

Addressing inpatient crowding by smoothing occupancy at children's hospitals

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OBJECTIVE: To quantify the difference in weekday versus weekend occupancy, and the opportunity to smooth inpatient occupancy to reduce crowding at children's hospitals.

METHODS: Daily inpatient census data for 39 freestanding, tertiary-care children's hospitals were used to calculate occupancy and to model the impact of reducing variation in occupancy and the change in the number of patients, patient-days, and hospitals exposed to high occupancy pre- and post-smoothing. We also calculated the proportion of weekly admissions that would require different scheduling to achieve within-week smoothing.

RESULTS: Overall, hospitals' mean occupancy ranged from 70.9% to 108.1% on weekdays, and 65.7% to 94.9% on weekends. Weekday occupancy exceeded weekend occupancy with a median difference of 8.2% points. The mean post-smoothing reduction in weekly maximum occupancy across all hospitals was 6.6% points. Through smoothing, 39,607 patients from the 39 hospitals were removed from exposure to occupancy levels >95%. To achieve within-week smoothing, a median 2.6% of admissions would have to be scheduled on a different day of the week; this equates to a median of 7.4 patients per week (range: 2.3-14.4).

CONCLUSION: Hospitals do have substantial unused capacity, and smoothing occupancy over the course of a week could be a useful strategy that hospitals can use to reduce crowding and protect patients from crowded conditions.

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