

Introduction

Many factors contribute to length of stay (LOS) for pediatric patients in the PACU. LOS is often used as a measure of the efficacy of anesthetics. Prolonged PACU recovery may also compromise patient care, create inconvenience for families, and increase costs for patients and hospitals.

Objective

We designed this retrospective study to identify the association between Phase I PACU LOS and the assigned PACU nurse while adjusting for patient-, anesthetic-, and surgical-related factors.

Methods

Surgeries included: Laparoscopic appendectomies, adenoidectomies, supracondylar fracture percutaneous pinning, inguinal hernia repairs, umbilical hernia repairs

Location: 2 free standing pediatric hospitals in the Atlanta metro area over a 5-year period

Explanatory Variables: Gender, age, race/ethnicity, ASA class, previous surgery, preop midazolam, preop opioids, preop gabapentin, off-hours surgery, surgery type, intraop morphine equivalents, intraop ketorolac, intraop local anesthetic, intraop dexmedetomidine, deep extubation, time admitted to PACU, PACU dexmedetomidine, PACU opioid doses, PACU nurse, anesthesiologist, hospital.

Statistical Method: Linear mixed effects regression model, and likelihood ratio χ^2 statistic minus the degrees of freedom (d.f.), performed with R 4.0.2

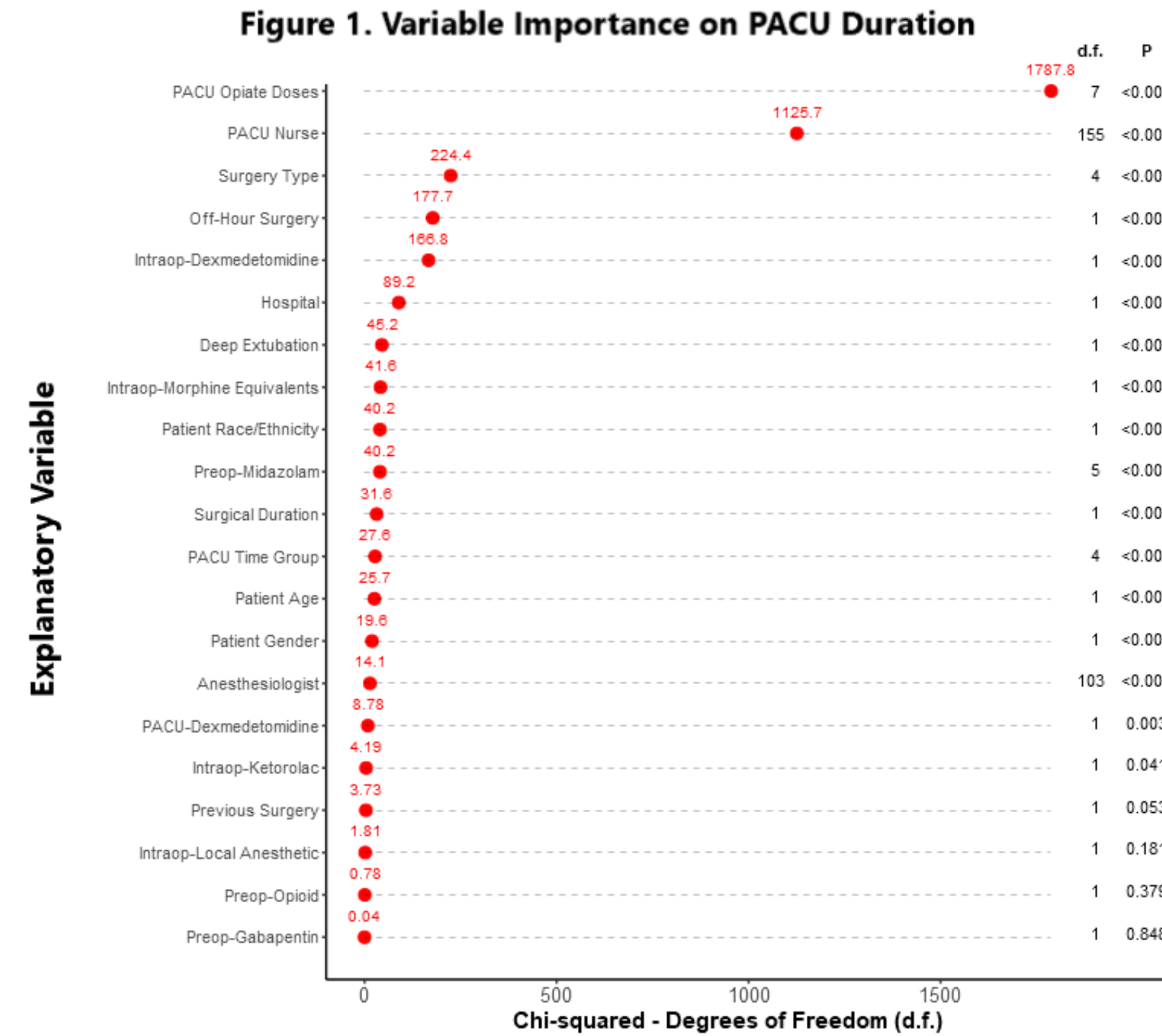
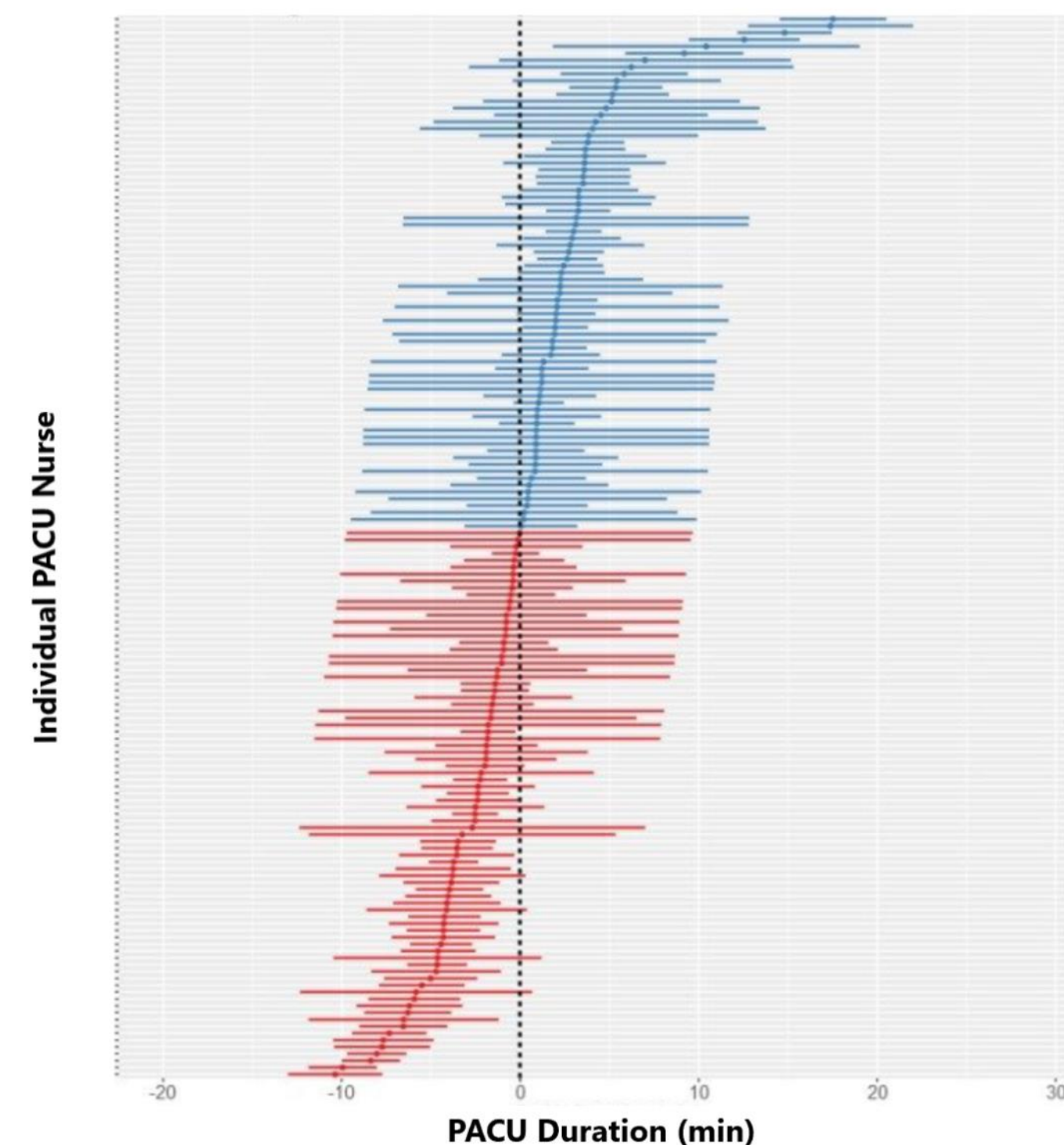


Figure 2. PACU Duration Variability Associated with PACU Nurse



Results

12334 patients were included in this analysis with a median [IQR] Phase I PACU LOS of 29 [21, 40] minutes. Out of the variables that were added to the regression model, the PACU nurse who was assigned to the patient was the second-most important predictor of Phase I PACU LOS by a large margin (Figure 1). The difference in average adjusted PACU duration from the nurse with the least time to the one with the most was approximately 30 minutes (Figure 2).

Conclusion

Individual PACU nurse is a leading determinant of Phase I PACU LOS in pediatric patients, second only to PACU opioid administration. Although the important role of PACU nursing care has been observed previously in adults¹, our study is the first to determine this in children. Moreover, the potential difference in recovery duration caused by Phase I nurses is clinically significant, averaging up to 30 minutes, comparable to the average total LOS in PACU. These findings serve to guide further strategies to improve nursing efficiency and reduce delays in PACU recovery.

References

1. Pavlin, D.J., et al. Factors Affecting Discharge Time in Adult Outpatients, *Anesthesia & Analgesia*: October 1998 - Volume 87 - Issue 4 - p 816-826