patient about their understanding and acceptance of their own risk of falls as a preventive measure. Understand how the patients feels and consider patient-specific psychological factors that may increase risk. Ensure patient and visitors

understand the falls prevention strategies, such as bed alarms, chair alarms, and include the patient's loved ones in all conversations, as approved by the patient. See "Factors that increase fall risk" in the "What We Know" section.

- Ensure sturdy, non-skid, well-fitted footwear upon ambulation.
- Do not use restraints for fall prevention.
- Use the organizational visual tool to indicate falls risk and share this information with the patient and family members
- Review the "Days Since" sign on the unit.
- Ensure patient and family members understand their environmental factors that could lend to falls risk (e.g., objects on wheels, slippery floors, lighting, etc.). See [CampaignZERO](#) for patient and family member-facing checklist for environmental assessment and related family engagement education to prevent falls.
- Conduct routine environmental safety checklist, which should include review of lighting in rooms and bathrooms, floors, unsafe equipment, cord hazards, etc. Consider use of lights to guide patients to the restroom.
- List medications with potential to cause fall and paste at nurse stations.
- Make recording of supine blood pressure as important parameter before mobilizing patients post surgery.
- Remain vigilant for [implicit bias in care](#).



3. TREATMENT AFTER FALLS

- Conduct a thorough debrief with the patient, family members, and care team to understand root causes.
- Follow organizational protocol for obtaining a CT.
- Understand patient anticoagulant use.
- Complete further imaging/evaluation based on complaints.
- If no one was present when the patient fell, verify that the environment is safe by quickly scanning the patient's location and surroundings to make sure that there are no imminent physical threats, such as toxic or electrical hazards.
- Provide immediate lifesaving treatment if indicated (ex: CPR, control bleeding) and call for assistance (ex: Rapid Response, Medical Emergency Team, local emergency number and/or 911). Don't move the patient until you fully evaluate the patient's status to prevent further injury if an injury has occurred as a result of the fall.
- The patient's nurse documents observations (ex: bleeding, contusions, abrasions, swelling, pain, deformities) and assessment (ex: vital signs including pain and orthostatic blood pressures, range of motion, neuro, glucose) post fall. Make sure

to pay attention to deviations from the patient baseline.

- Review patients' risk for bleeding include use of anticoagulants, PT/INR/PTT and platelet levels if known.
- Ask the patient or a witness what happened. Ask whether the patient experienced pain or a change in level of consciousness.
- Notify provider. Obtain imaging as ordered by provider.
- Notify the patient's emergency contact.
- Assess need for change in provider orders and/or level of care.
- Perform a debriefing with the patient and care team to determine the root cause of the fall. Gather assessment data from the patient, visitors, staff members and any additional witnesses to the fall. Review the events that preceded the fall and any contributing factors. Discuss why it occurred and how it could have been prevented. Assess the patient's environment, looking for possible causes of the fall. Review medications for medications that may have contributed to the fall (ex: sedatives and opioids). Assess for gait disturbances or improper use of a cane, crutches or a walker. Review and update plan of care as needed.
- Document the patient fall per institution guidelines.
- The patient's nurse updates the risk assessment and interventions after any patient fall.
- Continue to reassess per institution guidelines, particularly within 18-24 hours after the initial fall, as many injuries do not present themselves immediately.
- Notifies Risk Management/supervisor if the fall results in serious harm.



4. DISCHARGE

- Do a falls risk assessment on the day of discharge to set realistic expectations for recovery and risk factors.
- Provide discharge education on falls prevention to assist with teaching patients to remain safe outside the hospital. Consider use of the [CMS Falls Prevention Interventions in the Medicare Population](#).
- Understand balance issues, history of falls, and hospital falls incident rates as an outpatient provider. Conduct a neurological exam upon the first conversation with the patient to understand their cognition.
- Label medications which have potential to cause falls.

In addition to the above recommendations, consider the following to prevent maternal falls and neonatal drops:

- Patient Education
 - During antenatal care, help expecting mothers understand their steps toward fall prevention during pregnancy, such as type of footwear to avoid.
 - Provide patient education in an effective manner and based on the patient's communication needs (i.e. written, hard of hearing, American Sign Language, blind) when the patient first arrives to the unit.
 - Include an infant safety pledge form, with patient education and information embedded, that is signed by the parents and family. The pledge should include avoiding co-sleeping and keeping the bed in the lower position.
- Patient Assessment
 - Assess the individual needs of each mother, considering the level of pain, fatigue, support, medication status, and the understanding of infant safety by the mother and family.
 - Discuss parental form with safety risks and education on keeping baby safe while in the hospital and have parents sign the agreement after the nurse reviews.
 - Include fathers or other co-parents, mothers' care partners in all conversations around falls prevention when possible. If they are not available when mothers are coached on preventing falls, ensure that these significant others are provided with falls prevention coaching separately, or provided with literature on the importance of supporting fall prevention.
- Patient Safety Practices During Inpatient Stay
 - Provide a welcome letter that includes safety interventions such as using a crib when up ambulating both in the room and beyond.
 - Promote a patient safety culture approach of assessing fall risk for mother and baby on an ongoing basis, during handoffs, transfers, and with any change in patient condition.
 - Assess effects of labor epidural in the postpartum setting. Provide assistance with ambulation until patient's ability to maintain her balance is restored. Maintain a balance of trusting the patient while objectively verifying their stability.
 - Encourage mothers to room-in with their baby.
 - In addition to ensuring safe staffing to patient ratios, utilize additional support staff (i.e. sitters) when a patient needs ongoing assistance with ambulation.

Education for Patients and Family Members

The outline below illustrates all of the information that should be conveyed to the patient and family members by someone on the care team in a consistent and understandable manner.

Explain why fall prevention is important. A member of the healthcare team should elaborate on the need to prioritize falls prevention and should provide a basic overview of strategies used within the organization to prevent falls. For example, if there are clear visual indicators in the patient room when explaining, like colored socks, point them out to aid in the explanation.

Indicate what to watch out for. Family members can serve as an extra pair of eyes and ears and can alert medical staff if something might be wrong. Family members should have an understanding of what to look for that may indicate levels of fall risk, such as altered mental status or orthostatic hypotension. In order to adequately welcome patients and family members into the care team, it is not enough to explain “what” patients and family members should look for or “what” is going to happen in their care. The “what” must always be followed with a “why” to aid in genuine understanding.

Additionally, family members should know exactly when to call for help, where to go for help, and with whom they should speak. It is essential that patients and family members understand that they should not be ashamed to ask any of their questions and that many patients in similar situations often have similar questions.

Instead of employing a directive conversation style, an active, engaging conversation should take place, leaving capacity for questions and repeat-back strategies. When patients and family members understand the signs and symptoms that could be indicative of a problem, they are able to serve as an extra set of eyes in order to elevate this concern as early as possible.

Describe what can be anticipated. In addition to explaining when to call for help in the case of a potential emergency, healthcare providers should also thoroughly explain the typical signs, symptoms, and treatments that can be expected before and after a fall. Additionally, it is important to discuss potential post-fall complications. Clinicians should provide a high-level overview of the processes in place at their organization to assess fall risk. This demonstrates competence of the organization, will likely bolster patient and family comfort, and will provide the patient and family members with information for which to reference if they may be suspicious of a problem.

By engaging in these conversations before a problem arises, family members can be prepared in the circumstance of necessary treatment and will have an understanding of where to go to find out more information about their loved one’s condition.

Explain what is expected of them during their care. By giving patients and family members a “job” while they are in the hospital, they can be immersed fully in the routine care, can hold other team members accountable, can feel more confident voicing their concerns or opinions, and can serve as an extra set of informed and vigilant eyes to optimize patient safety. This team involvement can also reduce their anxiety by transforming concern into proactive action.

Patients and family members can:

- Engage in conversations around current potential health conditions
- Ask for clarification of fall risk safety standards
- Make sure floors are clear, clean, and reduced of clutter
- Install handrails or grab bars in stairways or bathrooms when at home

- Talk openly with patient and their healthcare provider about fall risks and prevention
- Keep an undated list of patient's medications and discuss any side effects with the healthcare provider
- Encourage activities that improve balance and strengthen legs
- Encourage regular optometrist appointments to ensure any deterioration of the eyes is cared for

Explore next steps. Planning for life after the hospital, whether in assisted living, returning home, or another option, should begin as early as possible between the healthcare providers and the patient and family.

- Describe the organization's fall risk safety standards that were followed.
 - If any of the protocols changed due to this specific patient's circumstance, articulate that to the patient and family members.
- Have a discussion with the patient and family around end of life care and advanced directives.
 - Make an attempt to thoroughly understand the religious or cultural nuances in any of the patient's or family members' decisions or questions.
- Ensure thorough explanation of necessary post-discharge appointments, therapies, medications, and potential complications.
 - Assess for patient preference in time and location of follow-up appointments, if possible.
- Provide patients and family members resources, including direct contact phone numbers, to the hospital for post-discharge questions.
 - Make sure the resources are in their own language.
- Provide thorough instructions to the patient and family members in the days leading up to discharge regarding fall prevention and recovery after discharge ([What you should know, 2020](#)).
 - If aftercare is required after discharge, set aside time with the patient and family member more than once to ensure their understanding and confidence.

In the event of a fall or infant drop, provide emotional support to the family or caregiver who may suffer as the second victim in the event.



Performance Improvement Plan

Follow this checklist if the leadership team has determined that a performance improvement project is necessary:

- Gather the right project team.** Be sure to involve the right people on the team. If possible, you'll want two teams: an oversight team that is broad in scope, has 10-15 members, and includes the executive sponsor to validate outcomes, remove barriers, and facilitate spread. The actual project team consists of 5-7 representatives who are most impacted by the process. In general, the key is having the right people on the team (people impacted by the process, executive sponsors, and subject matter experts), no matter the size of the organization. Whether a discipline should be on the advisory team or the project team depends upon the needs of the organization. Patients and family members need to be involved in all improvement projects, as there are many ways they can contribute to safer care. Define what constitutes a quorum, which team members are needed to make the quorum, and who can serve as alternatives.

Complete this Lean Improvement Activity:



Conduct a [SIPOC](#) analysis to understand the current state and scope of the problem. A SIPOC is a lean improvement tool that helps leaders to carefully consider everyone who may be touched by a process, and therefore, should have input on future process design.

RECOMMENDED FALLS IMPROVEMENT TEAM

- | | |
|---|--|
| <ul style="list-style-type: none">• Admitting and registration staff• Quality and safety specialists• Environmental manager and staff• Risk manager• Physical therapist• Physician• Nurse | <ul style="list-style-type: none">• Occupational therapist• Materials manager• Facilities engineer• Information systems staff• Certified nursing assistant• Patients and family members• Pharmacists |
|---|--|

Table 1: Understanding the necessary disciplines for a falls improvement team

- Understand what is currently happening and why.** Reviewing objective data and trends is a good place to start to understand the current state, and teams should spend a good amount of time analyzing data (and validating the sources), but the most important action here is to go to the point of care and observe. Even if team members work in the area daily, examining existing processes from

Create a [process map](#) once the workflows are well understood that illustrates each step and the best practice gaps the team has identified ([IHI, 2015](#)). Brainstorm with the advisory team to understand why the gaps exist, using whichever [root cause analysis tool](#) your organization is accustomed to ([IHI, 2019](#)). Review the map with the advisory team and invite the frontline to validate accuracy.



every angle is generally an eye-opening experience. The team should ask questions of the frontline during the observations that allow them to understand each step in the process and identify the people, supplies, or other resources needed to improve patient outcomes.

FALLS PROCESSES TO CONSIDER ASSESSING

- Use of call light and response to call light
- Use of current assessment tools and how these assessments are performed and documented
- Assessment tools for specific populations (e.g., new mothers and newborns)
- Frequency of risk assessment
- Use of restraints
- How findings from root cause analyses are shared
- Staff knowledge of fall prevention for different populations and cultures

Table 2: Consider assessing these processes to understand where the barriers contributing to falls may be in your organization

- Prioritize the gaps to be addressed and develop an action plan.** Consider the cost effectiveness, time, potential outcomes, and realistic possibilities of each gap identified. Determine which are priorities of focus for the organization. Be sure that the advisory team supports moving forward with the project plan so they can continue to remove barriers. Design an experiment to be trialed in one small area for a short period of time and create an action plan for implementation.

The action plan should include the following:



- Assess the ability of the culture to change and adopt appropriate strategies
- Revise policies and procedures
- Redesign forms and electronic record pages
- Clarify patient and family education sources and content
- Create a plan for changing documentation forms and systems
- Develop the communication plan
- Design the education plan
- Clarify how and when people will be held accountable

TYPICAL GAPS IDENTIFIED IN FALLS IMPROVEMENT WORK

- Non-responsiveness to call lights
- Equipment and environmental risks (e.g., beds that are too high)
- Patients are not mobilized due to a fall risk
- Bias in falls risk (e.g., ageism)
- Gloss flooring (glare can reduce sight)
- Lack of handrails in the room, walkways, and bathrooms
- Windows with glare or windows without polarized coatings
- Lack of clear definition of what constitutes a fall
- Changes in patient's medication/treatment without informing the patient about how it will impact their risk for falls
- Lack of sensitivity to falls risk factors for those of different backgrounds (e.g., washing feet before prayer)

Table 3: By identifying the gaps in falls prevention, organizations can tailor their project improvement efforts more effectively

- **Evaluate outcomes, celebrate wins, and adjust the plan when necessary.** Measure both process and outcome metrics. Outcome metrics include the rates outlined in the leadership checklist. Process metrics will depend upon the workflow you are trying to improve and are generally expressed in terms of compliance with workflow changes. Compare your outcomes against other related metrics your organization is tracking.

Routinely review all metrics and trends with both the advisory and project teams and discuss what is going well and what is not. Identify barriers to completion of action plans, and adjust the plan if necessary. Once you have the desired outcomes in the trial area, consider spreading to other areas ([IHI, 2006](#)).

It is important to be nimble and move quickly to keep team momentum going, and so that people can see the results of their labor. At the same time, don't move so quickly that you don't consider the larger, organizational ramifications of a change in your plan. Be sure to have a good understanding of the other, similar improvement projects that are taking place so that your efforts are not duplicated or inefficient.

[Read this paper](#) from the Institute for Healthcare Improvement to understand how small local steps



FALLS METRICS TO CONSIDER ASSESSING

- Fall rate
- Falls with injury rate
- Infant falls
- Delirium assessments conducted
- Restraint use
- Use of visual cues for fall risk patients
- Medications associated with falls

Table 4: Consider evaluating related metrics to better understand falls presence and contributing factors.

What We Know About Falls and Fall Prevention

Factors that increase fall risk

Fall prevention and protection from injury is an organizational issue and needs to be addressed by all employees who might encounter a person who is at risk for a fall. Consider ensuring that rotations of students, volunteers, and new employees understand the importance of your actions related to fall prevention and protection from injury. Consistently educate newly-admitted patients and their advocates on how important they are to reducing and avoiding falls. Clearly define their role and expectations of their actions.

Guiding principles related to fall prevention and protection from injury are ([RNAO, n.d.](#)):

- Many falls are predictable and preventable
- Fall prevention is a shared responsibility within health care and throughout the institution
- Person and family-centered care is foundational to the care of people at risk for a fall and fall injuries
- The risks and benefits for the person should be considered in partnership with patients and their advocates when implementing interventions to fall prevention and protection from injury

Factors associated with patient falls can be divided into four areas of influence. This table outlines the factors that can help you develop interventions and practice actions after assessing your current processes ([Morgan, Mathison, Rice & Clemmer, 1985](#)).

PATIENT-SPECIFIC	ENVIRONMENTAL	SITUATIONAL	ORGANIZATIONAL
<ul style="list-style-type: none"> • Impaired gait • Impaired cognition • Forgetfulness • Fatigue • Poor judgment • Impulsiveness • Sedation/recent surgery • Impaired vision • Weakness, especially legs • Hypotension • Depression • Drug interactions • Delirium • Resistance to loss of independence to carry out daily activities • The desire to “not disturb” nurses • Feeling of “uselessness” • Urinary incontinence • Acute event (e.g., pulmonary embolism) 	<ul style="list-style-type: none"> • Furniture on wheels • Cluttered pathways • Poor lighting • Height of furniture • Slippery floors • Unit layout making it difficult to see patients from nurses’ station • Medical devices (IV poles, indwelling urinary catheters) • Glare from windows • High Gloss Flooring 	<ul style="list-style-type: none"> • Leaning forward • Reaching up • Transferring on/off bed/chair 	<p>Staffing:</p> <ul style="list-style-type: none"> • Numbers • Knowledge • Skill mix • Attitudes <p>Types of Policies:</p> <ul style="list-style-type: none"> • Hourly, intentional rounding • Toileting schedules • Type of fall prevention program <p>Available Equipment purchases:</p> <ul style="list-style-type: none"> • Transfer equipment • Surveillance video monitoring • Non-slip cushions • Low/very low beds • Seating • Bed/chair alarms as a reactive tool

<ul style="list-style-type: none"> • Certain medications (sedatives, opioids, SSRIs) • Prior history of fall/s • History of vertigo • Low/drop in oxygen saturation rate • Normally uses a cane or walker to get around • On a new med with potential side effects including dizziness or confusion 			
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The performance gap in preventing falls

Preventing falls and minimizing injuries is difficult and complex. Often, organizations have competing priorities which lead to placing management of fall prevention and protection from injury under just one discipline, such as nursing. Fall prevention and protection from injury must be organization-wide, with all employees understanding their role and the impact that they can have in creating a culture of safety (HRET, 2016).

The Joint Commission’s Sentinel Alert Event, Issue 55, released September 28, 2015, gives a review and synthesis of current research:

A considerable body of literature exists on falls prevention and reduction. Successful strategies include the use of a standardized assessment tool to identify fall and injury risk factors, assessing an individual patient’s risks that may not have been captured through the tool, and interventions tailored to an individual patient’s identified risks. In addition, systematic reporting and analysis of falls incidents are important components of a falls prevention program. Historically, hospitals have tried to reduce falls - and to some extent have succeeded - but significant, sustained reduction has proven elusive ([Alert, 2015](#)).

Many succeed temporarily due to a “placebo” effect. Simply raising staff awareness will only work to reduce falls for a short period of time.

Use appropriate tools

Most organizations have instituted assessment tools as part of a fall prevention and protection from injury strategy. Organizations should be cautious about using tools that are internally designed without vetting through validation and interrater reliability processes. There needs to be clarification about the role that tools have within the practice setting:

- **Tools used to triage for a fall** are used to predict likelihood of an expected physiological fall and monitors fall risk ([Degelau 2012](#)). The tool provides the probability of an anticipated physiological fall but does not inform caregivers what to do about it ([Morse 1989](#))
- **Assessment tools** provide an assessment of the patient, such as gait, medication, mental status, and other contributing factors. These tools are used to reduce the probability of an anticipated physiological fall. It is important that there is clarity about the tools being used and functionality to assure organizational performance ([Degelau et al., 2012](#)).

Analysis of falls with injury in the Sentinel Event database of The Joint Commission revealed the most common contributing factors are ([Joint Commission 2015](#)):

- Inadequate assessment
- Communication failures
- Lack of resources, including staffing
- Lack of adherence to protocols and safety practices
- Inadequate staff orientation, knowledge, supervision, or skill mix
- Deficiencies in the physical environment
- Lack of leadership

As part of The Joint Commission Center for Transforming Healthcare's Preventing Falls with Injury Project, seven U.S. hospitals entered into a pilot study using Robust Process Improvement® which incorporates tools from Lean Six Sigma to identify the root cause of falls and develop strategies to reduce them. The top contributing factors to a fall were (HRET, 2016):

- Fall risk assessment issues
- Handoff communication (HOC) issues
- Toileting issues
- Call light issues
- Education and organizational culture issues
- Medication issues

A lack of patient-centered practice, congruence, and organizational focus have caused – and continue to cause – preventable patient injury or death while increasing the costs of care. Closing the performance gap with an organizational focus will require leaders and their health systems to commit to specific actions by all disciplines throughout the organization in partnership with patients at risk, as well as their family-member care partners who support their safety before, during and after a hospital stay

- Use quality improvement (QI) processes
- Actively manage the process of change and transformation. Leaders must be committed and stay committed to fall prevention and protection from injury by clearly communicating their commitment, strategies, and learnings ([Boushon 2012](#), [Degelau 2012](#), [France 2017](#), [Ganz 2013](#)).
- Involve employees and representative patients and families through the QI process, including: debriefs, analysis of data, development of action plans, and the acquisition of resources that advance safety
- Use knowledge and management practices to facilitate learning and to promote innovation within the organization. Leaders must apply evidence, innovation, and experimental knowledge to new and existing physical environments, workflow, practice challenges and changes, and decision making ([Boushon 2012](#)).
- As you work to advance person and family engagement, there is a need for cultural transformation and heightened sensitivity to cultural indications and needs of the people you're serving. Understanding how best to engage and empower patients and families will strengthen the partnership and communication that advances patient safety.
- Use patient and family councils to redesign education, the physical environment, and patient/family partnerships that will reduce injuries ([Ryu, Roche and Brunton, 2009](#))
- Develop your organizational story and use storytelling to galvanize the organization into action and stay focused on why there is a need a for change

Engage staff, patients, and families

- Review interventions for fall prevention and protection from injury:
 - Use visual cues to indicate high-risk fall patients for staff members, in addition to ambulation equipment:
 - Examples of visual cues: color coded gowns, wristbands, socks, and external magnets
 - Share this information with patients and families to raise their awareness of fall risks and your steps to prevent them
 - Solicit their agreement to help prevent falls as part of your care team (see CampaignZERO.org for an example checklist you can share)
- Ensure those involved in medication regimes, including administration, understand their roles in fall prevention and protection from injury ([Beasley and Patatanian, 2009](#))
- Use patient stories - in written and video form - to help identify gaps and inspire engagement and change in your staff, such as:
 - The story of Bill Aydt, as told by his daughter, Karen Curtiss, is an inspiring story about how cascading Never Events, initiated by a fall, led to Bill's preventable death. You can freely view a video of the story here: youtu.be/npAC2DJClgA

Define falls and collect and communicate data about falls

- Clearly define what constitutes a patient fall and categorize falls with injury:
 - Leaders must also accept that with clearer definition of patient falls, there will most likely be a reportable increase in falls in the early days of a program
 - High reliability organizations understand that this is not a reflection of staff negligence, but of better data collection policies (HRET 2016)
- Categorize falls with injury. These US National Database of Nursing Quality Indicators (NDNQI), or your country's national database on quality and patient safety indicators, can help you standardize the compiling of the data for comparative analysis ([National report card metrics, 2012](#)):
 - None: Patient had no injuries (no signs or symptoms) resulting from the fall, if an x-ray, CT scan, or other post fall evaluation results in a finding of no injury
 - Minor injury: in application of a dressing, ice, cleaning of a wound, limb elevation, topical medication, bruise, or abrasion
 - Moderate injury: Resulted in suturing, application of steri-strips/skin glue, splinting, or muscle/joint strain
 - Major injury: Resulted in surgery, casting, traction, required consultation for neurological (basilar skull fracture, small subdural hematoma) or internal injury (rib fracture, small liver laceration), or patients with coagulopathy who receive blood products as a result of the fall
 - Death: The patient died as a result of injuries sustained from the fall (not from physiologic events causing the fall)
 - Decide how information about patient fall risk factors is communicated, documented, and shared, then communicate this information to patients at risk and their family member care partners.
- Decide how to integrate practice changes in current workflows.

- Determine staff knowledge and possible biases about fall assessment and prevention.
- Use consistent data collection methods before and after changes are made to your fall prevention and injury protection plan:
 - Clearly define within your institution what constitutes a patient fall.
 - Note that defining falls may cause the measured number of falls to rise at first. High-reliability organizations understand that this is not a reflection of staff negligence, but of better data collection policies.

Clearly define what constitutes a patient fall

([Ganz & Miake-Lye 2013](#), [Registered Nurses Association of Ontario](#))

- Leaders must also accept, that with clearer definitions of patient falls, there will most likely be an increase in falls in the early days of the program. High-reliability organizations understand that this is not a reflection of staff negligence, but of better data collection policies.
- Define the types of falls:
 - Physiological (anticipated): Most in-hospital falls belong to this category. These are falls that occur in patients who have risk factors for falls that can be identified in advance, such as altered mental status, abnormal gait, frequent toileting needs, or high-risk medications
 - Physiological (unanticipated): These are falls that often occur in a patient who is otherwise at low fall risk, because of an event whose timing could not be anticipated, such as a seizure, stroke, or syncopal episode
 - Accidental: These falls occur in otherwise low-risk patients due to an environmental hazard. Improving environmental safety will help reduce fall risk in these patients but is helpful for all patients
- Categorize falls with injury:
 - No apparent injury
 - Minor injury: Bruises or abrasions as a result of the fall
 - Moderate injury: an injury that causes tube or line displacement, a fracture, or a laceration that requires repair, including application of steri-strips
 - Major injury: injury that requires surgery or a move to intensive care unit for monitoring a life-threatening injury
 - Death

Provide education and training

- Ensure that rotations of students, volunteers, and new employees understand the importance of the fall prevention and protection from injury actions.
- Consistently educate newly-admitted patients and their advocates on the importance of their partnership in reducing and avoiding falls. Clearly define their role and actions.
- Get input from patients and families who, themselves, are managing conditions which put them or a loved one at risk for falls.
- Create a post-fall huddle protocol

Include guidelines on how to care for a patient that has fallen:

- Once the immediate medical concerns of the fall have been addressed, perform

a non-punitive root cause analysis, including the patient who fell, and any family member who may have witnessed the fall

- o There are 2 different types of root cause analyses: aggregate and individual
 - Organizations should consider having both processes in place to assure maximum learning and improvement. Highly reliable institutions create a safe environment for staff members, patients and their advocates to report any potential patient safety concerns.
- o Without this safe reporter environment, true root causes will never be found, thus creating negative patient safety outcomes indefinitely

Mother Falls and Newborn Drops: In addition to all other information in this APSS, the following information should be added to increase safety for mothers and newborns.

Pregnant women are not typically identified as high risk for a fall. Yet, falls are the leading cause for Emergency Department visits for this population ([Weiss, Sauber-Schatz & Cook, 2008](#)). There is little attention to falls in the newborn population, although it has been estimated that 600 to 1,600 newborns in the United States experience an in-hospital fall every year." Infant falls can have catastrophic impact to the infant from skull fractures to death.

The National Database for Nursing Quality Indicators (NDNQI) defines newborn falls as the following:

"A newborn fall is a sudden unintentional descent, with or without injury to the patient that results in the patient coming to rest on the floor, on or against another surface, on another person or object." A newborn drop is defined as "a fall in which a baby being held or carried by a healthcare professional, parent, family member, or visitor falls or slips from that person's hand, arms, lap, etc. This can occur when a child is being transferred from one person to another. The fall is counted regardless of the surface on which the child lands and regardless of whether or not the fall results in injury (NDNQI, 2012).

Factors that increase fall risk of the mother ([Heafner, et al., 2013](#)):

- Prior History: History of a fall, history of bedrest, visual impairment
- Cardiovascular: History of anemia or preeclampsia, orthostatic hypotension, dizziness
- Hemorrhage: Postpartum hemorrhage (>1500 ml), placental abruption or previa
- Neuro-function/anesthesia: Post-general, regional or neuraxial anesthesia, paresthesia in the thigh, epidural infusion discontinued <3 hours
- Motor/activity: Able to straight leg raise but unable to bridge, unable able to straight leg raise
- Medications: IV/IM narcotics, anti-hypertensive, tocolytics, sleep aids

Factors that increase fall risk of the newborn are associated with maternal risk factors and additionally (Hodges & Gibert, 2015):

- Second to third post-delivery night between 12 a.m. and 9 a.m
- Surgical delivery
- Maternal use of narcotics
- Mothers aged 18 - 23 years
- Breastfeeding
- Cesarean Birth

Safety Interventions for Parents and Visitors:

- Safety bulletin boards on Mother-Baby Units.
- Crib cards for safe sleeping on every baby crib.
- Nurses role model safe sleep practices.
- Nurses round every 1-2 hours minimum.
- Patient doors are left unlatched at night for nurses to check on infant.
- Nurses instruct mothers (and family) to call the nurses when ready to feed their baby.
- Consider adopting maternal ‘wraps’ to maintain skin to skin contact and reduce falls risk.

Reporting and Debriefing Systems for Infant Falls

- Immediately assess the infant for injury. Assess for head injuries. Confirm attending neonatal provider has been notified and is aware of infants status.
- Complete a post fall assessment and debriefing after each fall.
- Communicate fall incidence in handover communications to assure appropriate monitoring.

Appropriate Risk Assessment Tools

Heafner, et al. 2013, found in the absence of research on fall prevention tools for women hospitalized in obstetric units, most hospitals were utilizing one of the following in perinatal units: Morse Fall Score (MFS); Hendrich (1) Fall Risk Model; or Schmid. The MFS has undergone compelling reliability testing in adult medical-surgical patient populations and long-term rehabilitation care areas. However, Morse identifies the exclusion of obstetric and pediatric populations. (h The Hendrich (1) Fall Risk Model was developed from a review of patients in an acute setting, mostly oncology and orthopedic patients. The Schmid tool was developed by comparing a group of “fallers” with age-matched “non-fallers” and tested on patients from four nursing units deemed high risk for falls. The conclusion was these three instruments may not be appropriate tools to identify women in obstetric units at risk for falls.

Newborn/Infant Drops In-Hospital: Newborn (birth to 28 days old)/Infant (1 to 12 months old)

'Understanding the potential increased risk of newborn falls and drops is a challenge in today's fast paced health care environment. Utilizing principles of high reliability, including preoccupation with failure, a health care system should consider developing a process to help prevent newborn falls and drop for all infants under their care, including:

- Developing an assessment tool to indicate those at increased risk for a newborn fall. This tool will promote common language and a shared mental model among the health care team, and act as a cognitive aid to staff so all are performing assessment in a similar manner.
- Educating parents based on assessment. Those at highest risk should be counseled on the risks for newborn falls and drops and the need to call for help when feeling tired or sleepy. All parents should be cautioned against falling asleep with their newborn in the bed or co-sleeping with their newborn.
- Rounding hourly by staff so mothers or other caregivers noted to be drowsy can be assisted to place their newborn in a bassinet.
- Promoting maternal rest.
- Developing signage for the patient room or a crib card to reinforce the increased risk of infant falls and the importance of placing the infant in a bassinet when the mother is sleepy or after the mother receives pain medications.
- Developing a standardized reporting and debriefing tool in the event of an infant fall. A standard tool will help capture important data to better understanding risk and environment when the event occurred and the result in consistent post-fall care to the newborn. In the event of a fall, providing emotional support to the family or caregiver who may suffer as a second victim in this event

See the following for more information:

- [Joint Commission's "Preventing Newborn Falls and Drops"](#)
- [TJC Newborn Drops](#)
- [TJC Emerging practices to prevent Newborn Drops](#)
- [JOGNN Newborn/Infant Drops](#)
- [Preventing In Hospital Newborn Falls](#)
- [Mother Falls in Perinatal Setting](#)
- [Postpartum Safety: A patient-centered approach to Falls Prevention](#)

Technology plan

Technology in the field of fall prevention and protection from injury has advanced in the utilization of artificial intelligence (AI) with predictive modeling:

- Data and data analytic systems capture and utilize patient information through:
 - o Wearables ([Goodwin et al., 2014](#))
 - o Sensors in garments and footwear

- o Smart technology embedded within beds, chairs, commodes and other durable medical equipment
- Predictive modeling is being embedded into alert systems such as communication and nurse call, and into electronic healthcare records
- Data analytics will drive advances in fall prevention and protection from injury ([Baus et al., 2016](#))

Technology is also advancing into the physical environment with systems designed to create safer environments. New advancements utilize high performance monitoring systems to reduce physical sitters needed for individual observation ([Mccurley, 2014](#)).

In the field of fall prevention and protection from injury, there is a focused approach to **restore muscle strength and balance**:

- In the inpatient arena, technology has influenced advancements in rehabilitation equipment that is supporting earlier mobilization ([Knutson, 2017](#))
- In the outpatient arena, exercising and classes such as Tai chi have provided methods to help individuals at high risk for a fall with an overall approach to strengthen muscles.

While these classes are good, they are problematic for many patients. Emerging is 3D technology and interactive games which have the potential to be customizable to the individual capabilities.

Approach technology use with the understanding that it is multifocal, evolutionary, and not static in both use and understanding. Investments of resources both capital and human are ongoing and need to be planned for as such ([Hamm et al., 2016](#)).

Electronic Health Records can provide meaningful data that can inform predictive modeling, advances in patient safety and further application of evidence into practice. It is only through interoperability of clinical systems that this can be achieved.

Resources

For Falls Prevention Improvement:

- [AHRQ: How do you measure falls rates and falls prevention practices?](#)
- [AHRQ: Preventing falls in hospitals: A toolkit for improving quality of care](#)
- [Australian Commission on Safety and Quality in Healthcare: Guidebook for Preventing Falls and Harm from Falls in Older People: Australian Hospitals](#)
- CampaignZERO: Families for Patient Safety:, Information and checklists for families to help them partner with care providers to prevent falls, infections and other hospital acquired conditions
- [ECRI Institute: Falls](#)
- [Health Research & Educational Trust: Preventing patient falls: A systematic approach from the Joint Commission Center for Transforming Healthcare project](#)
- [Institute for Clinical Systems Improvement. Health Care Protocol: Prevention of Falls \(Acute Care\)](#)
- [National Council on Aging: Falls and Fall-Related Injuries Among Older Adults: A Practical Guide to State Coalition Building to Address a Growing](#)
- Public Health Issue



- [Registered Nurses Association of Ontario: Preventing Falls and Reducing Injury from Falls](#)
- [U.S. Department of Veterans Affairs National Center for Patient Safety: Implementation Guide for Fall Injury Reduction](#)
- [Western Australia Department of Health: Falls Prevention Model of Care](#)
- [Brigham and Women’s Hospital: Patient-Centered Falls Prevention Toolkit](#)
- [When Implicit Bias Harms the Elderly](#)

For General Improvement:

- [CMS: Hospital Improvement Innovation Networks](#)
- [IHI: A Framework for the Spread of Innovation](#)
- [The Joint Commission: Leaders Facilitating Change Workshop](#)
- [IHI: Quality Improvement Essentials Toolkit](#)
- [SIPOC Example and Template for Download](#)
- [SIPOC Description and Example](#)

Endnotes

Conflicts of Interest Disclosure

The Patient Safety Movement Foundation partners with as many stakeholders as possible to focus on how to address patient safety challenges. The recommendations in the APSS are developed by workgroups that may include patient safety experts, healthcare technology professionals, hospital leaders, patient advocates, and medical technology industry volunteers. Workgroup members are required to disclose any potential conflicts of interest.

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