Operating Room Utilization: Analysis of Nights and Weekends.

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Operating Room Utilization: Analysis of Nights and Weekends

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Introduction

With increasing public demand for efficiency and decreased costs, the operating room (OR) is coming under increased scrutiny.1 Despite the focus of improving utilization and productivity, many operating rooms have resisted change.2 At most hospitals, the OR suite is filled to capacity between approximately 7am and 3pm, followed by a necessary “wind-down” time which tends to accommodate the inherent unpredictability of operative times.3

Problem Statement

In patients requiring surgery, how has the operating room utilization during “off-peak” hours (weeknights: Monday, Tuesday, Wednesday, Thursday 5p–7a; weekend: Fri 5p – Mon 7am) changed since implementation of the Coordination of Care Improvement Project at Lehigh Valley Health Network?

Methods

A retrospective review of night and weekend operating room utilization at the Lehigh Valley Hospital, Cedar Crest (LVHCC) after the implementation of the new electronic health record system, EPIC. All operations were reviewed from August 2015 - January 2017; with patient information limited to age and gender.

• Inclusion criteria:
  – Any operation during “off-peak” hours

• Exclusion criteria:
  – All operations between 7am and 5pm, Monday through Friday
  – Any endoscopic procedures
  – Any operations not at LVHCC Main OR.

The months of February to July were excluded due to lack of pairing ability.

Statistical analysis was conducted using a paired t-test during “off-peak” weeknights and weekends.

Results

Among operations between Aug 2015 and January 2017, we reviewed a total of 59,052 hours during 24,658 operations (Table 1). Of those, 2,360 weekend cases were performed for a total of 4,281 hours of OR usage. Patient demographics were not appreciably different between periods (Table 2). During “off-peak” weeknights, 1,602 cases were performed during 3,014 hours of OR usage. Average night time OR utilization ranged from 5.22 to 11.66 hours. Comparison of weekend nights showed statistically significant increase in average cases per night (Table 3). No statistically significant increase in cases per month, hours per month, or minutes per case was seen. Analysis of weekend nights showed no significant differences between cases per month, cases per night, cases per day, or average minutes per case (Table 4).

Conclusion

Present analysis indicates a small but significant increase in operating room utilization during “off-peak” weeknights. Comparison of weekend operating room utilization showed largely unchanged OR utilization, further supporting the hypothesis that the Coordination of Care Improvement Project influenced physician utilization of “off-peak” OR availability; however, absolute causality has not been established. We propose further investigation of practice and specialty types, as well as OR staffing and costs, including OR and patient LOS information, for the described periods would be beneficial in determining whether there was a significant monetary effect on the efficacy of OR practices and patient outcomes.

References:


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