

Implementation of Delirium Monitoring in Pediatric Acute Care Cardiology

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INTRODUCTION

Topic

The prevalence of delirium ranges from **27-49%** in the critically ill pediatric cardiac population (Meyburg et al., 2017; Patel et al., 2017). Delirium is also associated with **increased morbidity and mortality** (Smith et al, 2017; Traube 2017). There is currently a **lack of research** on pediatric delirium in the pediatric acute care cardiac population. In order for the prevalence of delirium to be determined outside of the critical care setting, delirium monitoring with a bedside tool needs to be implemented.

Problem

Research in the adult population has taken delirium monitoring outside of the critical care setting to acute care floors because of the need for continuing to monitor for delirium throughout hospitalization. Pediatric research lags behind in this area. The nursing staff and nurse practitioners on the Pediatric Cardiac Acute Unit (PCARD) have previously brought several concerns for delirious patients to the pediatric delirium team. The only way to note that a patient is experiencing delirium currently is to consult psychiatry. **The problem is there is no bedside tool for delirium screening in PCARD at Monroe Carell Jr Children's Hospital at Vanderbilt despite concern for patients experiencing delirium.**

Team Members

- PCARD bedside nurses
- PCARD Nurse Practitioners
- PCARD Nursing Educator
- PCARD shift leaders
- PCARD Nurse Manager
- Pediatric Delirium Team
- Executive sponsor: Misty Evans, DNP, CPNP-AC

Aim

To **increase** the rate of **delirium monitoring** by the bedside nurses from **0% to 70%** within 3.5 months (September 2022-December 2022) in the Pediatric Cardiac Acute Care Unit.

METHODS

PLAN:

- Develop education for PCARD staff
- Apply for exempt status from the IRB at Vanderbilt
- Develop pre-education survey to assess nursing and nurse practitioner baseline knowledge

DO:

- Send out survey prior to educational sessions with nurses and nurse practitioners
- Educate staff about delirium and how to use the delirium monitoring tools in various forums (NP meeting, nursing staff meeting, and Cardiologist meeting)
- Train superusers (shift leaders)
- Roll out delirium monitoring
- Collect data on pre-education surveys and delirium charting by nursing
- After education sessions, send out post-education surveys to nurses and nurse practitioners

STUDY:

- Analyze data for delirium monitoring documentation and pre and post education surveys
- Compare delirium monitoring documentation percentage to goal

ACT:

- **Adopt change.** Continue to monitor for delirium in PCARD with continued education on delirium and the delirium monitoring tools.

RESULTS

Nursing and Nurse Practitioner Knowledge Pre and Post Education:

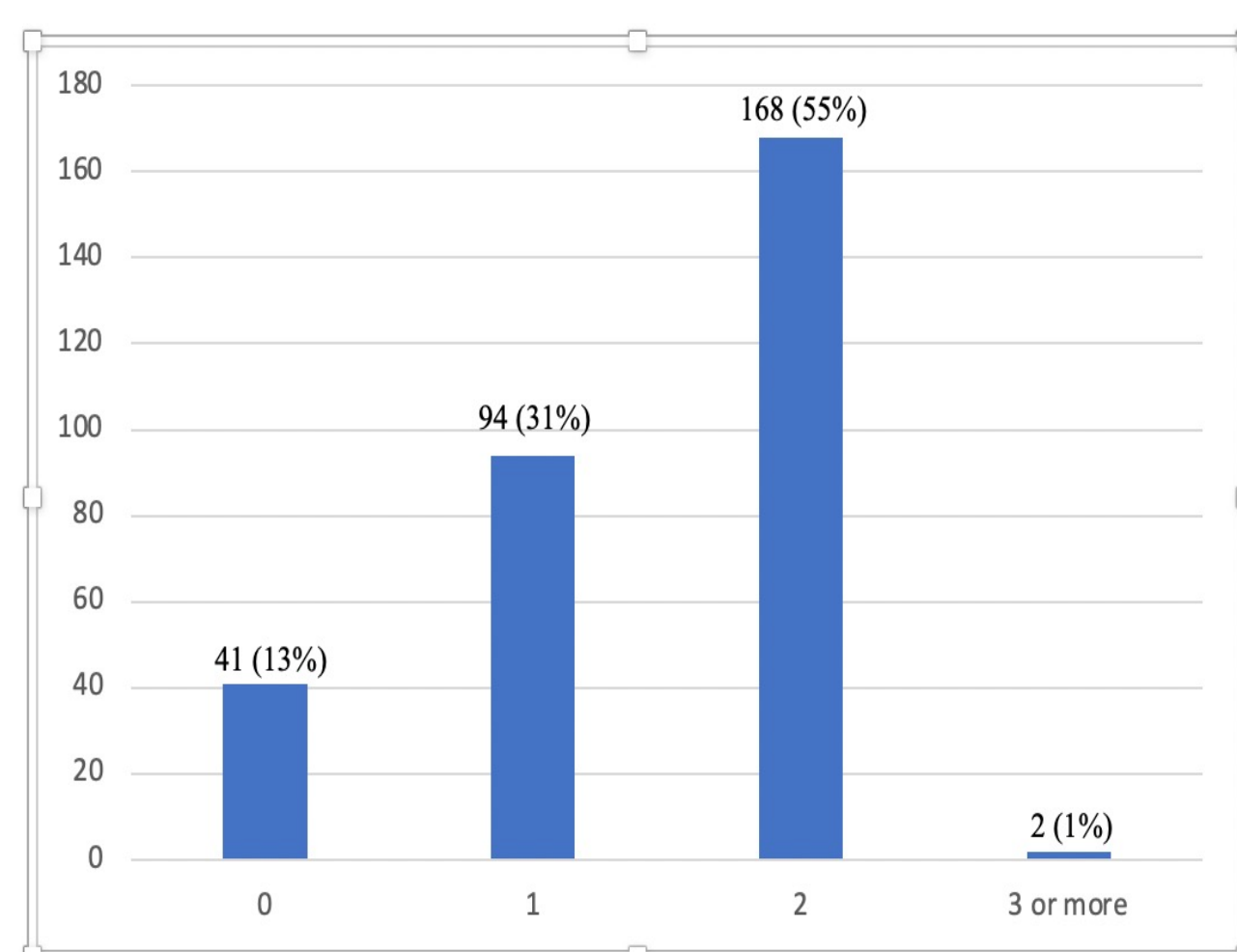
- Pre-education survey had a 42.5% response rate; post-education survey had a 35% response rate (Table 1 & 2 in additional tables).
- Prior to education, **100%** of survey participants correctly identified that **pediatric patients can develop delirium** and **there are different types of delirium**.
- After education, there was an increase in correct responses in two questions:
 - Identifying hypoactive delirium as the most common type of delirium in pediatrics (an increase from 16% to 44%)
 - Choosing the correct age range of patients to utilize the Preschool CAM (21% to 50%) .
- Due to an increase in onboarding of new nurses, a second round of education did take place. Additional demographics and results can be seen by utilizing the QR code below.

Documentation of Delirium Assessments:

- The **highest rate** of delirium assessments performed in a 24-hour period was **two** (55%), which is the goal (Figure 1). The second highest rate of delirium assessments was once in a 24-hour period (31%).
- **After a second round of education the delirium assessment documentation dramatically increased to surpass the goal of 70%** (Figure 2).
- One patient scored delirium present out of 264 assessments. The score was documented prior to a rapid response being called (Figure 3).

Figure 1

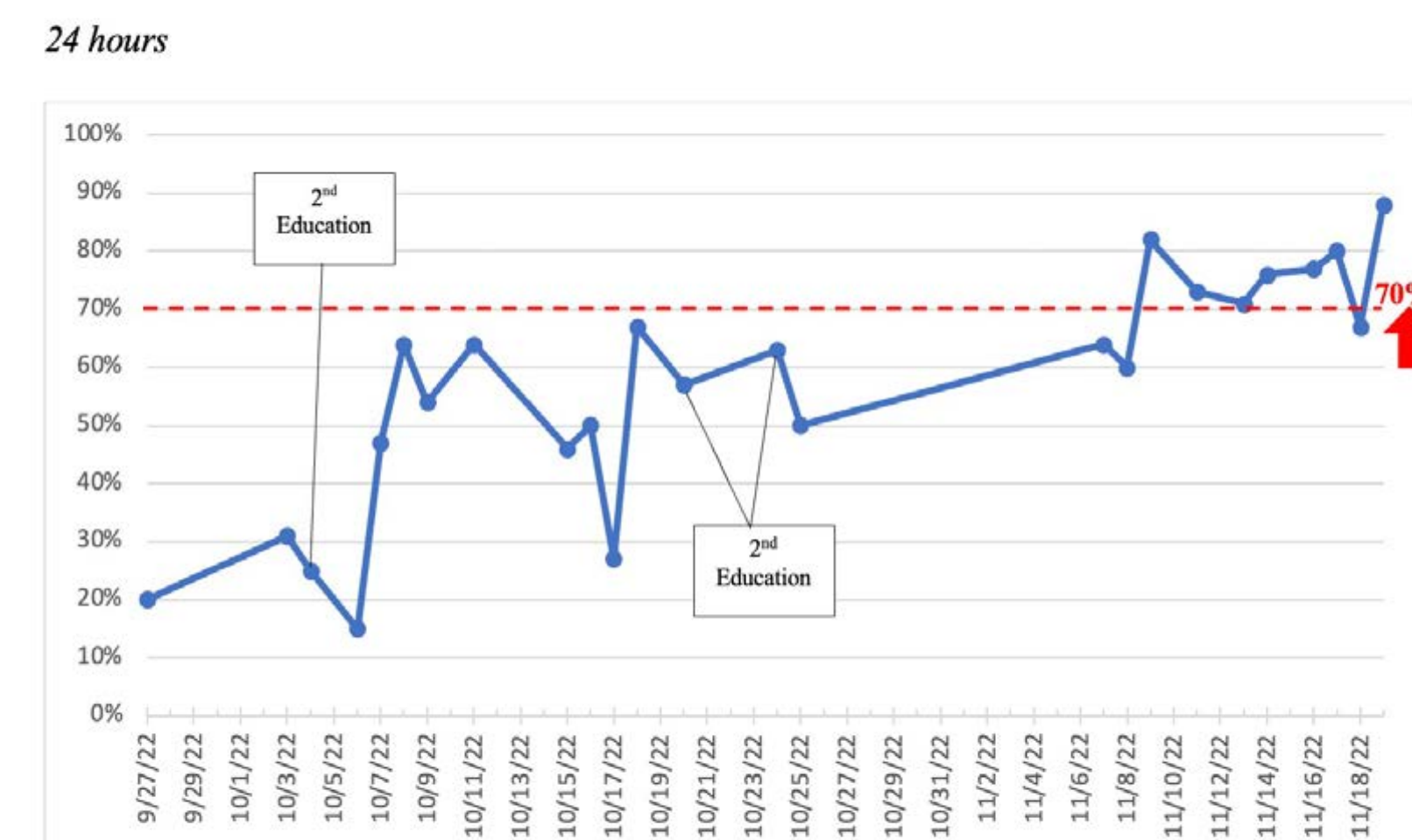
Title: Number of Assessments per Patient in 24 Hours (n=305)



Notes. This figure depicts how many delirium assessments were done per patient in 24 hour data collection days. The goal is minimum two delirium assessments per day.

Figure 2

Title: Percentage of Correct Choice of Delirium Tool and Frequency of Delirium Assessments in 24 hours



Note. Initial mandatory education took place at the beginning of September for all nurses and nurse practitioners on the Pediatric Cardiac Acute Care Floor (PCARD). Nursing documentation started September 15th. There was a second round of mandatory education meetings for the nurses that included a short education on delirium.

IMPLICATIONS FOR PRACTICE

Implementing delirium monitoring in the pediatric acute care setting for populations that are at a high risk of developing delirium. The next steps have already started with verifying if the nursing staff is performing the delirium assessments accurately. Once this is completed, we will then be able to obtain the prevalence of delirium in PCARD. We will also be monitoring those who have delirium present to see what events occur around this transition into delirium.

REFERENCES & ADDITIONAL TABLES/ FIGURES

