SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

The purpose of this study is to reinforce the need for conscientious safety standards geared towards reducing EMU patient falls and to highlight the challenges that arise when attempting to identify the best practices for attaining this goal.

Fall prevention and bathroom safety in the epilepsy monitoring unit

Spritzer, S. D., Riordan, K. C., Berry, J., Corbett, B. M., Gerke, J. K., Hoerth, M. T., Crepeau, A. Z., Drazkowski, J. F., Sirven, J. I., Noe, K. H., 2015 | *Epilepsy & Behavior*. Volume 48, Page 75-78

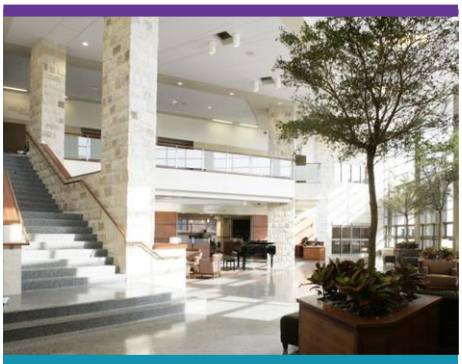
Key Concepts/Context

Injury-inducing falls are one of the most common harmful events that occur in epilepsy monitoring units (EMUs). Considering the risk provoked by epileptic symptoms such as spontaneous seizures, patients admitted to EMUs may be more likely to sustain falling injuries over patients in other areas of the hospital. Bathrooms are a notably risky area for EMU patients since safety must be balanced with privacy in a space filled with hard surfaces such as sinks and toilets. Due to the small amount of data and evidence-based reporting on the effectiveness of fall prevention strategies, a large variety of different safety protocols and procedures have been implemented between institutions. Further comparative research is needed to determine which specific strategies are most effective and affordable for preventing injurious falls in EMUs.

Methods

This is a retrospective study examining both the frequency of patient falls and the impact of continual changes in fall prevention strategies occurring between 2001 and 2014 in an epilepsy unit at a US hospital. EMU patient charts were cross-referenced with a unit-based database documenting falls within the hospital. Footage of clinical events taking place between 2008 and 2010 was selectively reviewed to study fall locations and associated injuries.

- The study EMU has 6 adult (>18 years of age) inpatient beds that have padded rails, are equipped with voluntary harnesses and raised in the up position, and continuously monitored by nurses with epilepsy-specific training. There is a maximum nurse-patient ratio of 1:4.



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- When out of the bed, patients are always monitored by at least one staff member.
- A technician monitors EMU patients through live video and vital monitors 24/7, supplemented by a computer detection system. Technicians activate audible and visible alarms to mobilize nurses when significant events occur. In the event of a fall, assessments and monitoring are engaged according to the level of injury, and everything is documented.
- The patient sink area is not enclosed and is monitored both by camera and an attendant.
- Toilet areas are off-camera and enclosed, but nurses remain by the door and are encouraged to use verbal communication with patients inside.
- In 2005, a star-shaped magnet was placed outside of rooms belonging to patients facing higher risk of falling.
- In 2007, scheduled hourly rounding was instated in the EMU to decrease the chances of patients leaving their beds without assistance, chair alarms and signage included
- 2010, in-room fall alert signage, patient/staff education
- 2011 – bed alarms instituted
- In 2013, ceiling lift systems with torso vests were installed throughout the EMU. Lift rails extended into bathrooms so that patients could ambulate and be supported in the privacy of the restroom.

Findings

Of many sequential interventions that served to reduce fall rates during a 13-year period, lifts had the highest impact. From 2001 through 2014, a total of 39 falls occurred in the EMU a total fall rate of 2.81 falls per 1000 EMU days. No falls occurred in the EMU in the 15 months after the installation of the ceiling lift system in 2013. Analysis of patients admitted from 2008 through 2010 was conducted to determine if bathrooms posed an increased risk of falls. Of the 1461 events reported during this time (events being defined as patients experiencing physiologic happenings, both seizure and non-seizure related), ten resulted in a fall. Four of these ten falls occurred in the bathroom, with two of those resulting in minor injuries. Analysis indicated events (but not any single event type) occurring in the bathroom (versus other areas of the patient room) were more likely to result in a

fall. The authors indicate that lifts allowing ambulation may help balance the need for limited mobility to prevent a fall while preventing the risks of prolonged immobility. In addition, when the lift system has been in use and prevented patients from falling, staff injury associated with trying to prevent a patient fall has also been mitigated.

Limitations

A small sample size of one EMU was used in the study. While the impact of new policies and procedures was measured by quantifying the number of falls on a unit-based scale, other measures of impact such as patient feedback regarding levels of comfortability with staff care and ceiling lift systems was minimal.

Design Implications

Spacious rooms, hallways, and sink areas that allow lifts to support ambulation could reduce falls and offer a wider range of movement for patients and the staff members accompanying them. Hard surfaces, especially toilets and sinks, pose elevated risks to epileptic patients at a higher risk for falls. Considering to the apparent effectiveness of ceiling lift systems, designers might consider structuring ceilings and walking spaces to maximize lift safety, patient mobility, and ease of use.