

# Development of a Postoperative Short-term Patient Outcome Dashboard for Individualized and Team Performance Feedback

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## BACKGROUND

A recently established BC Children's Hospital data registry combines perioperative patient data with short-term postoperative outcomes.

## OBJECTIVE

To develop a performance feedback dashboard for anesthesiologists to self-reflect and motivate improvement in anesthetic care.

## METHODS

1. Exempt from REB approval as a quality improvement project.
2. The data registry captures patient and procedure information from operating room scheduling system.
3. Post Anesthesia Care Unit (PACU) nurses record use of rescue opioid and antiemetic medication within PACU, then makes follow-up phone call within 24 hours of discharge to collect parent or patient report of postoperative outcomes.
4. Co-designed dashboard with 5 anesthesiologists over 4 iterations, using Microsoft's Power BI software. See Figure 1, 2, and 3 for example screenshots.

## RESULTS

3,815 and 4,668 cases were recorded for PACU postoperative outcomes and 24-hour postoperative outcomes, respectively (Table 1). Incidence rates of PACU outcomes were generally low (Table 2). Severe 24-hour outcomes were rare (Figure 4).

Anesthesiologist feedback highlighted the importance of:

- maintaining anonymity while supporting comparison of an individual's performance with peers
- supporting interpretation and comparison of postoperative outcomes using known risk factors

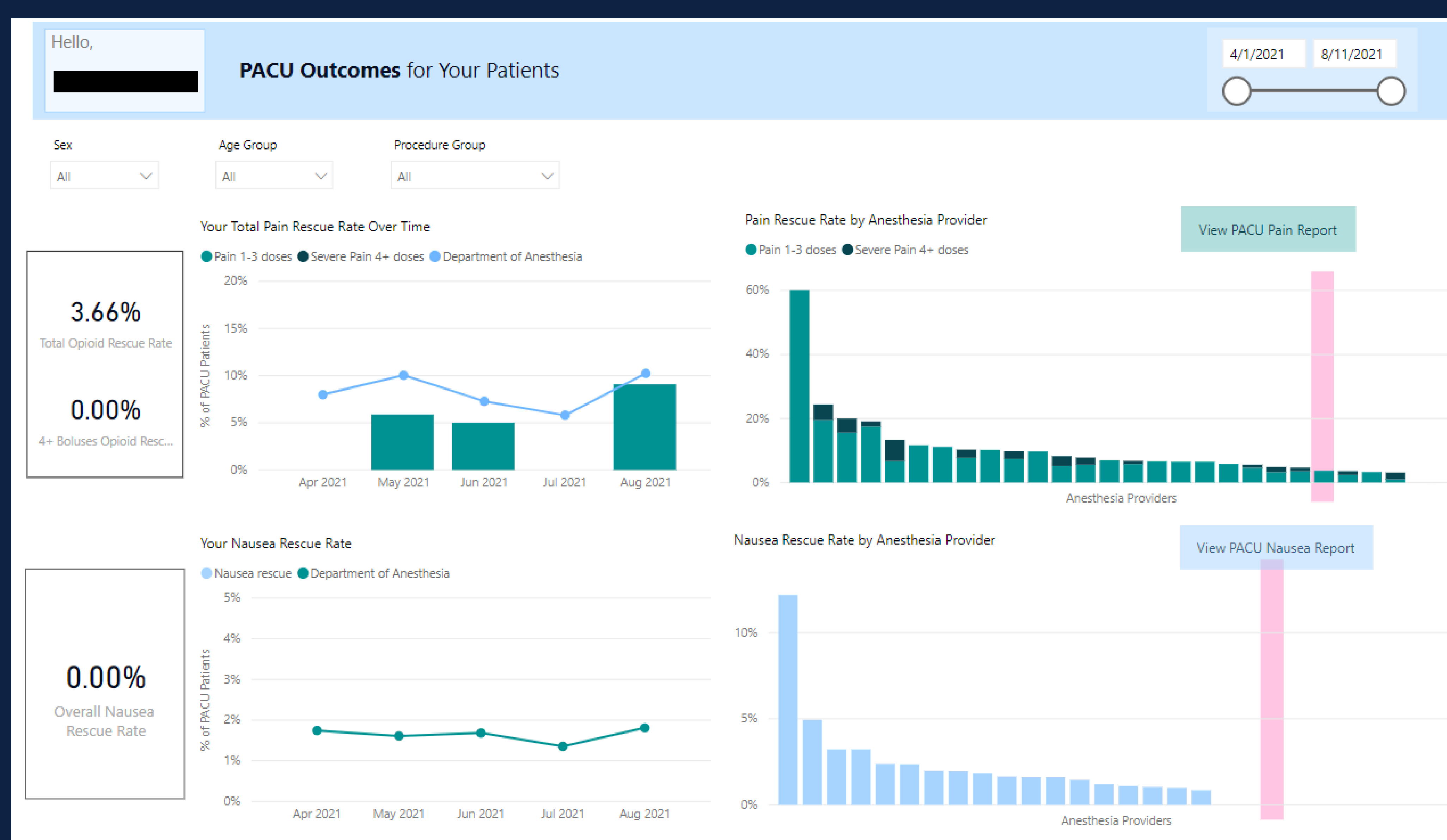
## CONCLUSION AND FUTURE WORK

The pediatric anesthesia department deployed the initial dashboard in September 2021.

We will conduct usability testing and user feedback to evaluate the effectiveness of the visualization approach.

Long-term clinical impact of dashboard on group performance and outcome variability evaluated in follow-up study (See QR codes).

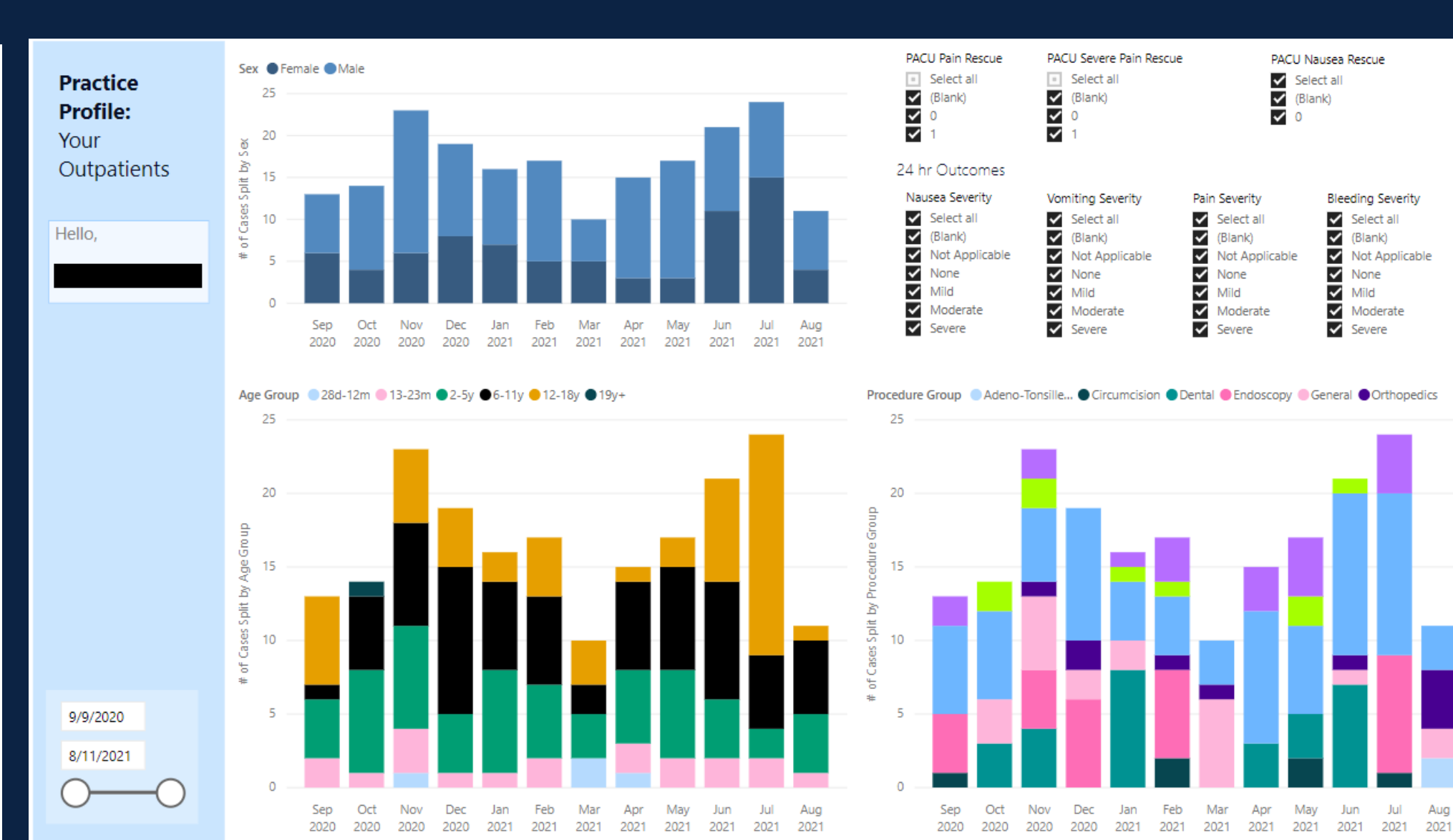
# We built a dashboard for anesthesiologists to view their patient's postoperative outcomes compared to their peers



**Figure 1.** Summary of an anesthesiologist's PACU pain and nausea rescue outcomes.



**Figure 2.** Summary of 24-hour post-operative outcomes



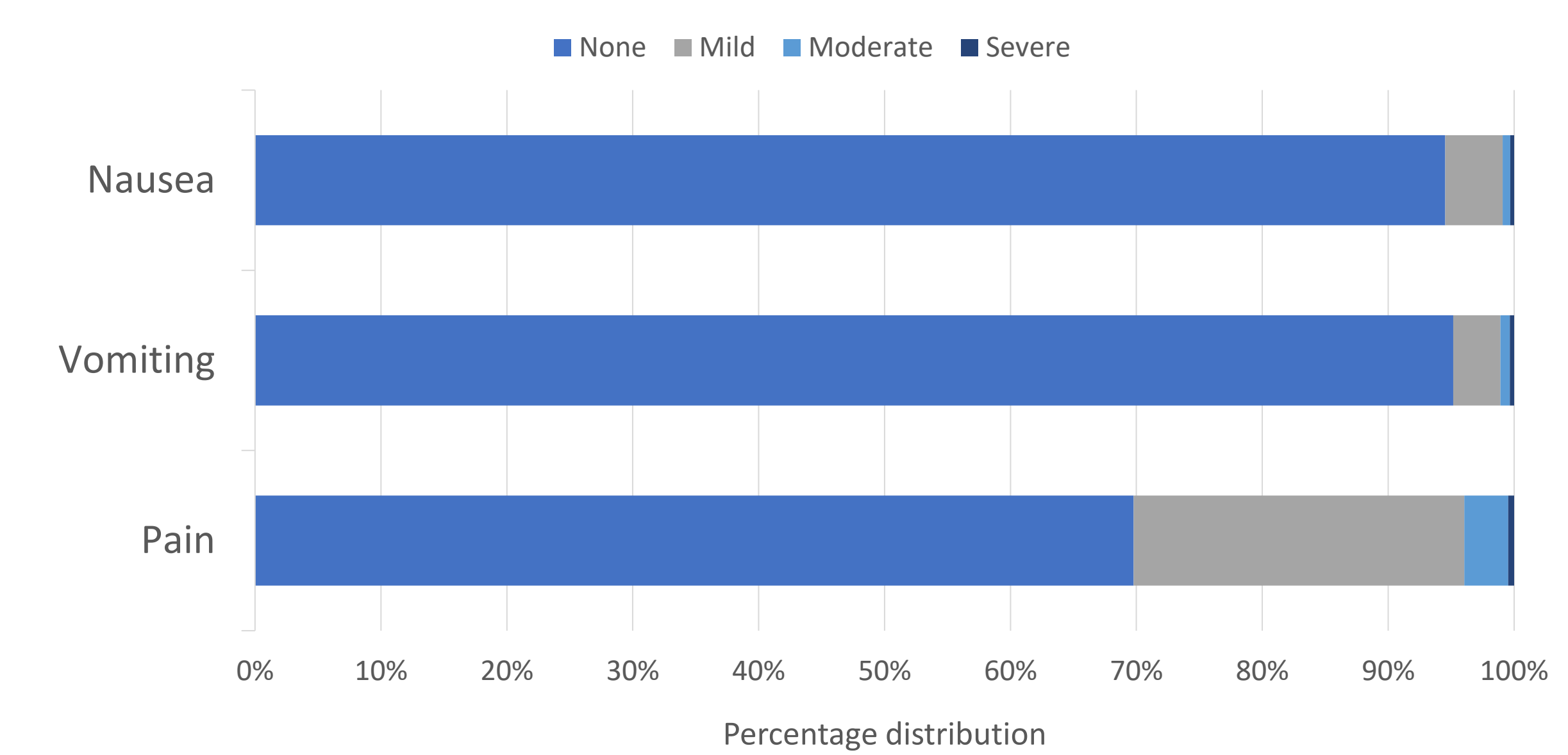
**Figure 3.** Anesthesiologist's practice profile

**Table 1:** Data collected since establishment of data registry

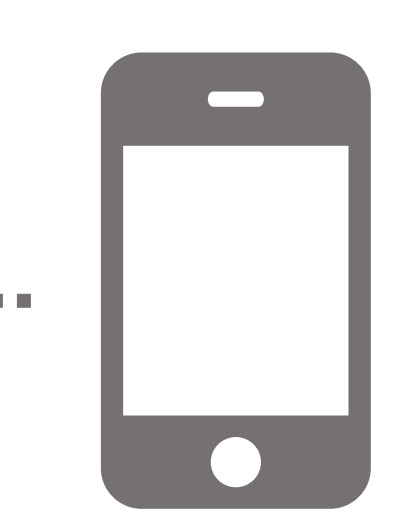
Type of Outcome Data	Collection Period	# of Cases
PACU postoperative outcomes	Apr 2021 – Dec 17, 2021	3,815
24-hour postoperative follow-up call outcomes	Sep 2020 – Dec 17, 2021	4,668

**Table 2:** Incidence rate of PACU postoperative outcomes in the department (as of Dec 17, 2021)

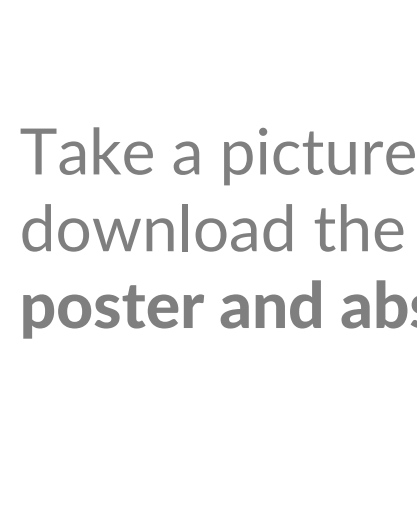
PACU Postoperative Outcomes	Incidence Rate
Total pain rescue	7.5%
Severe pain rescue (4+ doses of opioids)	1.1%
Nausea rescue	1.3%



**Figure 4.** Distribution of 24-hour postoperative outcomes in the department (As of Dec 17, 2021)



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Take a picture to download the follow-up poster and abstract

## Acknowledgement

Thank you to all PACU nurses who contributed to the BC Children's Hospital Post-Operative Follow Up database.



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