

Floor Mat Resource and Implementation Guide

Falls are a frequent source of physical trauma, with 30-51% of patients in hospitals experiencing some injury from a fall (Oliver, Healey & Haines, 2010). Falls in long term care (LTC) facilities tend to result in more serious complications, with 10% to 25% of such falls resulting in fractures or lacerations. The most common serious complications of falls in LTC facilities are hip fractures and head injuries (Becker & Rapp, 2010).

The burden of trauma requires that interventions are implemented to protect our Veterans by reducing the risk of such physical trauma. Floor mats, pads placed on the floor at the bedside or chair side, is one intervention implemented in many VHA medical centers and long-term care settings since 2007. Researchers and clinicians have increasingly gathered laboratory based evidence on the protective properties of floor mats (Wright & Laing, 2012; Raymond, Catena, & Vaughan, 2011; Bowers, et al, 2008). as measured by reducing risk of severe head injury, measured by head injury criteria (HIC).

Purpose: This resource guide introduces clinicians to the selection criteria for floor mats, appropriate use of floor mats, myths and facts for their use, and social marketing strategies to increase staff use of floor mats at the point of care. Clinicians also are provided with guidance for care and replacement of the floor mats.

Selection Criteria

You are referred to criteria used for testing and selecting floor mats. There criteria are:

- Impact Attenuation: the degree in which the mat reduces the impact force during a fall.
- Stability: How well a person can stand on the mat without losing their balance
- Friction: The mat surface slipperiness
- Thickness: The overall thickness of the mat
- Weight: The overall weight of the mat
- Overall Size: Refers to the mat's length and width.

Floor mat properties and characteristics have been evaluated based on these criteria. Please refer to the follow site for results:

[VISN 8 Floor Mat Guide](#)

Tips and Tricks:

- Bedside floor mats are a common component of a fall-injury prevention programs in many VA facilities, although their efficacy has never been tested.
- Make sure you are using floor mats with beveled edges to reduce tripping risk. Inspect the floor mat for curled edges, and if present, request manufacturer replacement.
- Check with the manufacturer for cleansing instructions. Work with your local environment of care/housekeeping service to establish a routine cleaning schedule and process.
- Many staff store mats underneath the bed when the patient is not in the bed. Mats that are constructed with fold lines may be easier to store than ones that cannot be folded.
- Thickness and edge characteristics are important to consider when selecting a floor mat, due to the tripping hazard introduced when a mat is placed next to a bed. Thicker mats will produce a higher risk for tripping. Beveled edges reduce tripping risks.
- Glow-in-the-dark strips around the mat's edges increase visibility of the bedside floor mat at night, and may decrease trip hazard.

Appropriate Use

- Floor mats are used for patients who you worry will get out of bed without calling for help and are at risk for injury.
- The floor mat is to be place at the side of the patient the patient exits the bed from, and only on the floor when the patient is resting in bed
- Stow the floor mat safely when patient is standing and ambulating.
- Should the nurse choose to leave the floor mat at the exit side of the patient's bed when approaching the patient in the bed, the nurse should exercise caution with stepping to decrease trip risk.
- The size of the floor mat is an important consideration for use. It is most prudent to use a mat that extends beyond the head of the bed and one that is at least 44 inches wide.
- Furniture near the head of the bed should be placed with care and sharp edges should be padded for persons likely to fall from bed.

True or False?

1. Floor Mats should always be on the floor

False.

If the patient is going to stand or transfer with assistance, the floor mat is to be removed and stow away from the bed. The floor mat is only on the floor when the patient is resting in bed.

2. Floor Mats create greater risk for falls

True.

For patients who stand on the floor mat, if the mat is not stowed before standing, may be at greater risk for falls if the patient has decreased balance or loss of lower extremity sensation. It is important to stow the floor mat if you are preparing to assist the patient to stand or transfer. If using floor mats without beveled edges, fall risk may also be associated with tripping on the edge of the floor mats. Thus, organizations should select floor mats with beveled edges and that can be detected at night.

3. One Floor Mat works for all patients

False.

Characteristics of floor mats vary by product and vendor. Patients have differing fall risks associated with intact vs. impaired gait, balance, stepage, proprioception, and somatosensory integration. Thus, one floor mat does not work for all patients. Thus, organizations must have multiple products for clinicians to choose from based on the patient's characteristics.

What to Do and what NOT to do when using Floor Mats (to be developed)

Do: Place the floor mat at the patient's exit side of the bed when the patient is resting; Pick up and stow the floor mat when providing patient care or preparing the patient to stand or transfer.

Do NOT: Leave the floor mat at the bedside at all times

Cleansing and Replacement

- Check with the manufacturer for cleansing instructions. Work with your local environment of care/housekeeping service to establish a routine cleaning schedule and process.
- If the floor mat's edges start to curl up or if the integrity of the cover is altered, the floor mat should be replaced.

References

Becker, C., & Rapp, K., (2010). Fall prevention in nursing homes. *Clinics in Geriatric Medicine*. 26: 693-704.

Boushon B, Nielsen G, Quigley P, Rutherford P, Taylor J, Shannon D, Rita S. How-to Guide: Reducing Patient Injuries from Falls. Cambridge, MA: Institute for Healthcare Improvement; 2012. p. 25.

Bowers B, Lloyd J, Lee W, Powell-Cope G, Baptiste A. Biomechanical evaluation of injury severity associated with patient falls from bed. *Rehabilitation Nursing*. 2008;33(6):253-259.

Crane, B, Certo, C., Goodworth, A. (2012). A floor covering to reduce injury in hospital falls: A multidisciplinary approach. Platform presentation at the Connecticut Chapter Physical Therapy Association (CPTA) annual conference, September 29, 2012 in Cromwell, CT.

Oliver, D., Daly, F., Martin, F. C., & McMurdo, M. E. T. (2004). Risk factors and risk assessment tools for falls in hospital in-patients: A systematic review. *Age & Ageing*, 33(2), 122-30.

Raymond DE, Catena RD, Vaughan TR. Biomechanics and injury risk assessment of falls onto protective floor mats. *Rehabilitation Nursing*. 2011;36(6):248-254.

Implementation Guide to **Prevention of Falls with Injury**

[PREVENTION OF FALLS WITH AND WITHOUT INJURIES OVERVIEW](#) the assessment of the patient's strongest side when getting out of bed, floor mats ...

[Chapter 10. Fall and Injury Prevention - Agency for Healthcare](#)

Fall and injury prevention continues to be a considerable challenge across the care a fall as “unintentionally coming to rest on the ground, floor, or other lower ...

[Road Map to a Comprehensive Falls Prevention Program](#)

4c) Interventions to reduce serious injuries for patients at risk for fall-related injury, e.g. hi/low bed, floor mats, hip protectors, helmets for patients with missing ...

[Biomechanics and injury risk assessment of falls](#) onto protective ...

This article presents biomechanical injury criteria for evaluating the ... Falls onto floor mats demonstrated significant reductions in injury risk to the head and ...

[Raymond DE, Catena RD, Vaughan TR.](#)

Biomechanics and injury risk assessment of falls onto protective floor mats. *Rehabil Nurs*. 2011 Nov-Dec;36(6):248-54.

Wright, A.D., & Laing, A.C. (2012). The influence of head for orientation and flooring systems on impact dynamics during simulated fall-related head impacts. *Medical Engineering & Physics*, 34: 1071-1078.