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ICPS statement on pulse oximetry and cardiac apnea monitoring (CAM) for hospitalized pediatric patients outside critical care areas or the emergency department.

The overuse of continuous pulse oximetry and CAM in pediatric patients is well established and has been associated with increased admission rates and increased length of stay.

Overuse of pulse oximetry and /or (CAM) can add to the cacophony of alarms in the hospital setting causing clinicians to become desensitized or immune to the sounds, and overwhelmed by information – known as “alarm fatigue.” In response to this constant barrage of noise, clinicians may turn down the volume of the alarm, turn it off, or adjust alarm settings outside the limits that are safe and appropriate for the patient – all of which can have serious, potentially fatal, consequences. Overuse of pulse oximetry and /or CAM can also lead to unnecessary:

- transfer to higher level of care
- testing
- admissions / hospital days
- supplemental oxygen

After review of the literature as well as local policy and procedures, the ICPS Pediatric workgroup has reached a consensus opinion on the judicious use of pulse oximetry and / or CAM to combat alarm fatigue and facilitate the delivery of appropriate care.

ICPS recommendations for appropriate use of pulse oximetry and CAM for hospitalized pediatric patients outside critical care areas or the emergency department *

To ensure continued appropriate use, the need for monitoring should be reviewed by the healthcare team on at least a **daily basis**.

AUTOMATIC PULSE OXIMETRY AND CAM USE

- IV opioids or IV benzodiazepine use while patients are sedated, experiencing altered mental status, or hemodynamically unstable
- After general anesthesia or procedural sedation for at least 4 hours or while patients are sedated, experiencing altered mental status, or unstable
- Infants younger than 60 weeks post-conceptual age for 12 hours post general anesthesia
- Epidural catheter in place
- Continuous nebulizer treatment
- Admission for BRUE (Brief Resolved Unexplained Event – formerly ALTE) or apnea including OSA
- Admitted for seizures with on-going seizure risk
- Patients with newly initiated or changing settings on CPAP or BiPAP

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- Patients with a tracheostomy
 - Placed less than 1 month ago
 - Admitted with respiratory illness
- Admitted for or new onset cardiac conditions
- Post ingestion following recommendation from Poison Center
- Medication infusions and blood products with high risk for anaphylaxis (e.g.: IVIG, infliximab, IV iron, chemotherapy drugs as indicated)
- Patients with neuromuscular disease admitted for any reason
- Enteral Withdrawal medication initiation (ex: opioids, benzodiazepines, phenobarbital, clonidine) in a child less than 4 weeks of age. Monitor until vital signs stable and on a non-increasing dose x 48 hours

AUTOMATIC CAM USE

- On a home apnea monitor Patients admitted for syncope
- During bolus electrolyte infusions (non-maintenance)

AUTOMATIC PULSE OXIMETRY USE

- Acute hypoxia or cyanosis **
- New oxygen requirement **
- Less than 6 weeks of age admitted for acute respiratory illness
- Patients on pulse oximetry at home
- High-flow nasal cannula (HFNC)
- IV opioids or benzodiazepines within the last 4 hours
- Patients with a tracheostomy

**Note- consider discontinuing continuous pulse oximetry when stable on room air for 4 hours

ROUTINE CONTINUOUS MONITOR USE IS DISCOURAGED IN:

- Acute respiratory illness unless on supplemental oxygen or <6 weeks of age (e.g.: Bronchiolitis, Asthma, Pneumonia, Croup)
- Routine IV fluid administration
- Parenteral nutrition
- Fever without source or of unknown origin
- Enteral opioid or benzodiazepine use in patients who are not sedated or unstable
- Routine Post-op patients (>60 weeks PCA)
- Patients receiving intermittent inhaled therapies (e.g. albuterol, racemic epi, saline)
- Patients based solely on age

*This consensus statement was developed by an independent panel of interdisciplinary experts including physicians, nurses, quality professionals, and pharmacists. The group reviewed current literature, best practices, and, combined with professional experience, provided these monitoring recommendations for hospitalized pediatric patients outside critical care areas or the emergency department. These recommendations do not replace sound clinical judgement or other published guidelines.

Contributors:

David Zipes, MD FAAP, SFHM
Director, St. Vincent Pediatric Hospitalists
Peyton Manning Children's Hospital at St. Vincent
dgzipes@stvincent.org

Michele Saysana, MD, FAAP
Medical Director, Riley Quality and Safety
Associate Professor of Clinical Pediatrics
Riley Hospital for Children at Indiana University Health
Department of Pediatrics; IU School of Medicine
msaysana@IUHealth.org

Gina Ellis, Pharm.D.
Neonatal and Pediatric Clinical Pharmacy Specialist
Franciscan St. Francis Hospital
Gina.Ellis@franciscanalliance.org

Dennis Gardner, Pharm.D.
Clinical Pharmacy Specialist
Pediatrics/Neonatal Intensive Care
Community Health Network
DGardner@ecomunity.com

Suzanne M. Grannan, MD
Children's Product Line Physician Lead
Community Health Network
SGrannan@ecomunity.com

Larry W. Lynn, M.D.
Medical Director, Pediatric Hospitalists
Community Hospital North
llynn@ecomunity.com

Margie McCaskey, RN, DNP, CPHQ
Formerly Chief Quality Coordinator
Riley Hospital for Children at IU Health

Lorie J. Miller, CPHQ
Quality Management Consultant
Peyton Manning Children's Hospital at St. Vincent
ljmiller@stvincent.org

Colleen Scherer, PharmD, MPA, BCPS
Pediatric Clinical Pharmacist
Peyton Manning Children's Hospital at St. Vincent
cnschere@stvincent.org

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Elizabeth Weinstein, MD, FAAEM, FACEP, FAAP
Associate Professor of Clinical Pediatrics and Emergency Medicine
Indiana University School of Medicine
Riley Hospital for Children and Sidney & Lois Eskenazi Hospital
Director, Indiana Emergency Medical Services for Children Program
Deputy Medical Director, Pediatrics, Indianapolis EMS
elweinst@iupui.edu

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