



## **Decreasing Use of Siderails**

**Problem:** Intuitively, siderails should prevent falls and enhance patient safety. However, siderails have become a topic of controversy in recent literature as more and more patient deaths are attributed to entrapment between the siderail and the mattress.<sup>1</sup>

**Evidence:** Serious injuries related to falls from bed occur as disoriented patients attempt to climb over the rails, and fall from a greater height than they would if the rails were not used at all.<sup>2</sup> The Hospital Bed Safety Workgroup<sup>3</sup> (HSBW) was organized in 1999 in response to a 1995 safety alert from the FDA regarding deaths by entrapment within the bedframe/mattress system. This Workgroup has proposed guidelines for maximum gaps in several areas of the bedframe/mattress system to prevent entrapment. As of the writing of this letter, the FDA is preparing to release a version of the HSBW recommendations in 2005 as FDA approved guidelines. The Workgroup notes that if siderails are not used, the risk of entrapment falls nearly to zero.

Siderails have been shown to increase the risk of incurring serious injury from falls out of bed. In the confused ambulatory patient, restraint use was associated with increased falls, as well as recurrent fall risk.<sup>4</sup> Since 10% - 25% of all falls in nursing homes result in hospital admission and/or fractures<sup>5</sup>, reducing the number of falls is key to reducing patient injury and liability.

Three studies looked at the differences in fall incidence between increased use of siderails, and decreased use. Their findings are:

- a) The incidence of falls from bed with bedrails elevated was equal to or higher than when bedrails were not elevated. Patients in a “non-rational” state at the time of falling were significantly more likely to have fallen with bedrails elevated.<sup>6</sup>
- b) Reducing the use of siderails did not increase the number of falls from bed, and resulted in significantly fewer serious injuries.<sup>7</sup>
- c) Increased use of siderails did not result in decreased falls, recurrent falls, or serious injuries.<sup>8</sup>

### **Conclusion:**

It is not prudent to mandate the use of siderails for all patients. Individualized assessment of the patient’s physical and mental status and of their risk for falling, and modification of that individual’s environment must be done to prevent falls or entrapment.<sup>4,5</sup> When individualized patient assessment is done, and environmental changes made, patient injury decreases.<sup>9</sup> More judicious use of bedrails can prevent many injuries and deaths.<sup>7,10</sup>

Recommendation: In light of mounting evidence that comprehensive use of siderails increases the incidence of patient entrapment, injury, and death as discussed above, federal and state laws have been enacted, and some health care facilities have instituted their own policies, regarding the need for individual assessment of the physical and mental status of each patient before siderails are used. Span-America recognizes that the use of rails of any length is a matter addressed by these laws. It is the responsibility of the facility to be in compliance with these laws, and to make the determination on the use of siderails on an individual patient basis.

As manufacturers, we are concerned about the safe usage of our products, and the safety of those who use our mattresses. We recommend the use of siderails with the PressureGuard mattresses when an individual assessment of the client leads the clinician to a recommendation that the siderail will be of benefit.

The Geo-Mattress with Wings is one model of a group of mattresses commonly referred to as “perimeter” mattresses that were introduced to the market several years ago. To decrease the incidence of falls in long-term-care settings. The success and acceptance of the design has encouraged many manufacturers to add perimeter mattresses to their product offerings.

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1. Parker K, Miles S. Deaths caused by bedrails. J Am Geriatr Soc. 1998 Jun;46(6):794.
2. O’Keeffe S. Down with bedrails? The Lancet Jan 31, 2004;363:343.
3. <http://www.fda.gov/cdrh/beds/>
4. Capezuti E, Evans L, Strumpf N, Maislin G. Physical restraint use and falls in nursing home residents. J Am Geriatr Soc. 1996 Jun;44(6):627-33.
5. Vu MQ, Weintraub N, Rubenstein LZ. Falls in the nursing home: are they preventable? J Am Med Dir Assoc. 2004 Nov-Dec;5(6):401-6.
6. van Leeuwen M, Bennett L, West S, Wiles V, Grasso J. Patient falls from bed and the role of bedrails in the acute care setting. Aust J Adv Nurse. 2001 Dec;19(2):8-13.
7. Hangar HC, Ball MC, Wood LA. An analysis of falls in the hospital: can we do without bedrails? J Am Geriatr Soc. 1999 May;47(5):529-31.
8. Capezuti E, Maislin G, Strumpf N, Evans LK. Side rail use and bed-related fall outcomes among nursing home residents. J Am Geriatr Soc. 2002 Jan;50(1):90-6.
9. Hoffman SB, Powell-Cope G, Rathvon L, et al. BedSAFE: A bed safety project for frail older adults. J Gerontol Nurs. 2003 Nov;29(11):34-42.
10. Parker K, Miles SH. Deaths caused by bedrails. J Am Geriatr Soc 1997;45:797-802.