



## KEY POINT SUMMARY

### OBJECTIVES

The aim of this study was to ascertain the average height of occupied patient beds in a general medical ward and to investigate the relationship between staff working height for patient beds, time, and whether the patient was on fall precaution.

## Heights of Occupied Patient Beds: A Possible Risk Factor for Inpatient Falls

Tzeng, H. M., Yin, C. Y.  
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### Key Concepts/Context

The height of occupied patient beds can be an overlooked contributor to inpatient falls. Hospital bed frames are still eight–12 inches higher than those of home bedframes. The difference in heights may contribute to inpatient falls related to getting in and out of bed and to the severity of fall-related injuries. Better physical design of hospital equipment such as patient beds may reduce patient falls and injuries.

### Methods

This study was conducted in a 32-bed, acute medical ward of a Michigan medical center. One researcher collected all of the inpatient falls data using the same metric for all the measurements. Univariate analyses were performed.

### Findings

The average staff working-height measurement taken at the weekend was significantly higher than that taken on weekdays. The average bed height of patient beds that were on fall precaution was significantly higher than those that were not on fall precaution. Statistically significant difference was found on the staff working-height measurements across different times; the average height during the weekday afternoon time points was the highest. No difference was found between the groups on fall precaution.

### Limitations

The small sample size limits the generalizability of the outcomes. Further, the Hawthorne effect may have influenced the height at which staff positioned and left beds.



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## Design Implications

The Joint Commission (2005) suggested several environmental strategies related to bed height, mattresses, and support devices, including: (1) the use of adjustable-height, high-low beds or fixed low-deck-height beds where applicable; (2) when feasible, keeping beds in their lowest position and providing mattresses firm enough to support safe bed transfers; and (3) providing a bed footboard to help patients as they transfer in and out of bed. Rather than using bedrails, JCAHO recommends that hospitals use adjustable beds that can be raised and lowered to enable patients to easily get in and out of beds and for staff to assist in this process. Regarding the styles of patient beds selected, the control panel for adjusting the overall height of the bed frame should be reachable by a patient who is lying on the bed. Build and maintain a facility and institute policies to provide care under safe conditions. Use low beds (about six inches from the floor to the mattress surface) with patients who are at high risk for falls, particularly geriatric patients in areas such as transitional care units. Consider specifying hospital beds that go into a “chair” position are available, allowing patients to be passively moved into a sitting position. To prevent fall-related injuries effectively, the bed height (frame and mattress) should be no higher than the average knee height for a female (19.5 inches).