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The effect of bedrails on falls and injury

SIR—In their helpful review of the literature on bedrails, Healey and colleagues [1] suggest that none of the retrospective surveys of falls from bed showed that injury was more likely in falls with bedrails. While accepting the intrinsic deficits of such surveys, it should be noted that our study did show such an effect [2]. I also find the data reported from the National Reporting and Learning System less reassuring than the authors: while minor head injuries were convincingly increased with falls from beds without rails, both of the subdural haematomas with falls from bed occurred with bedrails raised, and in the random selection of falls analysed, moderate or severe harm only occurred with bedrails raised [3].

Given that there is indeed a paucity of high-quality data, a report from the National Patient Safety Agency, reasonably, argued that even thinking about rolling back and forth in a bed with and without rails should convince the sceptic that bedrails prevent falls in these circumstances [4]. A similar experiment is to imagine that your bladder is full (the commonest reason for trying to get out of bed) and the lights are out and that you try to get out of bed with or without rails. There can be little doubt that the former manoeuvre is more hazardous, even if a feet-first approach is taken. Indeed, in a study using an anthropomorphic test dummy, the likelihood of severe head injury, using the injury criteria used in the car industry, was greatest during feet-first falls, probably due to deflection caused by rebound off the impacted surface, ranging from 25% on falling from the highest bed height to 40% with the further height added by use of bedrails; use of a floor mat decreased the head injury risk to <1% even for the bedrail height [5].

The average of 20 deaths per year from bedrail entrapment in all healthcare settings in the United States (population roughly 300 million) and of 3 deaths on average in the same settings in Britain (population 60 million) are only the reported deaths. The US Food and Drug Administration (FDA) certainly acknowledges that underreporting of such deaths is likely. A press investigation of 5 deaths and 14 injuries attributed to bedrails in a single year in nursing homes in Michigan (population 10 million; nursing home population 50,000) found that only one incident had been reported to the FDA [6]. While adherence to the bed dimensions endorsed by the FDA and by the Medicine and Healthcare Products Regulatory Authority should minimise entrapment risks, some have argued that the standards are not rigorous enough [7]. Moreover, the FDA recommends procedures for measuring and assessing gaps in hospital beds using a now commercially available cone and cylinder tool, applied using a standard force to mimic the effect of the human body [8]. Putting beds at the lowest possible height and avoiding bedrails for those who conceivably could or would try to exit the bed or manoeuvre their way into a dangerous position will be much easier.

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Reply

SIR—We are grateful to Dr O'Keeffe for his comments on our literature review [1] and for his important contribution