Estimating Obstetric Anesthesiology Workload: Number of Deliveries versus Workload Hours per Hour.
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Introduction

• Knowledge of the number of deliveries is utilized to estimate obstetric anesthesiologist workload on labor and delivery (1, 2).
• However, this number may not reflect true workload for ideal staff planning.
• The goal of this analysis was to assess if including estimates of procedure-related time commitments would better predict clinical workloads.

Methods

• We queried the electronic medical record data at our academic center for 12 consecutive months of maternal deliveries.
• Data extracted included delivery type, anesthetic/analgesic procedure and whether delivery occurred during weekday (Mon-Fri 7a-5p), weeknight (Mon-Fri 5p-7a) or weekend (Sat 7a-Sun 7a) shifts.
• To generate an hour to hour comparison of shifts of varying duration, deliveries were divided by the number of hours in each shift.
• To further refine for anesthesiologist workload, deliveries without an anesthetic or analgesic were removed to give Anesthetic Procedures per Hour.
• To factor in anesthesiology workload hours, delivery type was multiplied by an estimated total dedicated time associated with the anesthetic/analgesic procedure. We estimated 2 hours for cesarean delivery anesthetic and 30 minutes for labor epidural analgesia (Figure 1).

Results

• 4598 deliveries occurred in the 12 month study period, including 1707 during weekdays and 2891 during the weeknights and weekends (Figure 2a).
• 1564 anesthetic/analgesic procedures occurred during weekdays and 2557 anesthetic/analgesic procedures occurred during the weeknights and weekends (Figure 2c) including 773 cesarean deliveries during weekdays and 684 during weeknights and weekends.
• The number of anesthetic/analgesic procedures/hour was 0.60 during weekdays compared to 0.42 during weeknights and weekends.
• After accounting for the duration of each procedure, weekdays utilized 0.75 workload hours/hour versus 0.38 workload hours/hour on weeknights and weekends (Figure 2d).

Discussion

• Basing relative workload on delivery numbers alone suggests 59% less workload during the weekday compared to weekend shifts, whereas accounting for anesthetic/analgesic procedures per hour shows a 42% greater workload during the weekday shifts.
• Factoring in time of anesthetic/analgesic procedures resulted in a 99% greater workload on weekday shifts.
• This shows the importance of considering anesthetic/analgesic procedures and their relative duration to better plan optimal staffing on labor and delivery.

References