Bedrails rise again?

Falls around the bed are common in hospitals and can result in serious injury to patients and significant costs to hospitals. Some result from rolling out of bed accidentally, others from falling while or just after getting out of bed. Bedrails will prevent someone falling accidentally from bed. Bedrails will not reliably prevent someone from getting out of bed and are not designed to do so. A substantial number of patients prefer to have bedrails raised in hospital. Entrapment in spaces between or within rails or between rails and head-or footboards or mattresses is rare and can be fatal, but such accidents are mainly preventable if bed systems conform to modern dimensional guidance. Decisions regarding the use or otherwise of bedrails should be made on the basis of an individual assessment of the potential risks and benefits.

These, I suggest, are not insubstantial points of agreement among the participants (the author included) in the sometimes contentious debate on bedrail use. Is there anything left to argue about then? In this issue Hignett et al., in the largest UK study of bedrail use to date, found that bedrails were raised for 52% of patients [1] compared with 26% in a similar 2006 survey [2] and 8% in a single hospital British study in 1995 [3], a degree of change that, notwithstanding the variability between institutions, seems likely to reflect a real and substantial increase over time in bedrail use. The important issue, however, is not the frequency but the appropriateness and safety of bedrail use.

Changes in bed system design

Increased use of electric profiling (EP) beds—rare in some earlier studies where hydraulic beds predominated [3, 4]—has clearly contributed to increased bedrail use. This is unsurprising: some of the possible patient positions with such beds, and the frequent associated use of alternating pressure mattresses, may result in the patient feeling and being less stable; the fact that rails are usually an integral part of such bed systems may also contribute to their use [5].

Bed systems built to modern specifications, including most current EP beds, should greatly reduce the risk of entrapment. However, there is no room for complacency. In the USA, where voluntary dimensional guidelines to minimise bedrail entrapment were first issued in 2006, there were 27 deaths in 2011 alone [6] and failures of compliance with guidelines have been recorded [7]. The weakest link in the bed system is often the mattress: mattresses may shrink with time, and—a point unsurprisingly emphasised by bed manufacturers—the mattresses actually used with beds are not always those specific to the particular bed [8]. Also, air mattresses are excluded from the dimensional guidelines, because of technical difficulties with measuring dimensional gaps, even though their high compressibility may increase risks [9].

When is bedrail use appropriate?

The risk matrix tool developed by the National Patient Safety Agency (Table 1), while admittedly over-simple, is a useful starting point and highlights the important interaction between patient mobility and mental status in determining the potential risks and benefits of bedrail use [10]. It is hard to get excited about the use of rails at the request or with the wholehearted agreement of the alert and oriented patient—provided of course he or she agrees and proves willing to remain in bed even if nature calls and the nurse’s response to the call bell is not speedy enough—and it is difficult to disagree with Healey et al. [2] that use of bedrails in these circumstances is not restraint.

The main concerns with bedrail use relate to their frequent use in those with ‘confusion’. As well as being at increased risk for falls, such patients are the most likely to try to climb over rails, to attempt an unorthodox and potentially hazardous exit at the foot of the bed (a previous report from the Loughborough group having shown how the location of falls from beds with elevated rails were clustered at the foot of the bed [11]) or, worst of all, to try to get between or under the rails.

Table 1. Risk matrix tool for bedrail use

<table>
<thead>
<tr>
<th>Patient mental state</th>
<th>Patient mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very immobile—bedfast or hoist dependent</td>
<td>Neither independent nor immobile</td>
</tr>
<tr>
<td>Oriented and alert</td>
<td>Can mobilise without help from staff</td>
</tr>
<tr>
<td>Drowsy</td>
<td>Bedrails recommended</td>
</tr>
<tr>
<td>Confused and disoriented</td>
<td>Use bedrails with care</td>
</tr>
<tr>
<td>Unconscious</td>
<td>Bedrails NOT recommended</td>
</tr>
</tbody>
</table>

Adapted from National Patient Safety Agency [10].

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The most alarming finding of the current study is that the recommendation to avoid bedrails in confused patients, other than, with great caution, the very immobile, is not being complied with [5]. Bedrails were raised for 75% of those described as confused (compared with 36% of the non-confused). As in previous studies [2–4], ‘to prevent falls’ was the most common reason given by nurses for bedrail use. However, additional reasons were ‘to prevent the patient from mobilising without assistance’ in 25% and ‘the patient is confused and tends to wander’ in 20% of those with confusion and raised bedrails. These responses would make no sense if the patients were very immobile, and indicate an intention to restrain in at least 45% of bedrails for confused patients (26% of all bedrail use).

Improving education and guidance regarding bedrail use

Nurses’ perceptions of cognition and mobility are important determinants of their decision making, and it is understandable that large-scale studies have accepted or used imprecise terms such as ‘confusion’. However, this is insufficient for any accurate judgement as to whether bedrail use is appropriate and for providing helpful guidance to staff. For example, confusion in acute hospitals is often due to delirium, and it seems likely that the agitated, hyperactive patient will be at greater risk from bedrail-associated injuries than the drowsy, hypoactive patient [12].

Similarly, using nurses’ open-ended reported intentions for using bedrails as a guide to the appropriateness of their use also seems inadequate: ‘to prevent falls’ does not distinguish between preventing accidental falls from bed and preventing people from getting out of bed; undue reliance on reported intentions might even encourage a generic rationale of ‘to prevent the patient from falling accidentally from bed’ to prevent criticism.

Preventing falls around the bed is important but will never be fully achievable. This study suggests the need for further efforts to educate staff that raising bedrails is an ineffective and unsafe approach to preventing people from getting out of bed and for more objective standards to guide use of bedrails.

Conflicts of interest

None declared.

Shaun T. O’Keeffe*
Department of Geriatric Medicine, Unit 4, Galway University Hospitals, Merlin Park University Hospital, Galway, Ireland
Tel: (+353) 91 2694533; Fax: (+353) 91 770515.
Email: sokanc@iolfree.ie

*To whom correspondence should be addressed

References