Use of Bed Rails in Nursing Homes

The Centers for Medicare and Medicaid Services (CMS) include specific requirements for all nursing home providers to utilize bed rails on resident beds. This resource document is provided to assist members with the steps for the use of bed rails to ensure compliance is maintained to reduce the risk of entrapment for residents.

Regulations Pertaining to Bed Rails

F700 requires that prior to using bed rails on any resident's bed, alternatives must be attempted to determine if measures other than the use of bed rail can assist with the identified need. If alternatives cannot meet the identified goal, then the resident must be assessed for the risk of entrapment, risks and benefits must be reviewed with the resident or their responsible party as appropriate, and an informed consent must be obtained. In addition, the nursing home must ensure that the bed used is appropriate for the resident's size and weight and that all manufacturers' recommendations and specifications are followed when installing and maintaining bed rails.

F909 requires that all bed frames, mattresses, and bed rails are part of a regular maintenance program to identify areas of possible entrapment. When bed rails are used, they must be compatible with the bed frame used.

Bed Rails are defined in F700 as adjustable metal or rigid plastic bars that attach to the bed which are available in a variety of types, shapes, and sizes. Examples of bed rails include but are not limited to side rails, bedside rails, safety rails, grab bars, and assist bars.

Procedures for Bed Rail Use

If a resident requests or is identified that bed rails may be important for a specific individualized need, the nursing home must first attempt alternatives to help address the need. For example, if a resident expresses that they would like to maintain independent bed mobility and feel they are unable to do so without the use of a rail. LeadingAge and Pathway Health have template policies for Bed Rail Use and Bed Inspections.

Alternatives

The U.S. Food & Drug Administration (FDA) Recommendations for Consumers and Caregivers about Adult Portable Bed Rails includes ideas for alternative measures such as:

- Roll guards
- Foam bumpers
- Lowering the bed as near to the floor as possible
- Use of a concave mattress that can help reduce rolling off the bed

- Use of a bed trapeze to help reposition while in bed and to get in and out of bed

Physical and/or occupational therapy consultation is not listed in the FDA document as an alternative option. However, consultation with therapy can provide an interdisciplinary approach to ensuring the safest option for the resident.

Resident Assessment

If alternative measures failed to meet the resident's desired need, the nursing home must conduct a resident assessment to determine if bed rails are appropriate to be used. The FDA notes that older adults may have pre-existing conditions or use medications that increase the risk for entrapment such as confusion, restlessness, lack of muscle control.

According to the Clinical Guidance for the Assessment and Implementation of Bed Rails in Hospitals, Long Term Care Facilities and Home Care Settings document developed by the Hospital Bed Safety Workgroup the following should be considered when conducting an individualized resident assessment.

- Medical diagnosis, conditions, symptoms, and/or behavioral symptoms, noting that certain medical conditions, symptoms and behaviors may increase the risk of entrapment. Consider conditions that cause the resident to move around in the bed involuntarily or uncontrolled. If a resident has any of these conditions, bed rails are likely not indicated as the safest option.
- Sleep habits such as concerns with insomnia or sleep apnea.
- Medications such as the use of psychotropic, opioid, or others that may alter the resident's level of consciousness.
- Acute medical or surgical interventions that may limit the resident's mobility, cause confusion, or increase the resident's risk of falling.
- Existence of delirium and cognition as this may increase the resident's risk for falling and entrapment.
- Ability to toilet self safely as the need for assistance with mobility could enhance the resident's fall risk.
- Communication as difficulty communicating needs could reduce the resident's safety in bed.
- Mobility (in and out of bed) as residents who are immobile will not likely need the use of bed rails.
- Fall risk as residents with a higher fall risk are more likely to be entrapped in the bed rail.

A resident at a low risk for injury related to bed rail use include:

- Transfers safely to and from the bed to a wheelchair (or other location) without assistance.
- Ambulates without assistance to and from the toilet without falling.
- Has not fallen or is unlikely to fall out of bed.
- Uses the call system appropriately.

Residents at high risk for injury related to the use of bed rails include:

- The inability to transfer safely to and from the bed to a wheelchair (or other location).
- 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 the likelihood this will occur.
- Inconsistent in notifying staff of needs or unable to access/use the call the system.

LeadingAge and Pathway Health developed a resource for members – Bed Rail Assessment that can be used to complete the assessment and determine if a resident is appropriate for bed rail use.

Risks vs. Benefits

Residents (or representatives) who use a bed rail must be notified of the risks and benefits of the use of the rail.

Potential benefits include:

- Reminds residents not to get out of bed when medically contraindicated and/or medical equipment is attached.
- Defines the edge of the bed.
- Helps to protect the resident from falling out of the bed during transport.
- Assists the resident in moving (both within the bed and getting in/out of bed).
- Ease of access to bed controls.
- Provides a feeling of comfort and security.

Potential risks include:

- Strangling, suffocation, serious body injury, or death when the resident or parts of their bodies are caught between the rails, the openings of the rails, or between the rail and the mattress.
- Impedes the resident from safely getting out of bed (whether or not they are care planned to do so).

- Residents may crawl over the rails and fall from a greater height increasing the risk for serious injury.
- Residents may attempt to get out of bed over the foot board.
- May confine the resident to their bed.
- May create a barrier to performing routine activities such as going to the bathroom.
- Can create negative psychological effects such as an undignified image, altered self-esteem, contribute to isolation, and lead to incontinence.
- Potential risks can be exacerbated by improper matching of the bed rail to the bed frame, improper installation, and objects or supports that remain when the bed rail is removed.

Informed Consent

When appropriate alternatives have been attempted and do not meet the need of the resident, informed consent must be obtained prior to installing a bed rail. Informed consent must include:

- What alternatives were attempted and failed.
- The assessed medical need that will be addressed by the use of the bed rail.
- The benefits the resident may have from the use of the bed rail and the likelihood of these benefits.
- The risks the resident may have and how these risks will be mitigated.

Informed consent must be obtained from the resident or responsible party voluntarily and free from coercion.

LeadingAge and Pathway Health developed a Bed Rail Consent Form for members to use if desired.

Installation and Maintenance of Bed Rails

When all of the above elements are completed and bed rails are applied, the nursing home shall ensure that the bed and bed rails are safe to be installed and reduce the risk of entrapment. These measures include the following.

- Ensure the bed rails, mattress and bed frames are compatible according to manufacturer's recommendations.
- Confirm that the bed rails to be installed are appropriate for the size and weight of the resident using the bed.
- Install the rails using the manufacturer's instructions and specifications to ensure a proper fit.

- Inspect and regularly check the mattress and bed rails for possible entrapment. Regardless of the mattress dimensions, the bed frame, rail and mattress should leave no gap wide enough to entrap a resident's head or body. Gaps can be created by movement or compression of the mattress such as by the resident's weight, movement, bed position, use of a specialty mattress such as an air mattress or mattress pad. Bed rails must be regularly checked to ensure they remain correctly installed as they may shift or loosen over time.

In addition, nursing homes should assess each bed periodically for the seven zones of entrapment. A bed rail entrapment zone measuring tool (such as this one from Direct Supply) can be used to assist with measuring the zones and ensuring the safety of residents. The potential zones of entrapment include:

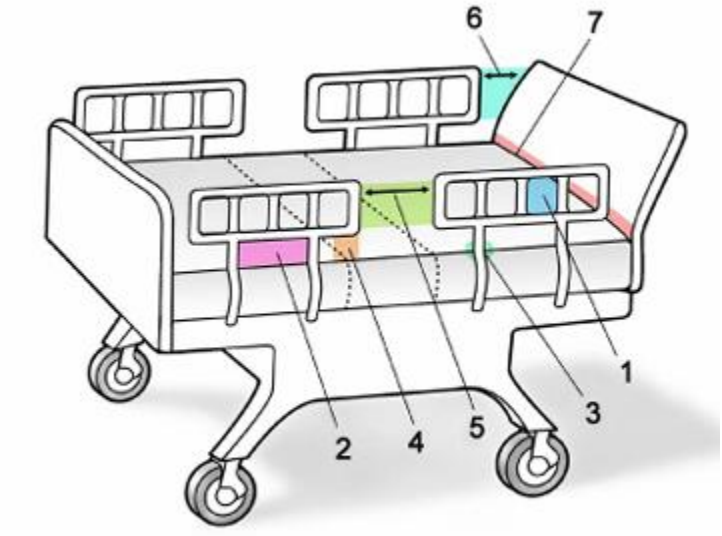
- Zone 1 – within the rail. This includes any space within the perimeter of the rail. Openings should be small enough to prevent the resident's head from entering and should be less than 4 ¾ inches which represents the head breadth.
- Zone 2 – under the rail, between the rail supports or next to a single rail support. This space is the gap under the rail between a mattress compressed by the weight of a person's head and the bottom edge of the rail at the location between the rail supports or next to a single rail support. Factors to consider are the mattress compressibility which may change over time due to wear, the lateral shift of the mattress or rail, and any degree of play from loosened rails or rail supports. A restless resident may enlarge the space by compressing the mattress beyond the specified dimensional limit. Preventing the head from entering under the rail would most likely prevent neck entrapment in this zone. The FDA recommends that this space be small enough to prevent head entrapment (or less than 4 ¾ inches) with consideration of removing the mattress during testing.
- Zone 3 – between the rail and the mattress. This space is between the inside surface of the rail and the mattress compressed by the weight of a person's head. The space should be small enough to prevent head entrapment when taking into account mattress compressibility, lateral shifts of the mattress or rail, and degree of play from loosened rails. The FDA recommended a dimensional limit of less than 4 ¾ inches between the inside surface and the compressed mattress.
- Zone 4 – under the rail, at the ends of the rail. This is the gap that forms between the compressed mattress and the lowermost portion of the rail at the end. Factors that may increase the gap size are mattress compressibility, lateral shift of the mattress or rail, and degree of play from loosened rails. This space poses a risk for entrapment of a resident's neck and may increase, decrease, or become less accessible or disappear entirely based on the rail height or raised head/foot

sections of the bed. The recommendations are that this gap be less than 2 3/8 inches (the average size a person's neck) measured between the mattress support platform and the lowest portion of the rail.

Note: Zones 1-4 have statistically been reported as the highest incidence of entrapment. The FDA continues to have concerns about entrapment in Zones 5, 6 and 7 and encourages any providers with incidents of entrapment to report the circumstances. The guidance for Zones 5-7 do not include specific measurements for guidance.

- Zone 5 – between split bed rails (note if only one rail is used this will not be applicable). This zone occurs when split rails are used on the same side of the bed and may present risk of other neck or chest entrapment if the resident attempts to, or accidentally exits the bed at this location.
- Zone 6 – between the end of the rail and side edge of head and/or foot board. This is the space between the end of the rail and the edge of the headboard or footboard. This space may present a risk of either neck or chest entrapment and may change based on raising or lowering the head/foot sections of the bed.
- Zone 7 – between the head or foot board and the mattress end. This is the space between the inside surface of the head/food board and the end of the mattress and may present a risk of head entrapment when taking into account the mattress compressibility, shifts in the mattress, and degree of play from loosened head or foot boards.

You can view the zones on this picture from the FDA's Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment document.



Note that Zone 7 should be measured regardless of a rail placement as residents can become entrapped between an ill-fitted mattress and head/foot board.

If a zone does not pass inspection/measuring, the nursing home must take immediate steps to correct the deficiency such as removing the bed from inventory until repaired, purchasing/using a new mattress, rail or head/foot board. Another inspection and measurement should be completed periodically and whenever a mattress is changed.

It is likely best practice to identify beds by a tracking system (such as bed 1, mattress 1 and so on) to determine if the same mattress is being used with the same bed frame. LeadingAge and Pathway Health developed a couple tools that may be useful to document inspections. The Bed Inspection Audit identifies the bed and whether it passed the inspection when conducted based on zones. The Bed Inventory includes the beds located in the building along with manufacturer and serial numbers.

Ongoing Evaluation

Ongoing monitoring and supervision of residents with bed rails is crucial to maintaining compliance. Periodically (such as quarterly with MDS Completion, care plan review and care conferences) review the resident's need for bed rails, assessment of the resident for safe bed rail use, and risks vs benefits of the use. Resident's condition may change over time and lessen the need for bed rails while increasing the risk of potential injury to the resident. For example, a resident who was once ambulatory may become dependent on staff for bed mobility and the use of a bed rail for the resident to independently complete bed mobility is no longer necessary.

Helpful Tips

- Applying bed rails to residents' beds should not be a standard practice. They should be applied only when necessary, based on individual resident circumstances.
- If you receive a deficiency for not attempting alternative options before applying bed rails, not completing bed rail assessments, or completing informed consents do not remove all resident's bed rails without completing the steps required in the regulation as this could also result in an immediate jeopardy deficiency. Complete the steps that were identified in the deficiency on all residents and then determine those necessary for removal of the bed rail.