

Understanding and Preventing Bed Rail Entrapment

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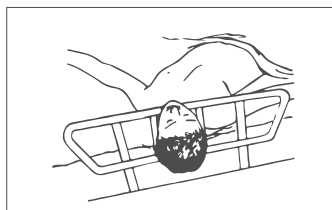
Entrapment is defined as an occurrence involving a patient who is caught, trapped, or entangled in a hospital bed system.¹ Since 1997, the U.S. Food and Drug Administration (FDA) has published and updated its guidance to reduce entrapment injuries and death, identifying seven common zones of entrapment risk (see illustrations).²

Identifying at-risk patients

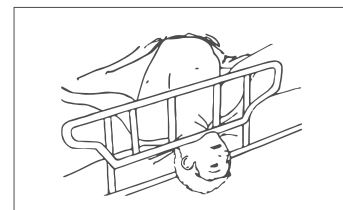
Patients are at the highest risk of entrapment while attempting to exit their beds—especially those who are frail, elderly, or disoriented. Pain, uncontrolled movements, hypoxia, or absence of toileting aid can also increase risk. Ongoing assessment is recommended to reduce a patient's risk of entrapment. This may include understanding the patient's sleep habits, bedtime routines, and mobility challenges.³

Promoting bed safety

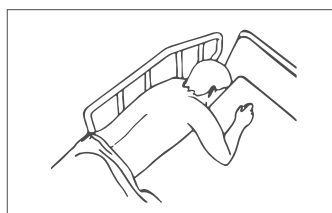
Caregivers and facilities must promote a culture of safety, including regular inspections of bed frames, mattresses, and accessories to ensure proper function. Medical bed manufacturers follow international standards for design and testing to mitigate entrapment risk—the IEC 60601-2-52 standards were revised in 2015.⁴



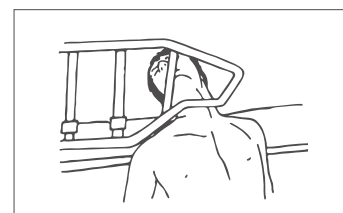
Zone 1:
Within the rail



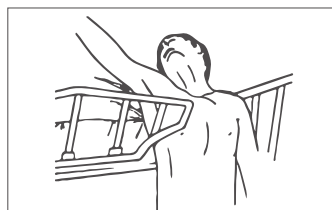
Zone 2:
Under the rail, between the rail supports, or next to a single rail support



Zone 3:
Between the rail and the mattress



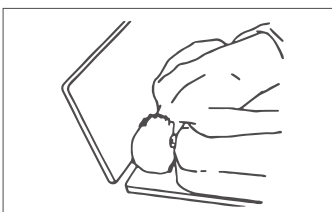
Zone 4:
Under the rail, at the ends of the rail



Zone 5:
Between split bed rails



Zone 6:
Between the end of the rail and the side edge of the head or footboard



Zone 7:
Between the head or footboard and the mattress end

References:

1. Pennsylvania Patient Safety Authority. (2006). Patient Safety Advisory. I'm stuck and I can't get out! Hospital bed entrapment.
2. Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment. (2006, Mar. 10). U.S. Health and Human Services Food and Drug Administration Center for Devices and Radiological Health. Retrieved from www.fda.gov/downloads/medicaldevices/deviceregulationandguidance/guidancedocuments/ucm072729.pdf
3. Thibault, E. Entrapment: A Preventable Injury. (2016). Xtrawise 18.4. Retrieved from sizewise.com/Sizewise/files/c4/c4c74061-fe6a-4c15-9c46-fa652f908cef.pdf
4. International Electrotechnical Commission (2015). IEC Standard #60601-2-52. Retrieved from www.techstreet.com/standards/iec-60601-2-52-ed-1-1-b-2015?sid=goog&gclid=CPmYwqruntACFRCRaQod_r8wEog&product_id=1893664

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