

### Introduction

Patients who have problems with memory, sleeping, incontinence, pain, uncontrolled body movement, or who get out of bed and walk unsafely without assistance, must be carefully assessed for the best ways to keep them from harm, such as falling. Assessment by the patient's health care team will help to determine how best to keep the patient safe. Historically, physical restraints (such as vests, ankle or wrist restraints) were used to try to keep patients safe in health care facilities. In recent years, the health care community has recognized that physically restraining patients can be dangerous. Although not indicated for this use, bed rails are sometimes used as restraints.

<http://www.fda.gov/RegulatoryInformation/Guidances/ucm072-662.htm#10>

### Advantages

- Aiding in turning and repositioning within the bed.
- Providing a hand-hold for getting into or out of bed.
- Providing a feeling of comfort and security.
- Reducing the risk of patients falling out of bed when being transported.
- Providing easy access to bed controls and personal care items.

### Disadvantages

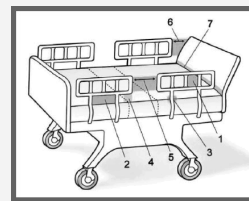
- Strangling, suffocating, bodily injury or death when patients or part of their body are caught between rails or between the bed rails and mattress.
- More serious injuries from falls when patients climb over rails.
- Skin bruising, cuts, and scrapes.
- Inducing agitated behavior when bed rails are used as a restraint.
- Feeling isolated or unnecessarily restricted.
- Preventing patients, who are able to get out of bed, from performing routine activities such as going to the bathroom or retrieving something from a closet.

### Avoiding Bed Rail Use

The FDA says that most patients can be kept in bed without bed rails and asks healthcare workers to consider the following:

- Use beds that can be raised and lowered close to the floor to accommodate both patient and healthcare worker needs
- Keep the bed in the lowest position with wheels locked
- When the patient is at risk of falling out of bed, place mats next to the bed, as long as this does not create a greater risk of accident
- Use transfer or mobility aids
- Monitor patients frequently
- Anticipate the reasons patients get out of bed such as hunger, thirst, going to the bathroom, restlessness and pain; meet these needs by offering food and fluids, scheduling ample toileting, and providing calming interventions and pain relief.

### Bed Rail Entrapment Zones



- ZONE 1: Within the rail
- ZONE 2: Between the top of the compressed mattress and the bottom of the rail, between rails ports
- ZONE 3: Between the rail and the mattress
- ZONE 4: Between the top of the compressed mattress and the bottom of the rail, at the end of the rails
- ZONE 5: Between the split bed rails
- ZONE 6: Between the end of the rail and the side of the head or foot board
- ZONE 7: Between the head or footboard and the mattress end

### FDA Potential Zones of Entrapment

Three key body parts at risk for life-threatening entrapment in the seven zones of a hospital bed system.

#### Head

#### Neck

#### Chest

**Zone 1** - Within the Rail

**Zone 2** - Under the Rail, Between the Rail Supports or Next to a Single Rail Support

**Zone 3** - Between the Rail & the Mattress

**Zone 4** - Under the Rail at the Ends of the Rail

**Zone 5** - Between Split Bed Rails

**Zone 6** - Between the End of the Rail & the Side Edge of the Head or Foot Board

**Zone 7** - Between the Head or Foot Board & the End of the Mattress

Source: Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment - Guidance for Industry and FDA Staff