

# Quantifying patient wake-up events on an otolaryngology inpatient floor

Maximilian Hemmrich MD, Samuel Auger MD, Elizabeth Blair MD, Louis Portugal MD,  
 Ramez Philips MD, Hassan Arshad MD, Nishant Agrawal MD

University of Chicago Medical Center, Department of Surgery, Section of Otolaryngology-Head&Neck Surgery

## BACKGROUND

- Sleep is vital for normal physiologic functioning including post-operative wound healing
- Poor sleep quality has been shown to impact post-operative pain, length of stay, insomnia, patients' emotional state, and quality of life<sup>1,2,3,4,5</sup>
- Patients admitted to the hospital after head & neck surgery frequently report poor sleep quality and duration in part due to frequent overnight awakenings

## PURPOSE

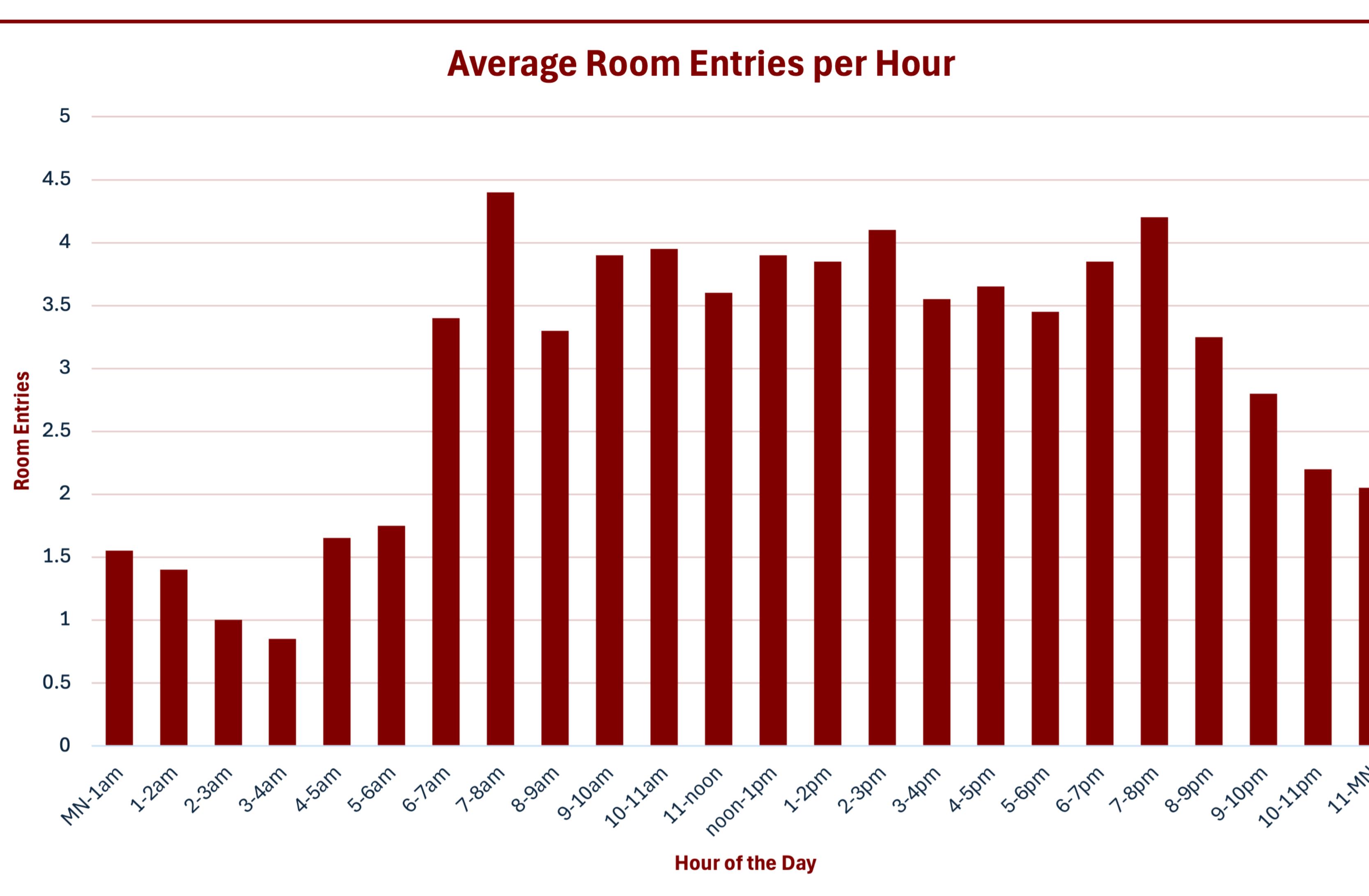
- Quantify the number of patient room entry events as a surrogate measure for patient awakenings in the post-operative setting

## METHODS

- GOJO Purell Smartlink sensor data for single-occupancy inpatient rooms largely used for otolaryngology patients was retrieved for 2-week period spanning from Sept 18, 2023 – Oct 1, 2023
- Timestamps of when a sensor detected a patient entering a room ("In event") were extracted
- Rooms only included in analysis if there were at least 20 In events ( $\geq 5^{\text{th}}$  percentile) per day to exclude rooms that were not occupied for most of the day

## RESULTS

- Occupied rooms on the inpatient floor had a median number of In events of 67.5 per day (interquartile range 53.0 to 87.0) or 2.8 events per hour
- 64% of In events occurred during the hours of 7am – 7pm
- Between the hours of 10pm and 6am, the average number of In events was 12.3 or 1.54 events per hour
- The highest average rate of In events was between 7am – 8am (4.4 per hour)
- The lowest average rate of In events was between 3am – 4am (0.86 per hour)



## DISCUSSION

- Post-operative head & neck surgery patients experience frequent awakenings in the hospital
- During the normal sleeping hours of 10pm – 6am, the average number of In events, many of which result in awakening of the patient, was 12.3 per night
- Frequent awakenings and fragmented sleep are associated with increased post-operative pain, length of stay, hypertension, hyperglycemia, and decreased patient satisfaction
- Efforts to reduce overnight vital checks or unnecessary medication administration could improve patients' sleep quality and improve these metrics
- Further studies are needed to directly assess impact of fragmented sleep in otolaryngology patients

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