Initiating a Validated Pediatric Post-Anesthesia Emergence Delirium Scale in the Pediatric Post-Anesthesia Care Unit

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Introduction: Emergence Delirium(ED) is a frequent occurrence in the pediatric PACU. The PAED scale is a research validated tool that has been shown to help nurses and anesthesiologists recognize and appropriately treat ED.

Identification of the problem: Our PACU was currently not using a measuring tool. After learning about the scales already in place at a national conference, I discussed with the unit manager and she agreed that a PAED scale would be a valuable tool. The anesthesiologist that agreed to be   physician support recommended that we carry this out as a research project.

Purpose of the study: The aim of this study is to assess our PACU nurse's current knowledge of delirium, implement education, as well as encourage documentation of the PAED score. The potential benefits of the study include benefiting future pediatric patients and their nurses by improving how our institution approaches pediatric post-anesthesia delirium.

Methods: IRB approval was obtained. A survey was constructed to measure 2 things: 1) nurses knowledge of PAED pre and post education and implementation of a PAED scale 2) nurses confidence and satisfaction with several aspects of PAED pre and post education and implementation. An invitation email with a link to the online survey was sent to all nurses who worked in the pediatric PACU. Consent was in the email. The prospective participant can elect to participate in the survey or not participate. The consent described the anonymity of the survey by including the statement "Identifiers will be removed and the de-identified information may be used for future research without additional informed consent from the subject."

Pre-intervention data was collected via survey answers. Training for the PAED scale was implemented in concurrence with pediatric emergence delirium training by anesthesia. One month post intervention, the survey was re-sent. A final six-month post intervention survey was repeated. Each survey knowledge question was scored and results were analyzed using the T-test.

Outcomes/Results: A total of 15 PACU nurses participated. 14 responded to the one month survey and 7 responded to the 6 month survey. The most significant increase was knowledge of the PAED scale (↑ 58.3%, $p < 0.0001$)) as well as knowledge about patient risk factors (↑ 13.3%, $p = 0.01$) and dispelling common myths surrounding PAED (↑ 14.6%, $p = 0.01$). It is unclear at this time if the education initiative was ineffective in regards to the other goals of PAED knowledge, or if our pediatric PACU nurses simply pre-possessed much of this knowledge prior to implementation.

Nursing confidence and satisfaction also increased with the largest gains being seen in their satisfaction with the tools they have at their disposal (↑28.8%) and the responsiveness of anesthesiologists (↑26.5%). The anesthesiologists were not included in the education sessions; therefore the increase in satisfaction is likely due to either a change in nursing perception or a change in anesthesiologist behavior due to nurses reporting the PAED score.

A six-month follow-up survey was distributed to see how these gains change over time. The complete results are pending analysis.

Discussion: The PAED scale is a research-validated tool that is easy to use to quickly identify and discern if emergence delirium is present. The nursing education initiative and implementation was successful in increasing knowledge of the PAED scale as well as increasing knowledge about patient risk factors and dispelling common myths surrounding PAED. The documentation piece has taken several months to get built as we have 3rd party vendors to develop most of our screens. Currently we are waiting for the screen to be included in our assessment options. During the study, a verbal reporting of the score was provided to the anesthesia provider. Further studies to determine documentation compliance would be helpful.

Conclusion: The findings have demonstrated that the pediatric PACU nurses are more confident in identifying true ED. Additionally, it showed that they are more aware of the tool used to score delirium and what intervention(s) are the best to implement.

Implications for perianesthesia nurses and future research: The PAED scale chosen for this study promotes quick and easy scoring. Identifying emergence delirium quickly in pediatric patients is crucial to implementing the appropriate intervention(s). Future research desired is to determine if having the parent at bedside before onset of delirium would decrease the intensity and/or longevity of ED.