

## INTRODUCTION

- Pediatric emergence delirium (ED) is a unique postoperative occurrence; with varying prevalence, manifesting as **hyperactivity, disorientation, non-purposeful movement, incoherence, and potential for self-harm**
- Due to its unpredictability and distressing presentation, pediatric emergence delirium requires prompt recognition and accurate identification
- The PAED scale is psychometrically sound with high interrater reliability and is the most used tool in the post anesthesia period

## Background & Significance

- The PAED scale is under-utilized and emergence delirium assessment is not consistently performed by anesthesia providers
- This postoperative phenomenon continues to evolve within literature as there remains unanswered questions pertaining to **identification, prevention, treatment, and long-term impacts**
- It is estimated that over 450,000 children under the age 18 receive general anesthesia for surgeries annually
- Reported incidence as high as 50% in children under the age of 6

## LITERATURE REVIEW

- Databases:** Medline, CINHALL, Scopus, PsychINFO, and the Johanna Briggs Institute
- Inclusion Criteria:** search yielded 47 articles → 39 scholarly articles were applicable

## METHODOLOGY

<b>Setting</b>	Rutgers University School of Nursing & Tertiary Academic Medical Center in North-Central New Jersey
<b>Population</b>	Current Rutgers Nurse Anesthesia Residents along with Anesthesiologists, Certified Registered Nurse Anesthetists and PACU Nurses
<b>Intervention</b>	Implementation of the PAED scale badge holder through pre-test, post-test, and post-post test survey interventions
<b>Outcome Measures</b>	Primary outcomes focused on increased confidence levels with use of the PAED scale, prevention strategies, identification and understanding pediatric emergence delirium
<b>Subject Recruitment</b>	Recruitment flyer and information sessions

## Will the use of the PAED scale quick reference badge holder improve Pediatric Emergence Delirium identification among interprofessional health care providers?

Emergence Delirium and Agitation in Children <i>UpToDate 2019</i>	
<p><b>Pre-Op Prevention</b></p> <p>Fentanyl Intra-Nasal single dose (0.5-1mcg/kg)</p> <p>Midazolam P.O. single dose (0.5 mg/kg)</p> <p>Precedex Intra-Nasal 30-60 minutes prior to induction ( 1-2 mcg/kg)</p> <p><b>Intra-Op Prevention</b></p> <p>Propofol IV single dose at the end of anesthesia (1mg/kg)</p> <p>Fentanyl IV single dose near the end of surgery (1mcg/kg)</p> <p>Precedex IV single dose during emergence (0.3 mcg/kg)</p> <p><b>Treatment of Acute Episodes</b></p> <p>Propofol 1mg/kg IV</p> <p>Midazolam 0.1mg/kg IV</p> <p>Fentanyl 1-2 mcg/kg IV or other opioid</p> <p>Parental Presence</p>	<p><b>Differential Diagnosis</b></p> <p>Pain</p> <p>Hypoxia</p> <p>Hypotension</p> <p>Hypocarbia</p> <p>Hypercarbia</p> <p>Hypothermia</p> <p>Hypoglycemia</p> <p>Increased ICP</p>

### Survey Questions Addressed

Pre & Post Survey	Assessment Scale
<ul style="list-style-type: none"> <li>Confidence with using the PAED Scale</li> <li>Understanding the PAED Scale</li> <li>Understanding Prevention Strategies</li> <li>Identifying Patients at Risk</li> <li>Confidence in Ability to Educate Parents</li> </ul>	<ul style="list-style-type: none"> <li>Strongly Disagree = 1</li> <li>Disagree = 2</li> <li>Neutral = 3</li> <li>Agree = 4</li> <li>Strongly Agree = 5</li> </ul>

Pediatric Anesthesia Emergence Delirium Scale <i>Lerman et al. (2004)</i>					
Behavior	Not at all	Just a little	Quite a bit	Very much	Extremely
Make eye contact with caregiver	4	3	2	1	0
Actions are purposeful	4	3	2	1	0
Aware of surrounding	4	3	2	1	0
Restless	0	1	2	3	4
Inconsolable	0	1	2	3	4
1 – Calm, 2 – Not calm but could be easily consoled, 3 – Moderately agitated or restless and not easily calmed, 4 – combative, excited, thrashing around					
Overall Score >12 = Indicative of Pediatric Emergence Delirium					

## PRACTICE IMPLICATONS

- The implementation of the PAED scale → **improves recognition and treatment response time**
- Increasing provider clinical awareness → **enhances recognition of the triggers and signs of pediatric emergence delirium**
- Application of the PAED scale at in the PACU → **improves health outcomes for highly specialized patient population**
- Decreases existing knowledge gap in properly identifying, treating, and preventing pediatric emergence delirium

## RESULTS

	Understand Behaviors (Pre)	Understand Behaviors (Post)	PAED Scale Use (Pre)	PAED Scale Use (Post)	Confidence in Assessment (Pre)	Confidence in Assessment (Post)
Senior N=21	M= 2.82 Sd= .983	M= 4.34 Sd=.582	M= 2.23 Sd= 1.04	M= 4.42 Sd= .676	M= 2.80 Sd= .928	M= 4.47 Sd= .601
Junior N=22	M= 1.69 Sd= .106	M= 4.08 Sd= .848	M= 1.21 Sd= .421	M= 4.89 Sd= 6.25	M= 1.30 Sd= .558	M= 3.95 Sd= .824
MD N=5	M= 4.20 Sd= .447	M= 4.20 Sd= .447	M= 3.80 Sd= 1.09	M= 4.40 Sd= .547	M= 4.00 Sd= .707	M= 4.60 Sd= .547
CRNA N=9	M= 4.50 Sd= .755	M= 4.50 Sd= .534	M= 4.50 Sd= .534	M= 4.75 Sd= .462	M= 4.50 Sd= .534	M= 4.87 Sd= .353
PACU N=4	M= 4.25 Sd= 1.50	M= 4.75 Sd= .500	M= 3.75 Sd= 1.89	M= 4.00 Sd= .816	M= 4.00 Sd= 1.41	M= 4.50 Sd= .577

- There was a **higher level of understanding** the defining behaviors of ED following post-survey.
- Increased levels of understanding** how to use the PAED scale
- Increase in knowledge and confidence** in the level of ED prevention

## CONCLUSIONS

- Increased competence in the recognition and treatment of pediatric emergence delirium.
- Increased confidence and decreased knowledge gap with the use of the PAED scale.
- The implementation of the PAED scale can enhance early treatment, and promotes patient safety
- Serves as a foundation for further researchers to focus on comparative randomize control trials to determine accepted pharmacologic treatment in the acute setting of pediatric ED.

## REFERENCES

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