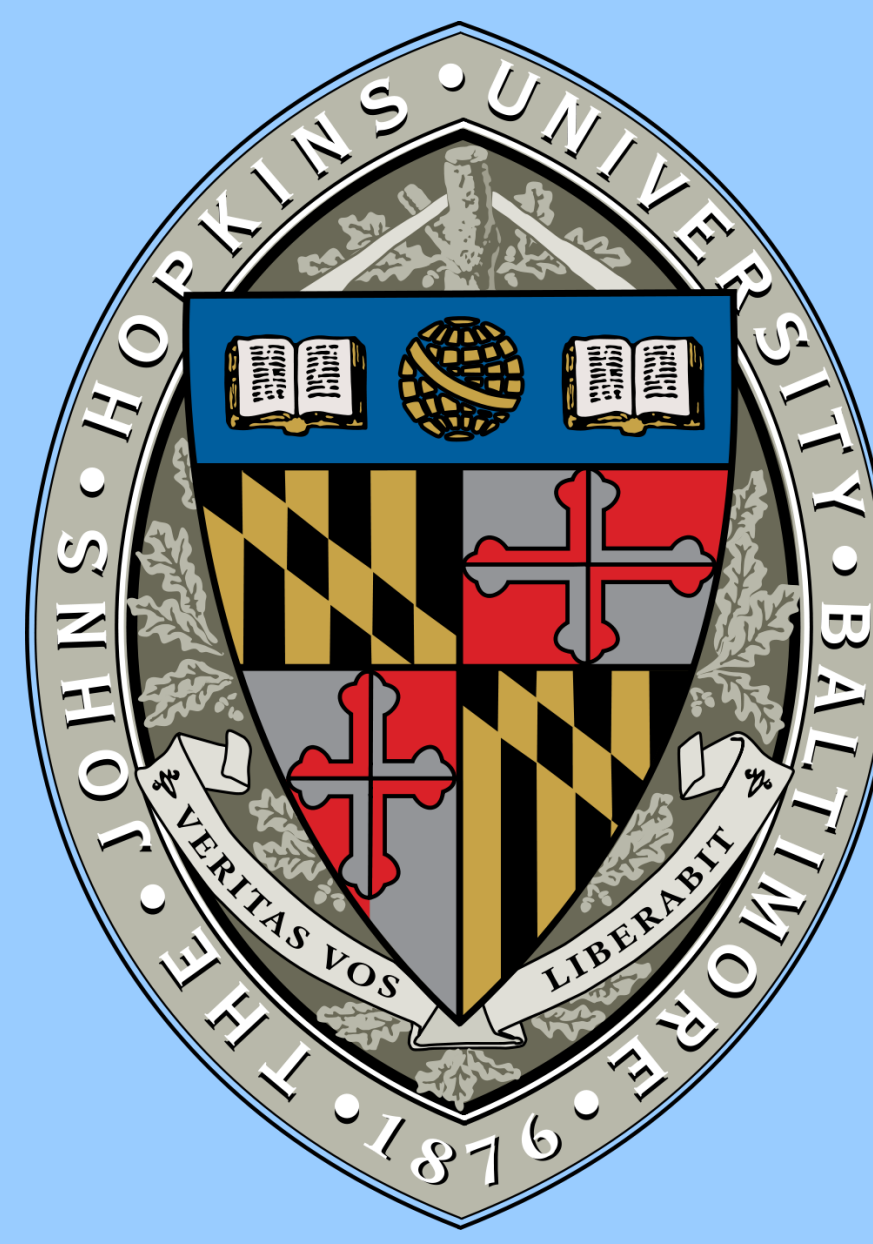


CUSP: Identifying Gaps that Impact Patient Safety in the Pediatric PACU through Data Analysis

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1 Background

The term nurse sensitive indicators refer to the workload of a nurse. In order to identify gaps in patient care that influence patient safety, the Johns Hopkins Hospital Pediatric PACU CUSP team was tasked with identifying nurse sensitive indicators unique to the Pediatric PACU. The Pediatric PACU was initially one open room that allowed nurses to take two patients and observe both patients. The new Pediatric PACU now has curtains and walls separating the rooms and this prevents the nurse from seeing the second patient emerging from anesthesia. The Pediatric PACU modified an acuity tool to capture the workload of the PACU nurse and the patient's acuity, who is emerging from anesthesia (Mamaril et al., 2007).

Purpose of Study

The objective of this study is to explore the pediatric PACU nurse workload indicators that are relational to nursing care. These include patients emerging from anesthesia with an airway/advanced airway support and to describe how patient acuity influences the pediatric nurse: patient ratios

2 Methods

A retrospective review of a handoff tool/instrument (front-demographic data) with data points was conducted. The data points were weighted workload indicators that describe the nurses workload in the pediatric PACU. I collated and entered into an excel spreadsheet. I then analyzed and summarized into frequency tables. Finally I correlated the ASA physical classification with 1:1 minutes and also correlated ASA score with airway emergencies. An ASA score refers to the overall health status of a patient prior to surgery (Daabiss, 2011). The higher the ASA score, the more critical the patient.

ASA Classification		Examples:
ASA I	A normal healthy patient	Healthy; no smoking, no or very minimal drinking.
ASA II	A patient with mild systemic disease	Smoker; more than minimal drinking; pregnancy; obesity; well controlled diabetes, well controlled hypertension; mild lung disease.
ASA III	A patient with severe systemic disease, not incapacitating	Diabetes, poorly controlled hypertension; distant history of MI, CVA, TIA, cardiac stent; COPD, ESRD; dialysis; active hepatitis; implanted pacemaker; ejection fraction below 40%; congenital metabolic abnormalities.
ASA IV	A patient with severe systemic disease that is a constant threat to life	Recent history of MI, CVA, TIA, cardiac stent; Ongoing cardiac ischemia or severe valve dysfunction; implanted ICD; ejection fraction below 25%.
ASA V	A moribund patient who is not expected to survive without the operation	Ruptured abdominal or thoracic aneurysm; intracranial bleed with mass effect; ischemic bowel in the face of significant cardiac pathology...
ASA VI	A patient who has already been declared brain-dead and whose organs are being removed for transplant.	

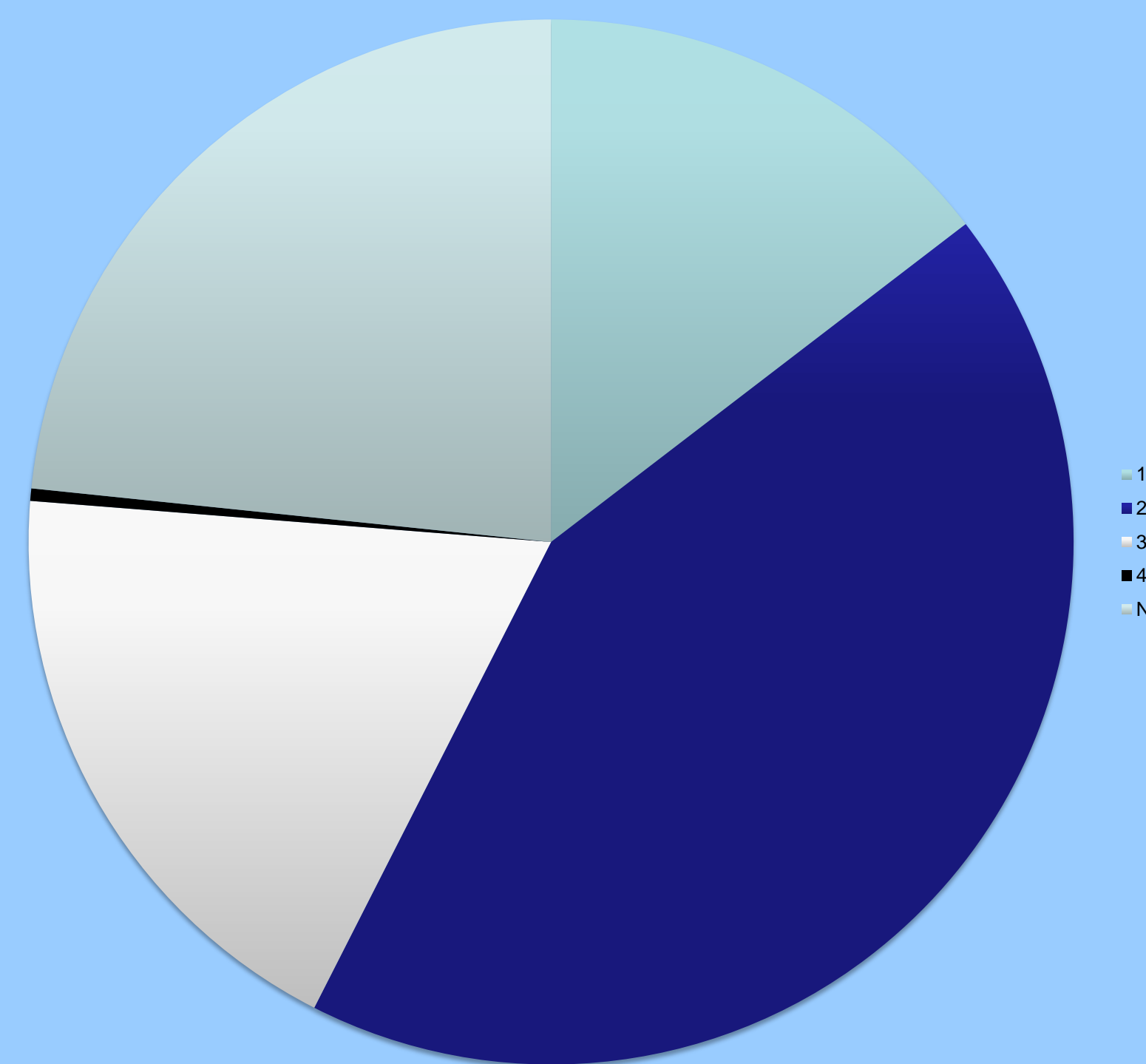
The addition of an 'E' indicates emergency surgery.

3 Results

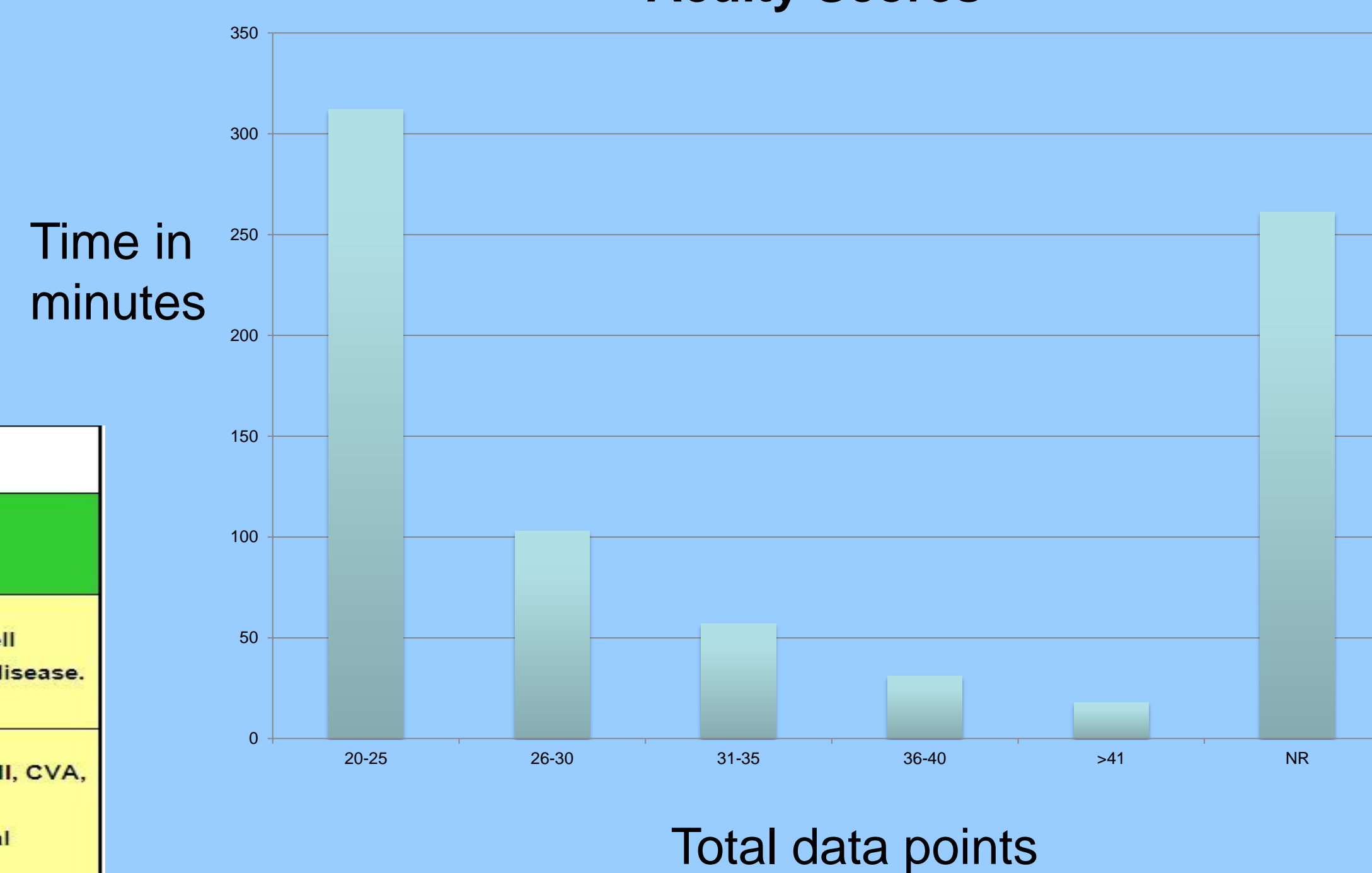
The results of the study are focused on the 753 patients seen during the month of March 2014 in the Pediatric PACU. If any data was missing is was marked as NR.

There were 14 cardiac and respiratory arrests during a one month period requiring a reported 60-360 minutes of 1:1 nursing care. There were 3 full cardiac arrest with chest compressions and resuscitative doses of epinephrine, that were reviewed by the CPR committee of the children's center. In addition, these charts were pulled and reviewed by the Medical Director of Pediatric Anesthesia, the Nurse Manager, and the CUSP Team Leader.

ASA Scores



Acuity Scores



Handoff tool

4 Conclusions

There was no correlation between ASA physical classification score and emergencies. This project did show a low ASA score (healthy) correlating with airway emergencies.

The main reason for the inability to establish a correlation between ASA score, and 1:1 time was that the Acuity tool was often not completed fully or accurately by the nursing staff.

This was due to several factors identified by management and nursing staff. Factors include:

- Frustration among nurses who felt that the Acuity tool would not make a difference to patient care
- Inability to complete the Acuity tool in addition to standard charting that nurses are required to complete

Increased education about the purpose of the tool among the nursing staff has helped to encourage completion of the form.

The Nurse Manager and the Medical Director of Anesthesia reviewed these findings and discussed this in the CUSP program. This led to a change in practice of extubating deep in the OR with oral airways in place on arrival to PACU. The surgical team now wakes the pediatric patient up in the OR so the patient is reactive and responsive under a controlled anesthesia environment and then transported to the PACU with a stable airway.

5 Future Directions

- Conduct a time-in-motion study correlating the time the nurses take to manage nursing interventions. This will more accurately define the workload of the nurse.
- Identify and quantify the number of nurses needed at the pediatric bedside during the patient's length of stay.
- Identify safety defects and make recommendations to change practice to keep the most vulnerable patients safe.
- Better completion documentation on the acuity tool
- Better education surrounding the purpose of the Acuity tool to staff members

6 References

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Funding Source:

The Helene Fuld Leadership Program for the Advancement of Patient Care Quality and Safety