

Comparison of induction and emergence times by anesthesia provider

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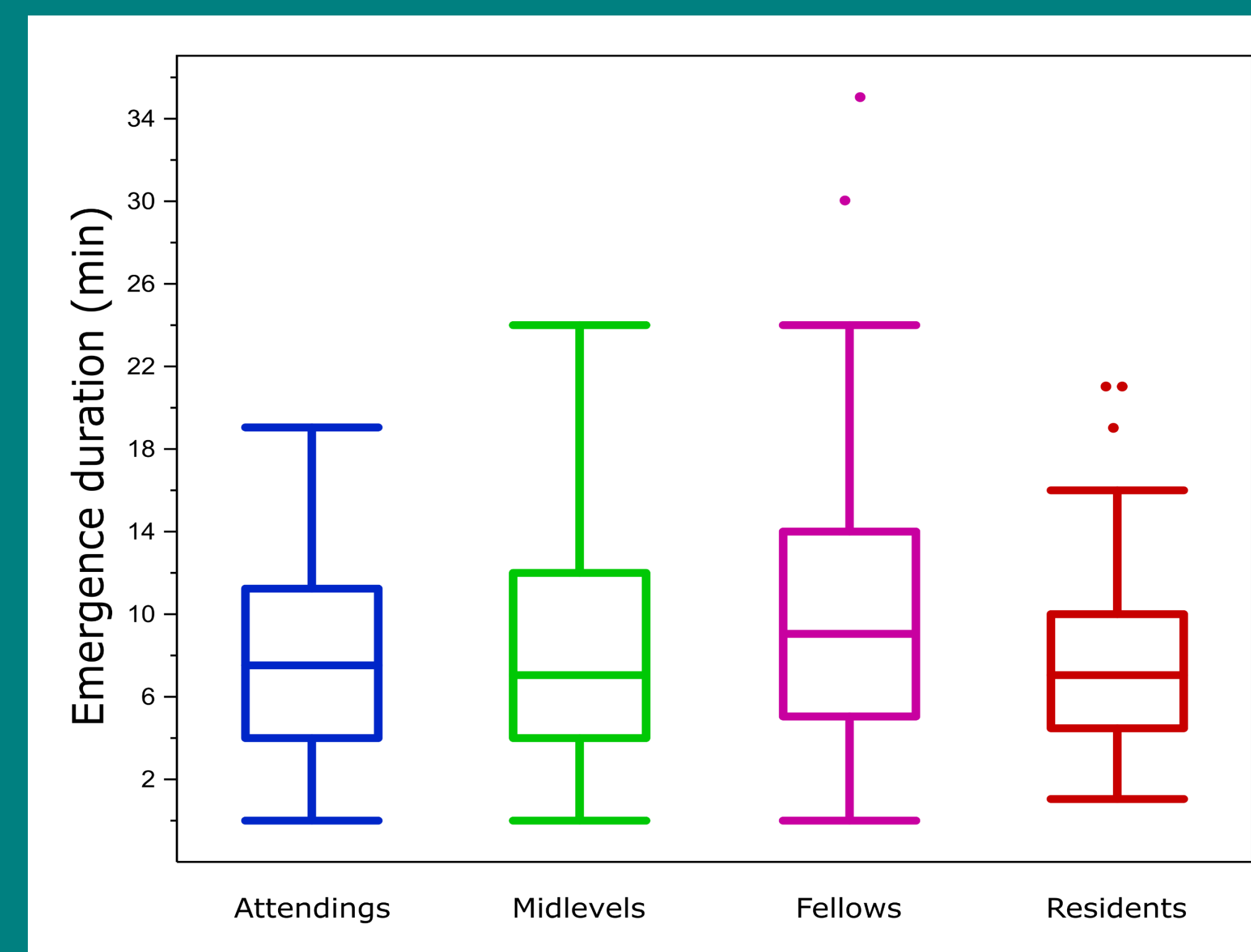
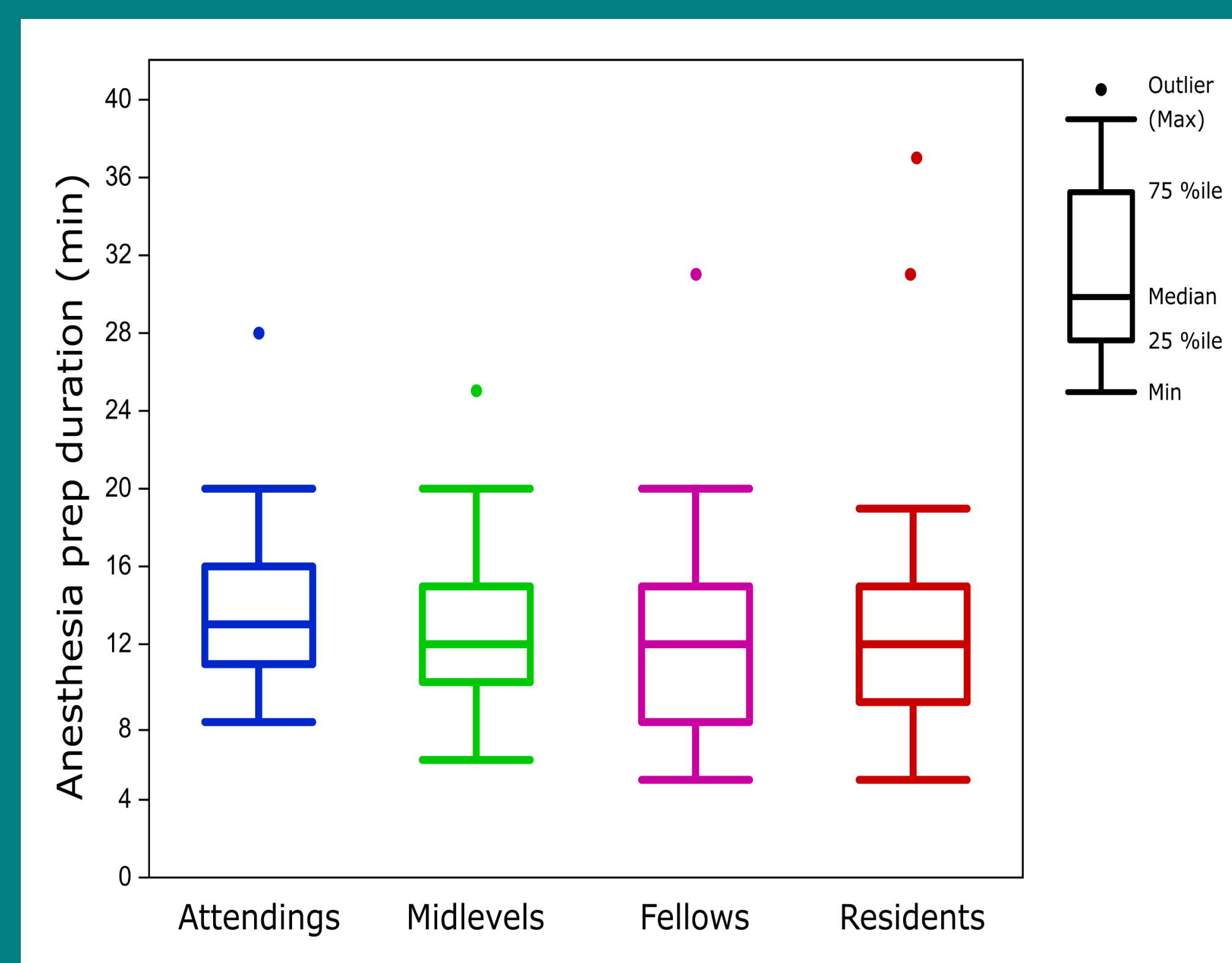
Introduction

As anesthesia care models are refined and streamlined, some studies have examined various aspects of the economics of anesthesia to improve efficiency. Similarly, as teaching institutions take on greater procedural volume with constraints on proportional expansions of anesthesia staff and tighter turnaround times, greater value is held in rapid induction and emergence. In this study, we conducted a cross-sectional analysis to compare induction and emergence times between residents, fellows, mid-levels, and solo attendings.

Methods & Results

To minimize variation of anesthetic technique, procedural length and complexity, and patient comorbidities, the anesthetic records of children undergoing non-emergent esophagogastro-duodenoscopy (EGD) were reviewed. A total of 130 cases were included. Induction time began upon entering the operating room until intubation. Emergence time was the duration from the end of surgery until extubation.

Also recorded were total time in the operating room (OR), total surgery time, whether an adverse event occurred during the anesthetic, and whether the patient had reactive airway disease (RAD), obstructive sleep apnea (OSA), or a recent upper respiratory infection (URI). Patient characteristics, including age, weight, and ASA class were also included. Analysis was conducted with the Kruskal-Wallis test, as not all distributions were normal. Among all anesthesia providers, in comparing the time from entering the OR until intubation was complete, there was no significant difference between the four categories of providers ($p = 0.60$).



Similarly, emergence time did not differ significantly between residents, fellows, mid-levels, and solo attendings ($p = 0.53$).

Discussion

Many studies have examined economic factors of anesthesia care, including the cost-saving modalities of low-flow volatile over intravenous anesthesia and reducing overall time in the OR. An interesting discussion among teaching institutions is how efficiency and outcomes may vary by provider. One study suggests that intraoperative teaching imposes greater workload on the anesthesia provider with negative effects on vigilance and efficiency.

Other studies have examined similar comparisons across anesthesia providers and found no significant difference in adverse perioperative events.

Other studies have described prolonged anesthesia times prior to starting vascular and cardiothoracic surgeries, though there has not been a comparison of efficiency between anesthesia care providers within a simple procedural subset such as this. Our results disclose the equivalence in time required to intubate and extubate between residents and the other anesthesia providers. As a metric of clinical performance and efficiency, this finding is a hallmark of a successful teaching institution.

References

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