



Service Delivery Innovation Profile

Fall Prevention Toolkit Facilitates Customized Risk Assessment and Prevention Strategies, Reducing Inpatient Falls

Snapshot

Summary

Nurses at Partners Healthcare System use a fall prevention toolkit to periodically assess each hospitalized patient's risk of falling, identify patient-specific risk factors that could lead to a fall, and customize interventions designed to reduce those risks. After completing a computerized risk assessment, nurses review and select tailored prevention strategies recommended by the software. The system then automatically generates a customized fall prevention care plan, educational handout, and bedside alert poster. The program significantly reduced falls, particularly in patients 65 and older.

Evidence Rating (What is this?)

Strong: The evidence consists of a cluster randomized study comparing inpatient falls and fall rates per 1,000 patient days in units implementing the program and similar units not implementing it.

Developing Organizations

Partners Healthcare System

Date First Implemented

2009

What They Did

[Back to Top](#)

Problem Addressed

Falls occur frequently in the inpatient setting and often lead to devastating consequences, including serious injury and death. Traditional hospital-based fall prevention strategies, which tend to use generic, one-size-fits-all intervention protocols that are unrelated to the factors that place individual patients at risk, have yielded mixed results.

- **A common occurrence:** Falls are the second most common adverse event within health care institutions following medication errors,¹ with inpatient fall rates ranging from 5.09 to 6.64 per 1,000 patient days across the nation.² Older adults face a particularly high risk, with one-third of those age 65 and older experiencing a fall each year.³
- **Often devastating consequences:** Falls often lead to devastating consequences; in fact, they represent the leading cause of injury-related death in those 65 and older.³ Hospital-based falls can be particularly problematic, with an estimated 30 percent resulting in serious injury.⁴ The severity of this problem led The Joint Commission to make reducing the risk of patient injuries from falls a national patient safety goal for hospitals in 2009.⁵
- **Limited success of traditional one-size-fits-all approach:** Traditional hospital-based fall prevention programs, which tend to focus on homegrown or nonvalidated risk assessments and universally applied precautions, have yielded mixed results.^{6,7} Relatively few hospitals assess an individual patient's unique risks of falling and then tailor prevention strategies accordingly.⁸

Description of the Innovative Activity

Nurses at Partners Healthcare System use a fall prevention toolkit to periodically assess each hospitalized patient's risk of falling, identify patient-specific risk factors that could lead to a fall, and customize interventions designed to reduce those risks. After completing a computerized risk assessment, nurses review and select tailored prevention strategies recommended by the software. The system then automatically generates a customized fall prevention care plan, educational handout, and bedside alert poster. Key program elements include the following:

- **Periodic risk assessments:** The nurse completes a computerized fall risk assessment on admission, at each shift change, and with each change in patient status. Based on the 125-point Morse Fall Scale, the assessment considers 6 specific risk factors: a recent history of falling (25 points), having at least two diagnoses listed in the medical record (15 points), need for an ambulatory aid (0 to 30 points), use of intravenous therapy (20 points), gait disturbance (0 to 20 points), and impaired mental status (15 points).
- **Patient-specific interventions:** Based on the assessment, the software automatically generates a list of potential interventions tailored to the patient's specific risk factors. The nurse reviews the recommendations and selects those to implement based on his/her knowledge of the patient. Interventions can include strategies to assist with toileting and ambulation (activities that often lead to a fall in high-risk patients), use of a bed/chair alarm, and/or having the nurse check on the patient frequently. Interventions were identified in focus groups with professional and paraprofessional providers⁹ and patients¹⁰ as both effective and feasible in acute care, short-stay hospitals.
- **Communication tools:** After the nurse selects the desired interventions, the software automatically prints three communication tools—a fall prevention care plan, a patient/family educational handout, and a bedside poster—to facilitate information sharing with all caregivers and the patient/family. The tools include simple icons that illustrate any of 11 selected strategies, thus expediting communication about needed interventions. Additional details on these communication tools appear below:
 - **Fall prevention care plan:** This care plan, placed in the patient's chart, lists the patient's risk factors, associated prevention strategies, and icons depicting these activities. (In hospitals using an electronic medical record, the

- plan is automatically incorporated into the patient's interdisciplinary care plan).
- **Patient/family education handout:** This one-page, consumer-friendly handout notes the patient's risk of falling, describes the patient's specific risk factors, lists selected prevention strategies, and depicts the associated icons. The nurse reviews this handout, which can be printed either in English or Spanish, with the patient and family.
- **Bedside alert poster:** This poster, placed above the bed, alerts caregivers and visitors to the patient's risk of falling and depicts a maximum of six icons reflecting specific fall prevention strategies being used with the patient.

References/Related Articles

Dykes PC, Carroll DL, Hurley A, et al. Fall prevention in acute care hospitals: a randomized trial. JAMA 2010; 304(17):1912-18. [PubMed]

Robert Wood Johnson Foundation. INQRI Grantee Uses Health Information Technology to Reduce Falls Among Older Hospital Patients. November 5, 2010. Available at: <http://www.rwjf.org/pr/product.jsp?id=71422>

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[Did It Work?](#)

[Back to Top](#)

Results

The program significantly reduced falls in the inpatient setting, particularly for those patients age 65 and older.

- **Significantly fewer falls:** A 2009 study of more than 10,000 patients compared falls and fall rates in 8 similar inpatient units in 4 hospitals, with 1 unit in each hospital implementing the program and 1 not implementing it. Over the 6-month study period, 67 patient falls occurred on units using the program, well below the 87 falls on those not implementing it. Similarly, implementing units experienced 3.15 falls per 1,000 patient days, well below the 4.18 rate on those not using the program and below the Massachusetts average (mean) of 3.99 falls per 1,000 patient days. Older patients appeared to benefit even more from the program, with the difference in fall rates being greater for those over 65 (2.76 falls per 1,000 patient days in implementing units vs. 5.05 in other units). A separate analysis found that the program prevented roughly one fall every 4 days, or approximately 90 falls a year, on the 4 units.
- **Potentially fewer injury-causing falls in patients over age 64:** Implementing units experienced 7 falls that caused an injury in patients over age 64, below the 9 such falls that occurred on the other units. This difference, however, did not meet the test of statistical significance, due primarily to the small number of such falls. An upcoming study will evaluate the program's impact on injury-causing falls in a population of 80,000 patients.

Evidence Rating (What is this?)

Strong: The evidence consists of a cluster randomized study comparing inpatient falls and fall rates per 1,000 patient days in units implementing the program and similar units not implementing it.

[How They Did It](#)

[Back to Top](#)

Context of the Innovation

The Partners Healthcare System includes 8 hospitals and Partners Community HealthCare, a physician network of more than 4,000 clinicians. The system operates the 907-bed Massachusetts General Hospital, with 47,000 annual patient admissions; the 776-bed Brigham and Women's Hospital, with 46,000 annual admissions; the 414-bed North Shore Medical Center, with 22,000 annual admissions; and the 105-bed Faulkner Hospital, with more than 8,000 annual admissions. The health system's fall prevention task force (which has representation from all system hospitals) served as an advisory board to the research team that developed the fall prevention toolkit. This role was consistent with the fall prevention task force mission to evaluate best practices and standardize fall prevention activities and metrics across the system, with the goal of improving patient safety and quality of care.

Planning and Development Process

Selected steps included the following:

- **Selection of risk assessment tool:** In 2004, the fall prevention task force conducted a literature review of assessment tools and identified the Morse Fall Scale as the tool to be adopted by all system hospitals. Task force members chose this tool because it can easily be used at the bedside, had been prospectively validated in multiple sites, and had been used successfully in many hospitals over a number of years. The task force contacted the tool's developer, Janice Morse, RN, PhD, to discuss proper use of the tool.
- **Development of competency training:** The task force developed an annual competency training program to teach

nurses to use the tool appropriately.

- **Applying for grant funding:** The hospital applied for a Robert Wood Johnson Foundation grant to fund the development and evaluation of the toolkit. This grant, part of the foundation's Interdisciplinary Nursing Quality Research Initiative (INQRI), funds multidisciplinary, nurse-led studies that evaluate the link between nursing care and patient outcomes.
- **Identification of fall prevention strategies:** The research team for the Robert Wood Johnson Foundation grant conducted focus groups^{9,10} with professional and paraprofessional providers, patients, and family members to identify interventions that are both effective and feasible in acute care, short stay settings.
- **Conducting qualitative research:** The research team conducted focus groups in four system hospitals (Brigham and Women's Hospital, Massachusetts General Hospital, Faulkner Hospital, and North Shore Medical Center) selected to pilot test the toolkit. The focus groups offered feedback on barriers and facilitators to communication regarding patients' risk of falling and potential prevention strategies. The research team also interviewed patients who had fallen to identify causes and communication barriers.
- **Development of toolkit:** With the help of information technology staff, the research team developed computer software that incorporated the Morse Fall Scale and prevention strategies associated with the scale's risk factors. The research team also designed the bed poster, patient educational handout, and care plan, and worked with an illustrator to develop icons depicting prevention strategies.
- **Communication and staff training:** Using the Institute for Healthcare Improvement (IHI) Framework for Spread as an implementation model, the research team and the system's chief nurse council identified three nurse champions on each of the units implementing the program. These champions helped develop and test the computer software and train unit nurses to use it.
- **Program expansion:** Health system leaders are evaluating how to expand the program to all system hospitals. They are also considering additional studies to examine the program's impact on injury-causing falls, falls in patients under age 65, and falls in patients with different types of diagnoses (to see if the program works better with some diseases/conditions than others).

Resources Used and Skills Needed

- **Staffing:** The program required no new staff, as existing staff integrated both program development and ongoing program-related activities into existing responsibilities.
- **Costs:** Upfront costs ran roughly \$500,000, consisting primarily of salary and benefits for the staff involved in developing and implementing the program.

Funding Sources

Partners Healthcare System; Robert Wood Johnson Foundation

A 2-year, \$300,000 Robert Wood Johnson Foundation INQRI grant funded the development and evaluation of the toolkit's effectiveness.

Tools and Other Resources

Information about the toolkit and copies of available tools are available from Brigham and Womens Hospital: http://www.brighamandwomens.org/Patients_Visitors/pcs/nursing/nursinged/FALLS.aspx.

More information about the Morse Fall Scale is available at: Morse JM, Morse RM, Tylko SJ. Development of a scale to identify the fall-prone patient. *Can J Aging*. 1989;8(4):366-77.

Information about the IHI Framework for Spread is available at <http://www.ihl.org/knowledge/Pages/IHIWhitePapers/AFrameworkforSpreadWhitePaper.aspx>.

Adoption Considerations

[Back to Top](#)

Getting Started with This Innovation

- **Ensure leadership support:** Hospital leaders must understand the program's purpose and key elements and be willing to communicate its importance to staff.
- **Identify unit-based champions:** Unit-based champions can ensure that staff understand the importance of using the toolkit regularly and ensure that they do so in practice.
- **Use formal implementation plan:** A formal implementation plan can enable the success of any new initiative. It helps participants consider implementation requirements, develop a communication plan, and design strategies to promote adoption by staff. The task force used IHI's Framework for Spread for this purpose, finding it to be important to the program's successful implementation.
- **Involve patients:** Whenever possible, ensure that patients understand their own specific risk factors and strategies that will be used to keep them safe. When they do, they can help with adherence to their fall risk prevention plan.

Sustaining This Innovation

- **Incorporate program into existing workflow:** Nurses have many patient care and quality improvement activities to complete. To ensure its ongoing use, the toolkit should replace existing fall risk assessment activities (e.g., paper-based assessments, use of patient wristbands to designate high risk) and be embedded into existing workflow, thus ensuring that the program requires little or no extra time and effort.

¹ Kohn LT, Corrigan J, Donaldson MS. *To Err is Human: Building a Safer Health System*. Washington, DC: National Academy Press; 2000.

² Krauss MJ, Nguyen SL, Dunagan WC, et al. Circumstances of patient falls and injuries in 9 hospitals in a midwestern

healthcare system. Infect Control Hosp Epidemiol. 2007; 28(5): 544-550. [PubMed]

³ U.S. Centers for Disease Control and Prevention. Falls among older adults: an overview. December 8, 2010. Available at: <http://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>

⁴ Inpatient Falls: Lessons from the Field. May/June 2006. Available at: <http://www.psqh.com/mayjun06/falls.html>

⁵ The Joint Commission 2009 National Patient Safety Goals. 2009. Available at: www.jcrinc.com/common/PDFs/fpdfs/pubs/pdfs/JCReqs/JCP-07-08-S1.pdf (If you don't have the software to open this PDF, download free Adobe Acrobat Reader® software.)


⁶ Fonda D, Cook J, Sandler V, et al. Sustained reduction in serious fall-related injuries in older people in hospital. Med J Aust. 2006; 184: 379-82. [PubMed]

⁷ Oliver D, Hopper A, Seed P. Do hospital fall prevention programs work? A systematic review. J Am Geriatr Soc. 2000; 48 (12): 1679-89. [PubMed]

⁸ Dykes PC, Carroll DL, Hurley A, et al. Fall prevention in acute care hospitals: a randomized trial. JAMA 2010; 304(17): 1912-18. [PubMed]

⁹ Dykes PC, Carroll DL, Hurley AC, et al. Why do patients in acute care hospitals fall? Can falls be prevented? J Nurs Adm. 2009; 39(6): 299-304. [PubMed]

¹⁰ Carroll DL, Dykes PC, Hurley AC. Patients' perspectives of falling while in an acute care hospital and suggestions for prevention. Appl Nurs Res. 2010; 23(4): 238-241. [PubMed]

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