

SPOTLIGHT ON PATIENT SAFETY

Data, trends, and learning from the Minnesota Adverse Health Events Reporting System

September 2008

www.health.state.mn.us/patientsafety

Falls in MN Hospitals

In Minnesota and nationally, falls are one of the leading causes of injury and accidental death among older adults. More than one-third of U.S. adults aged 65 or older fall each year,¹ and falls are the leading cause of injury-related deaths and nonfatal injuries among older adults.²

Most commonly, when the issue of falls receives media attention, the focus is on falls at home or in nursing homes, and with good reason; the majority of fatal and non-fatal falls occur in those settings. However, falls in the hospital, while less common, can have results that are no less devastating for the patient. Published reports on hospital fall rates vary dramatically, with roughly 30% resulting in injury to the patient.³ The Massachusetts Hospital Association recently released data showing over 4,500 inpatient falls during a six-month period in 2006 and 2007, with over 1,000 injuries resulting from those falls.⁴

The Minnesota adverse health events reporting system has been collecting data about certain hospital falls since 2003. The adverse health events database is a rich source of information on falls occurring in Minnesota hospitals, including information about where and why those falls occur, what the outcomes are for patients, and what can be done to prevent future falls or to reduce injury from falls.

Unless otherwise noted, data included here are for falls that were discovered on or after October 7, 2007; these falls are subject to new reporting standards requiring reporting of all falls associated with serious disabilities, rather than just falls associated with deaths. Prior to that date, only falls associated with a patient's death had been reportable.

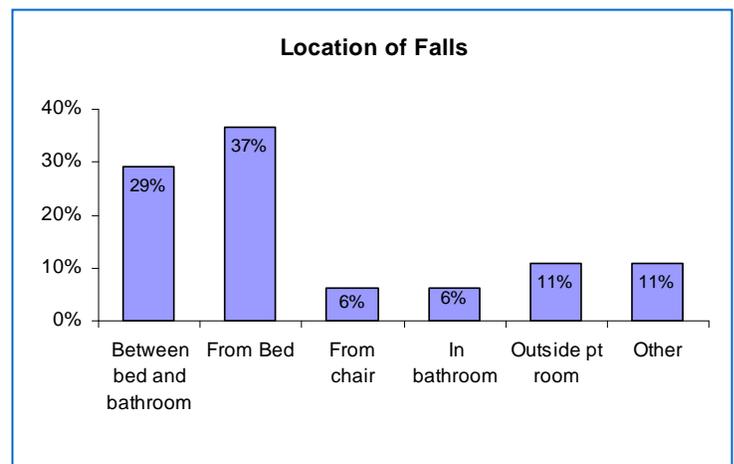
Welcome to 'SPOTLIGHT ON PATIENT SAFETY,' a periodic publication of the Minnesota Department of Health. This newsletter will highlight trends in adverse health event data submitted to MDH, along with recent journal articles of note, tips for registry users, and upcoming events. Enjoy the inaugural issue, and if you have suggestions for future topics, send them to diane.rydrych@state.mn.us.

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Where do falls happen?

Most falls reported to MDH (73%) happened in adult medical or surgical units, with a smaller percentage taking place in inpatient behavioral health or psychiatric units (10%) or in an intensive or critical care unit (6%). The vast majority of reported falls occurred in patients' rooms, with the patient either falling from bed or while ambulating between the bed and the bathroom.



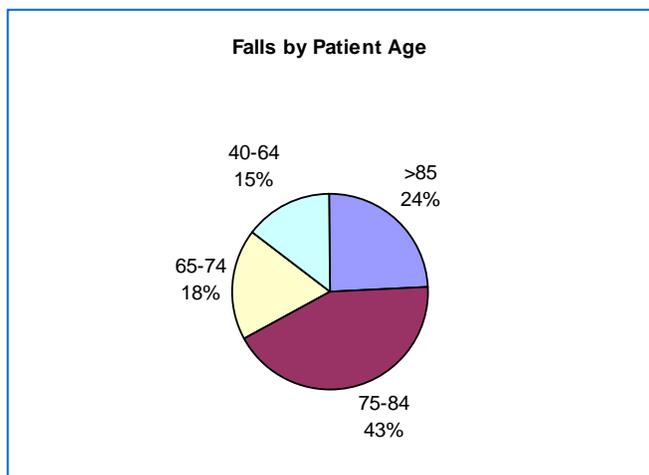
Please see *Falls in MN Hospitals* on page 2

Falls in MN Hospitals, cont.

Who falls?

Older adults are more likely to be hospitalized than younger adults or children. Older adults are also more likely to experience risk factors for falls, which include muscle weakness, a history of prior falls, vision, gait or balance difficulties, multiple high-risk medications, and use of assistive devices, and may be more prone to fracture or serious injury when they do fall.

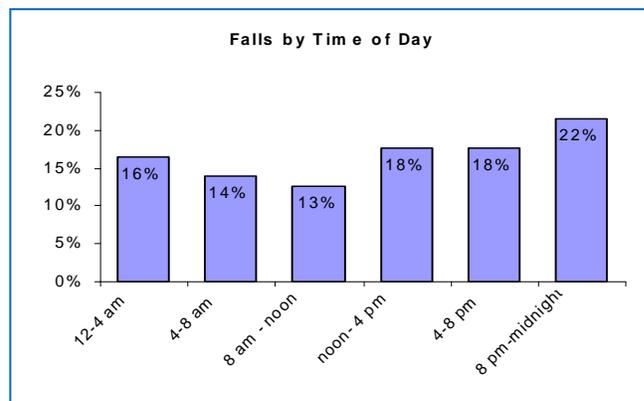
Given these factors, it's unsurprising that older adults make up the bulk of the reported falls with serious disabilities. Two-thirds of reported falls associated with serious disabilities or death involved patients aged 75 or older; nearly a quarter involved patients 85 or older. Among the falls associated with death, 75% involved patients aged 75 or older.



When do people fall?

Evening and nighttime hours appear to present a slightly elevated risk for patient falls based on reported data, with a slight dip during the morning hours. Some patients may receive sleep aids or other medications at bedtime that could make them less alert or stable on their feet, a particular risk for patients who need to use the bathroom. Lower lighting in some areas at night may make it easier for a patient to trip or slip. Staffing may be lower at night, making it more difficult to respond

to call lights; or patients may be less likely to use call lights or ask for help during the night, particularly if they think they can 'do it themselves.' Many reported falls are associated with attempts to use the bathroom unattended.



Among reported falls, 56% occurred between 4:00 p.m. and 4:00 a.m. The two-hour period that saw the highest percentage of falls was 10:00 p.m. to midnight, when nearly 20% of reported falls occurred.

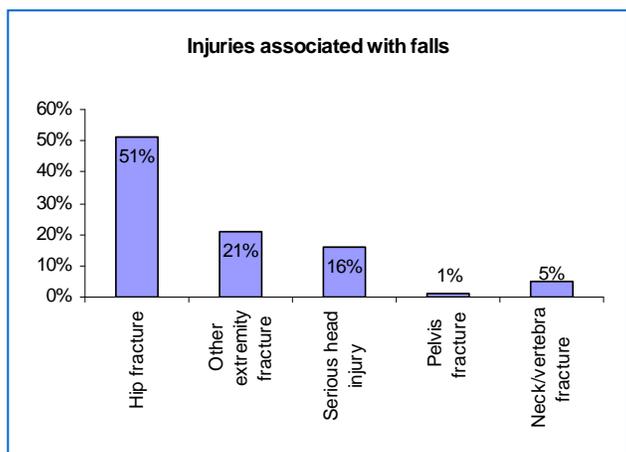
What are the outcomes of falls?

Falls that are reported to the adverse health events reporting system have, by definition, resulted in a serious disability or death of the patient. Falls that result in little or no injury to the patient, while more common than the falls described here, are not required to be reported to MDH.

For serious falls in the community, at home, or in the hospital, the most common resulting injuries include fractures and head injuries. This pattern holds true for falls reported to MDH, as well. Nearly 80% of all reported falls resulted in a fracture, with hip fractures alone accounting for just more than half of all falls with serious disability. Most of the fractures required surgical repair, and some led to a longer stay in the

Falls in MN Hospitals, cont.

hospital or additional rehabilitative services. While hip fractures are most common among all reported falls, subdural hematomas or other serious head injuries were the most common injuries associated with deaths from falls.



What's the role of medications?

Certain medications, such as psychotropic drugs, diuretics, hypnotics or anti-anxiety medications, and sleep aids, can increase an individual's risk of falling, or increase the level of injury resulting from a fall. The risk can be even higher if the person is taking one or more "culprit" medications at a time. In one recent study, patients who were given medications that affect the central nervous system (antidepressants, anticonvulsants, or other medications that have a sedative or hypnotic effect) were more likely to experience falls with injury during the evening or night than those who were not on such medications.⁵

Nearly one out of five falls occurred between 10:00 p.m. and midnight.

Two out of three falls involved a patient aged 75 or older.

MDH is just beginning to collect systematic information about the use of higher fall risk medications in the 24-hour period prior to a fall; at this point, that information is not yet available for most recently-reported falls. However, a number of reported falls include references to medications that can increase fall risk including, most commonly, benzodiazepines such as Halcion, Xanax, and Ativan, and sleep aids such as Ambien.

Why do falls happen?

There are many risk factors for falls, including gait or balance problems, muscle weakness, confusion, a history of previous falls, incontinence, use of culprit medications in the 24 hours prior to the fall, poor vision, and age. Many of those risk factors were in evidence among falls that have been reported to MDH over the last five years.

While hospitals have limited control over the risk factors that are present when a patient is admitted, what they can control is the accuracy with which they assess each patient's risk of falling, and the degree to which they are able to create and maintain an environment for that patient that minimizes their risk of falling or being harmed by a fall. Breakdowns in these protective systems often contribute to falls.

When a reportable fall occurs in a hospital, the hospital is required to report to MDH the results of their internal analysis of the event. This analysis involves looking at a wide variety of potential contributing factors, including communication, staffing, existence of clear and complete policies to prevent falls, equipment, training/education, and adherence to existing policies or protocols related to fall prevention. Hospitals are also required to develop a corrective action plan that is linked to the identified root causes, and to monitor the effectiveness of that plan over time in achieving the desired results. Examining this information can

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Why do falls happen, cont.

provide rich detail on why serious hospital falls happen, as well as on how they can be prevented. A summary of reported root causes is below:

Risk Assessment

Appropriately assessing patients who are at high risk of falls is crucial to prevention. However, not all fall risk assessment tools are created equal; they do not all include the same risk factors or give them the same weight, and they may be more or less difficult for front-line staff to use.

In some cases of reported falls, a factor that appears to have contributed to a patient's fall has not been captured on the risk assessment:

- Assessment tool does not include category for a single previous fall leading to hospitalization.
- Assessment tool vague on how to calculate risk related to certain co-morbidities.
- A medication that sometimes leads to blood pressure changes was not included among the medications that trigger higher-risk status.

Training/education

Regardless of which fall risk assessment tool is used, staff need to have a clear understanding of how to use it and, as importantly, how to link interventions to a patient's individual risk factors. Policies need to be very clear in explaining who needs to do what and at what time, as well as when interventions need to be reviewed. In some RCA's, a system weakness is apparent in these areas:

- RN depended on the assessment score alone, without looking at other clinical factors that might impact fall risk.
- No procedure in place to document specific steps taken with patient to reduce risk.
- Interventions were not changed when a new medication was added that increased the patient's fall risk.

Communication

When a patient is assessed to be at risk for falls, that information needs to travel with the patient throughout the hospital. If some providers are not aware of the patient's fall risk, interventions may be missed, or medications that can further impact fall risk may be given:

- Anesthesia Department was not made aware that the patient had fallen while in the hospital; this knowledge would likely have prompted a reassessment of the patient and possible postponement of a procedure that raised risk.
- Patient's fall risk score was not included in documentation when patient was transferred to a new unit.
- Transport aide and radiology staff didn't receive information about patient's fall risk; patient left unattended in the procedure area.
- SBAR communication tool for standardized hand-off communication between shifts did not include fall risk.

Environment/Equipment

At times, availability of appropriate equipment to prevent falls can be a contributing factor:

- RN was looking for a tab alarm for the patient when patient fell.
- A bed placed in the lowest position was still too high for the patient, and led to a fall when patient attempted to get out of bed.
- Shower curtain and wall were the same color; patient thought the curtain was a solid surface and leaned back against it.
- Nurse assigned to monitor patients in different areas of unit, and could not see all call lights from nurses' station.

Sometimes, other patient factors can contribute to a fall, particularly the common desire to "do it themselves" rather than asking for help. In some cases, patients who had always asked for help in the past chose not to on that day; in other cases, patients who were about to be discharged felt that they should be able to handle their own toileting by the time they left the hospital.

Falls Prevention

Hospitals are required to report to MDH the corrective actions that they are putting in place to address any identified system failures. Below are highlights of corrective actions taken in response to serious falls:

- Implementing new policy for hourly or two-hour rounding for high-risk patients, including a reminder that someone will be back within an hour if the patient needs anything.
- Piloting new equipment, including high-low beds, mats, and new alarms.
- Revising SBAR and other communications protocols to systematically include fall risk at all transfers to other units or services.
- Modifying electronic health record to include information about fall risk status, high-risk medications, and interventions related to fall risk reduction.
- Modifying bathrooms, including position of towel racks and grip bars, location of call buttons, tile surfaces, and color of shower curtains, to minimize risk of falling.
- Establishing interdisciplinary teams to assess fall risk and determine appropriate interventions.
- Modifying risk assessment to account for additional medications that increase risk, and/or to increase risk scores for those who have been admitted as a result of a fall.
- Reviewing medication administration policies for patients who are receiving sleep aids, benzodiazepines, or other high-risk medications.

For Registry Users: Measures of Success

Registry users will note a recent change in the patient safety registry: the addition of fields to collect information on Measures of Success (MOS). The collection of MOS data is an important development for the adverse health event reporting system, marking the first time that we are able to systematically collect follow-up data on adverse health events and determine whether or not interventions have been successful in reducing the risk of future adverse events. Over time, we hope that MOS data will be a valuable source of information about the challenges and successes facilities encounter as they implement interventions.

If you are a registry user, here is what you need to know about MOS:

- MOS reporting applies to all Joint Commission accredited facilities, for all events that are also considered sentinel events by the Joint Commission.
- For events that meet those criteria, MOS reporting is required for any event discovered on or after October 7, 2007.
- At least one MOS is required for every identified root cause.
- The MOS fields are in the RCA section of the registry. When you enter your RCA, you should also enter your measure, as well as the goal and threshold for that measure, the methodology that will be used to measure compliance with the planned action, and the frequency/duration of monitoring.
- The threshold for each measure must be at or above 90%, except in cases where the only possible measure is “complete.” This situation usually only applies to physical plant changes, equipment/supply purchases, or similar situations.
- Information on performance relative to the threshold is due **four months** after the RCA has been approved. If the threshold was not met, additional data is due at **eight months**.
- If thresholds are not met at eight months, MDH will notify the Joint Commission of the event’s status, and the Joint Commission will follow up with the facility.

In the literature: Recent articles of note

The Soil, not the Seed: the Real Problem with Root Cause Analysis

Spath, P, and Minogue, W.

AHRQ Web M&M: Perspectives on Safety
July 2008

<http://www.webmm.ahrq.gov/>

This commentary is in response to Wu et al's recent article on Root Cause Analysis in the Journal of the American Medical Association, which suggested that RCA's often do not lead to reduced risk of patient harm. In their response, Spath and Minogue argue that the hospital environment (the soil) may be more important than the specific safety intervention (the seed) in determining whether or not those interventions will "take root."

Inpatient suicide and suicide attempts in Veterans Affairs hospitals.

Mills PD, DeRosier JM et al

Jt Comm J Qual Patient Saf. 2008;34:482-488.

This study examined RCA reports for 185 suicides and attempted suicides reported to the NCPS between 1999 and 2006. The authors found that roughly half occurred on inpatient psychiatry units, and slightly less than 10% in the

ED. Hanging accounted for more than 30% of all suicides or attempts, followed by cutting with a sharp object at 20% and intentional drug overdoses at 19%. Doors and wardrobe cabinets were used in over 40% of hanging events, and bedding was by far the most common material used, followed by belts and shoelaces.

The article also includes recommendations for reducing risk, including eliminating doors when not required by code, removing cabinet doors and replacing rods and hangars with shelves, eliminating belts, shoelaces and safety razors, shaving high risk patients or observing them while shaving, and conducting regular environmental rounds using a comprehensive checklist for potential environmental hazards.

Revealing and resolving patient safety defects: the impact of leadership WalkRounds on frontline caregiver assessments of patient safety.

Frankel A, Grillo SP, Pittman M, et al.

Health Services Research 2008 Jul 29

A study of seven hospitals that implemented leadership walk rounds; only two were able to successfully do so, but those hospitals experienced significantly improved safety climate. Includes a discussion of factors that influenced successful implementation of the model.

Upcoming events

**Minnesota Alliance for Patient
Safety 2008 Conference**
Nov 13-14, 2008

<http://www.mnpatientsafety.org>

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www.health.state.mn.us/patientsafety



References

- 1 Hausdorff JM, Rios DA, et al. (2001) Gait Variability and fall risk in community-living older adults: a 1-year prospective study. *Archives of Physical Medicine and Rehabilitation*; 82 (8): 1050-56.
- 2 Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/ncipc/wisqars
- 3 Stevens, J A (2004). Falls among older adults-risk factors and prevention strategies. *In Falls Free: Promoting a National Falls Prevention Action Plan*. Washington, DC: National Council on Aging.
- 4 Kowalczyk, L. (2007, October 15). *Acute care hospitals post data on falls*. Boston Globe
- 5 Hitcho EB, Krauss MJ, et.al. (2004) Characteristics and circumstances of falls in a hospital setting: A prospective analysis. *Journal of Geriatric Internal Medicine*, 19(7), 732-739.