



Clinical Guidance for the Assessment and Implementation of Bed Rails in Hospitals, Long-Term Care Facilities, and Home Care Settings*

Developed by the Hospital Bed Safety Workgroup

Introduction

In this first part of a two-part series on bed rails, *Assisted Living Consult* presents an excerpt from the Clinical Guidance of the Hospital Bed Safety Workgroup. This excerpt focuses on assessing individual residents to determine the need for bed rails. In the next issue, we will present the second part of the series, which discusses types of beds and how to assess them for your residents' needs.

Every resident deserves a safe and comfortable sleeping and bed environment. The goal of this clinical guidance is the provision of such an environment to residents in hospitals, residents of long-term care (LTC) facilities, and residents in home care settings. The term *bed rails* is used in this document. Commonly used synonymous terms are *side rails*, *bed side rails*, and *safety rails*. Bed rails are adjustable metal or rigid plastic bars that attach to the bed and are available in a variety of shapes and sizes from full to half, one-quarter, and one-eighth in lengths.¹

Although various types may be used depending on a resident's medical and functional needs, bed rails may pose increased risk to resident safety. Clinical research suggests that bed rails may not be benign safety devices. For example, evidence indicates that half-rails pose a risk of entrapment and full rails pose a risk of entrapment as well as falls that occur when residents climb over the rails or footboards when the rails are in use.^{2,3}

Guiding Principles

National surveys of patient deaths occurring in the bed environment demonstrate the risk of entrapment when a patient slips between the mattress and bed rail or when the patient becomes entrapped in the bed rail itself. The population at risk for entrapment are patients and LTC residents who are frail or elderly or those who have conditions such as agitation, delirium, confusion, pain, uncontrolled body movement, hypoxia, fecal impaction, and acute urinary retention that cause them to move about the bed or try to exit from the bed. The absence of timely toileting, position change, and nursing care are factors that may also contribute to the risk of entrapment. The risk may also increase due to technical issues such as the mis-sizing of mattresses, bed

rails with winged edges, loose bed rails, or design elements such as wide spaces between vertical bars in the rails themselves.

The principles that follow are intended to guide the development of residents' care plans.

1. The automatic use of bed rails may pose unwarranted hazards to resident safety.

When planning resident care, consider the following:

- The potential for serious injury is more likely to be related to a fall from a bed with raised bed rails when the resident attempts to climb over, around, between, or through the rails, or over the foot board, than from a bed without rails in use.
- Evaluation is needed to assess the relative risk of using the bed rail compared with not using it for an individual resident.
- Bed rails sometimes restrain residents. When used as restraints, bed rails can pose the same risk to resident safety as other types of physical restraints.
- Resident safety is paramount. In an emergent situation the caregiver needs to do whatever is necessary in his or her professional judgment to secure the resident's safety. Consider that using a bed rail or other device to restrain the resident could place the resident's safety at risk.
- Physical restraints such as vest/chest, waist, or leg/arm restraints used simultaneously with raised bed rails may be medically indicated in certain limited circumstances in the acute care environment. Consider that when physical restraints and bed rails are used simultaneously:
 - The risk to resident safety (eg, suffocation or accidental suspension) may increase.
 - Residents should be monitored closely.
 - Appropriate care such as toileting should be provided.
 - Reassessment for medical necessity and removal is needed regularly.
- Strangling, suffocating, bodily injury, or death can occur when residents or parts of their bodies are

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caught between rails or between the bed rails and mattresses.

2. Decisions to use or to discontinue the use of a bed rail should be made in the context of an individualized resident assessment using an interdisciplinary team with input from the resident and family or the resident's legal guardian.
3. The resident's right to participate in care planning and make choices should be balanced with caregivers' responsibility to provide care according to an individual assessment, professional standards of care, and any applicable state and federal laws and regulations.

Policy Considerations

1. Regardless of the purpose for which bed rails are being used or considered, a decision to utilize or remove those in current use should occur within the framework of an individual resident assessment.
2. Because individuals may differ in their sleeping and nighttime habits, creation of a safe bed environment that takes into account residents' medical needs, comfort, and freedom of movement should be based on individualized resident assessment by an interdisciplinary team.
 - The composition of the interdisciplinary team may vary depending on the nature of the care and service setting and the resident's individual needs. Team members for consideration should include, but are not limited to nursing, social services, and dietary personnel; physicians (or their designees); medical directors; rehabilitation and occupational therapists; residents; family (or authorized representatives); and medical equipment suppliers.
 - The resident and family (or authorized representative) play a key role in the creation of a safe and comfortable bed and sleeping environment. These individuals can provide information about the resident's previous sleeping habits and bed environment that caregivers need to design the bed environment. Their participation in discussions facilitates creation of a bed and sleeping environment that meets residents' needs.
3. Use of bed rails should be based on residents' assessed medical needs and should be documented clearly and approved by the interdisciplinary team.
 - Bed rail effectiveness should be reviewed regularly.
 - The resident's chart should include a risk-benefit assessment that identifies why other care interventions are not appropriate or not effective if they were previously attempted and determined not to be the treatment of choice for the resident.
4. Bed rail use for treatment of a medical symptom or condition should be accompanied by a care plan

(treatment program) designed for that symptom or condition.

- The plan should present clear directions for further investigation of less restrictive care interventions.
 - The documentation should describe the attempts to use less restrictive care interventions and, if indicated, their failure to meet residents' assessed needs.
5. Bed rail use for resident's mobility and/or transferring, for example turning and positioning within the bed and providing a hand-hold for getting into or out of bed, should be accompanied by a care plan.
 - The resident should be encouraged to participate in care planning to help design a safe and comfortable bed environment.
 - The care plan should:
 - Include educating the resident about possible bed rail danger to enable the resident to make an informed decision
 - Address options for reducing the risks of the rail use
 6. The process of reducing or eliminating existing use of bed rails should be undertaken incrementally using an individualized, systematic, and documented approach.
 7. Creating a safe bed environment does not necessarily preclude the use of bed rails. However, a decision to use them should be based on a comprehensive assessment and identification of the resident's needs, which include comparing the potential for injury or death associated with use or non-use of bed rails to the benefits for an individual resident. In creating a safe bed environment, the following general principles should be applied:
 - Avoid the automatic use of bed rails of any size or shape.
 - Restrict the use of physical restraints, including chest, abdominal, wrist, or ankle restraints of any kind on individuals in bed.
 - Inspect, evaluate, maintain, and upgrade equipment (beds/mattresses/bed rails) to identify and remove potential fall and entrapment hazards and appropriately match the equipment to resident needs, considering all relevant risk factors.
 - Reassess the resident's needs and reevaluate the equipment if an episode of entrapment or near-entrapment occurs, with or without serious injury. This should be done immediately because fatal "repeat" events can occur within minutes of the first episode.

Process/Procedure Considerations

The items listed below are not meant to be all-inclusive. Caregivers may identify other concerns that need to be addressed.

1. Individualized resident assessment

Any decision regarding bed rail use or removal from use should be made within the framework of an individual resident assessment (Table 1). If a bed rail has been determined to be necessary, steps should be taken to reduce the known risks associated with its use.

2. Sleeping environment assessment

This assessment (Table 2) includes elements or conditions that may affect the resident's ability to sleep and may be considered in evaluating areas to address in a resident's care plan.

3. Treatment programs/care plans

- Address diagnoses, symptoms, conditions, and behavioral symptoms for which the use of a bed rail is being considered.
- Identify nursing, medical, and environmental interventions (eg, for a resident with a life-long habit of staying up at night, provide nighttime activity).
- If clinical and environmental interventions have proven unsuccessful or a determination has been made that the risk of bed rail use is lower than that of other interventions or of not using them, bed rails may be used. Documentation of the risk-benefit assessment should be in the resident's medical chart.
- The team should review the treatment program

**Table 1.
Individual Patient Assessment**

Consider the following:

- Sleep habits
- Medication
- Acute medical or surgical interventions
- Underlying medical conditions
- Existence of delirium
- Ability to toilet self safely
- Cognition
- Communication
- Mobility (in and out of bed)
- Risk of falling

and determine its effects on the resident through an ongoing cycle of evaluation that includes assessment of outcomes and adverse effects.

- When planning care for the resident for whom a low bed is selected, consider the potential effects on the resident—restraining desired voluntary movement or creating an unwanted psychological

**Table 2.
Sleeping Assessment**

- Comfort
 - Pain
 - Hypoxia
 - Grieving
 - Loneliness
 - Hunger, thirst
 - Hydration
 - Calorie intake and protein calories
 - Boredom
 - Amount of time spent in bed
 - Light levels
 - Temperature
- Understanding of self and family
 - Hobbies, interests, religion
 - Pictures of family
- Proximity to toilet
 - Toilet within view
 - Toilet accessible
 - Strategy (patient with or without help from caregiver) for toileting
- Appropriate bed
 - Comfortable
 - Safe
 - Height
 - Mattress/overlay
 - Mattress edge definition (if necessary)
 - Support for turning (if necessary)
 - Strategy for safe egress
 - Elevation for head of bed
- Support by caregivers
 - Individualized toileting schedule
 - Routine comfort assessment
 - Skin care and hygiene
 - Emotional and physical support
- Medical stabilization
 - Treatment of underlying acute medical problems
 - Dosages and types of medication
 - Effects of long-term use of hypnotics
 - Pain treatment strategy
 - Caution with orthostatic medications (diuretics, short-acting antihypertensives)
 - Diuretics (if indicated) not given at night
 - Diabetic snack given at night
 - Treatment for nocturnal esophageal reflux
 - Bowel elimination plan for regularity

effect by being placed close to the floor. The individualized care plan and risk benefit considerations should address these issues and the plan modified accordingly.

4. General guidance

- a. A resident is assessed to be at low risk for injury, as defined by the factors that follow. Those who meet these factors may be better without bed rails.
 - Transfers safely to and from the bed to a wheelchair without assistance
 - Ambulates without assistance to and from the toilet without falling
 - Has not fallen, or is unlikely to fall, out of bed
 - Notifies staff appropriately using call system
- b. A resident is assessed to be unsafe in bed, or at high risk for injury, as defined by these factors:
 - Inability to transfer safely to and from the bed to a wheelchair
 - Previous entrapment or near-entrapment episode
 - Inability to ambulate to and from the toilet without falling
 - History of bed-related serious injury
 - Episodes of falling out of bed, or likelihood that such episodes will occur
 - Inconsistent in notifying staff of needs or unable to access the call system

Consider placing this resident in an adjustable-height bed that can go very low to the floor for sleeping and can be raised at other times or an alternative such as a concave mattress. Use a high-impact mat next to the bed.

- c. For a resident whose assessment indicates the need for a bed in a low position but who has difficulty getting into the low bed from the standing position, consider an adjustable-height bed. If this is not available, consider adding a quarter rail or transfer device to a low bed for the resident to hold for support while entering the low bed. When selecting a support hold, consider:
 - Such rails should contain cross bars close enough to prevent the passage of the resident's head or body part through the rail and fit closely enough to the mattress to prevent entrapment.
 - Other interventions exist, such as secured vertical poles used for transferring in and out of bed. These poles, which are secured into the ceiling and floor, have weight limits. Tape applied to the pole may increase traction. They are generally used with more cognitively functional individuals.
- d. Consider using a bed alarm for a resident who is assessed to need a low bed, but is in danger of hurting himself or herself while exiting from the low bed or is in danger of an unstable transfer af-

ter standing up by grabbing onto a bed side table or sink.

- Base the decision on the individual resident's clinical condition and assessment.
 - Carefully consider the use of bed alarms for the resident who is agitated or confused.
- e. Steps should be taken to reduce risk of injury to residents and caregivers. Keep the bed in the lowest position with the wheels locked when occupied, adjusting the level for activities such as administering care or for resident transfers in/out of bed:
 - Place a high-impact mat next to the low bed to cushion falls from the low bed as long as this does not create a greater risk of accident to the resident or caregivers.
 - Raise the bed to give care and lower it when finished. If the bed is not adjustable, utilize body mechanics techniques such as kneeling on one or both knees on the high impact mat rather than bending over.
 - Store the high-impact mat when it is not in use.
 - Assess the area for objects that may cause injury.
 - Move furniture far enough away from the bed to avoid risk of injury.
 - Train caregivers about the proper use of low beds and proper body mechanics.

Risk Intervention

Assessment of risk should be part of the individual resident's assessment, and steps to address the risk should be incorporated into the resident's care plan. The following are examples of risk intervention approaches.

Nursing

- Provide individually scheduled toileting.
- Develop a schedule for turning and positioning.
- Clean urine or feces promptly.
- Elevate the head of bed for residents with congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), reflux, and actively infusing enteral fluids.
- Position residents to maximize comfort and change positions in a timely manner, maintaining comfort and reducing risk for skin breakdown.
- Accommodate residents' preferred bedtime habits whenever possible.
- Restrict use of physical restraints on residents in bed.
- When medically indicated, use padded bed rails for individuals with an active seizure disorder or active movement disorder.
- Provide distractions such as music, television, or food and fluids for residents who do not sleep through the night.
- Provide calming interventions and pain relief.

- Plan time during the day to provide periods of physical activity that help promote a restful sleep.
- Reevaluate and revise resident's treatment program as needed if an episode of entrapment or near-entrapment occurs with or without serious injury.

Medical

- Minimize use of medications that alter mental status.
- Use alternatives to sleeping medications.
- Dispense diuretics before the late afternoon or evening.
- Treat pain.
- Screen and treat for hypoxia.
- Assess the clinical status of delirious residents to rule out reversible etiologies.
- Promote mobility and fitness (eg, restorative care to enhance abilities to stand safely and to walk).

Resident and Family

- Seek and utilize input about the resident from the resident and family (or authorized representative) to assist in identifying nursing and medical risk interventions.
- Since the resident and family are integral members of the team, they should be encouraged to learn about bed safety and appropriate care options.

Individualized Environmental Changes

The environmental changes listed here are suggestions for consideration. Whether they will be used for an individual resident depends on the resident's assessment.

1. Use of low beds with adjacent mat on the floor (with consideration given to using mechanical lifts and proper lift technique training for caregiver staff).
2. Use of low beds that can be elevated electronically for transfer and activities of daily living (ADLs) care.
3. Placement of the resident's call bell within easy reach and provision of visual and verbal reminders to use the call bell when necessary.
4. Use of bed alarms to warn of residents' attempts to exit from bed.
5. Use of "perimeter reminders" or "border definers" such as body pillow/cushions or mattresses with lipped/raised edges.
6. Use of a trapeze to increase the resident's bed mobility. (For residents with shoulder conditions, trapeze use should be carefully scrutinized.)
7. Placement of inconspicuous signs, without residents' names, to inform caregivers of interdisciplinary care team recommendations.

Bed Rails as Restraints

When bed rails have the effect of keeping a resident from voluntarily getting out of bed, they fall under the

definition of a physical restraint. If they are not necessary to treat medical symptoms, and less restrictive interventions have not been attempted and determined to be ineffective, bed rails used as restraints should be avoided. Bed rails used on the bed of a resident who is completely immobile do not serve as restraints, but may not be medically necessary. It is recommended that they be avoided.

Bed Rail Safety Guidelines

If it is determined that bed rails are required and that other environmental or treatment considerations may not meet the individual resident's assessed needs, or have been tried and were unsuccessful in meeting the resident's assessed needs, then close attention must be given to the design of the rails and the relationship between rails and other parts of the bed.

1. The bars within the bed rails should be closely spaced to prevent a resident's head from passing through the openings and becoming entrapped.
2. The mattress to bed rail interface should prevent an individual from falling between the mattress and bed rails and possibly smothering.
3. Care should be taken that the mattress does not shrink over time or after cleaning. Such shrinkage increases the potential space between the rails and the mattress.
4. Check for compression of the mattress's outside perimeter. Easily compressed perimeters can increase the gaps between the mattress and the bed rail.
5. Ensure that the mattress is appropriately sized for the selected bed frame, as not all beds and mattresses are interchangeable.
6. The space between the bed rails and the mattress and the headboard and the mattress should be filled by either an added firm inlay or a mattress that creates an interface with the bed rail that prevents an individual from falling between the mattress and bed rails.
7. Latches securing bed rails should be stable so that the bed rails will not fall when shaken.
8. Older bed rail designs that have tapered or winged ends are not appropriate for use with residents assessed to be at risk for entrapment.
9. Maintenance and monitoring of the bed, mattress, and accessories such as resident/caregiver assist items should be ongoing.

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References

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