I Can’t Hear The Patient Desaturating. Induction Is Too Loud!
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BACKGROUND/PROBLEM
Noise has been described as one of the three pollutants in the operating room. Elevated noise levels in the operating room correlate with negative physiologic changes including patient anxiety, distraction, and increased anesthetic and opioid requirements. Furthermore, noise during the induction period may interfere with anesthesia providers’ ability to provide optimal levels of anesthetic care during this high-risk period.

GOALS AND OBJECTIVES
1) Ascertain baseline noise levels in the pediatric operating rooms
2) Ascertain number of conversations in the OR at the time of anesthesia induction
3) Institute an education tool to help us lower peri-/induction noise levels

METHODS AND APPROACH
• Measure noise level (average, max) at induction with decibel meter.
• Survey recording primary service, number/type of people in the operating room, number of separate conversations, other sources of noise, whether or not there was a statement of “quiet,” if the forced air warmer was used, use of a patient audio/visual device.

Operating Room Noise Survey
• Service Line (check all that apply)
  • ENT Ortho Neuro Urology
  • Gen-Surg Dental/OMFS Cardiac Other
• Induction (when facemask is applied or IV medication is administered)
  • Mask Intravenous Other
• Total number of people in the operating room: 
• Indicate if these additional people were present:
  – Parent: Yes / No
  – Child Life: Yes / No
  – Reps: Yes / No
  – Other (please specify) 
• Number of separate conversations:
• Number of people talking to the child:
• Equipment producing noise during induction? (circle yes or no)
• Audio devices: Yes / No Please specify 
• Operating room lights during induction:
  • On Off Dimmed
• Statement of “quiet” for the room prior to induction:
  • Y / N
• dB (from placement of facemask to 30s)
• Distressed Child Sounds (Crying ect) YES / NO
  – Peak
  – Mean

RESULTS
100 OR’s recorded and surveyed
• Maximum noise 93 dB
• Average noise: 67.22 dB
• 93% mask induction
• OR lights on: 89%
• Average number of people in OR: 7.12
• Separate conversations: 1.831
• Statement of silence: ONE

How Low Can We Go?
According to the WHO, noise levels in the OR should be <30 dB.
At UNC, we average 90-100 dB!!!

Which is the same noise level as a train passing by.
Increased noise levels lead to tachycardia, HTN, anxiety, and even surgical site infection!

CONCLUSIONS / Next Steps
Pediatric induction is noisy. Although the peri-induction noise level average of 67.22 dB falls below the NIOSH/CDC guidelines of 85 dB, it exceeds the WHO guidelines of 30 dB. The average maximum noise level measured of 93 dB exceeds the recommendation levels of both organizations. We have instituted an educational tool and posted signs on all our pediatric OR doors. We have included all our OR staff in helping us in limiting conversations, limiting extraneous people in the OR during induction and a “quiet” sign to be raised at induction. We are in the process of collecting our post-intervention data and hope to expand this to emergence as well.


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