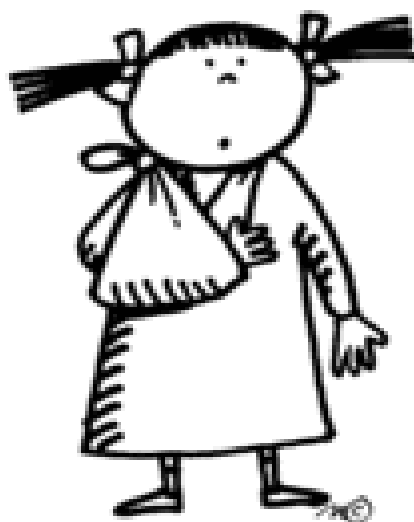


Paediatric Emergency Department

Evidence Update



November 2017

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Training Calendar 2017

*All sessions are **one hour***

November (13.00-14.00)

Thu 2nd	Literature Searching
Fri 10th	Critical Appraisal
Mon 13th	Interpreting Statistics
Tue 21 st	Literature Searching
Wed 29th	Critical Appraisal

December (12.00-13.00)

7 th Thu	Statistics
15 th Fri	Literature Searching

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Key Papers

Below is a selection of articles that were recently added to the healthcare databases.

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

[PEM Emergency Medicine \(October 2017\)](#)

http://www.pemdatabase.org/Recent_studies.html

[Management of Croup in the Emergency Department: The Role of Multidose Nebulized Epinephrine](#)

[\(Pediatr Emerg Care, abstract\)](#)

[Definitive Diagnosis of Children Presenting to A Pediatric Emergency Department With Fever and Extremity Pain](#)

[\(J Emerg Med, abstract\)](#)

[Validity of triage systems for paediatric emergency care: a systematic review](#)

[\(Emerg Med J, abstract\)](#)

[Management of airway obstruction and stridor in pediatric patients](#)

[\(Pediatr Emerg Med Pract, abstract\)](#)

[Pediatric wound care and management in the emergency department \[digest\]](#)

[\(Pediatr Emerg Med Pract, abstract\)](#)

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Critical Care Medicine [Vol. 45, No. 11](#)

[Risk Stratification in Pediatric Acute Respiratory Distress Syndrome: A Multicenter Observational Study*](#)

Judith Ju-Ming Wong, MBBCh BAO, MRCPCH; Huu Phuc Phan, MD; Suwannee Phumeetham, MD; et al.

Frontiers in Pediatrics (Section: "[Pediatric Critical Care](#)")

[Supraclavicular Approach to Ultrasound-Guided Brachiocephalic Vein Cannulation in Children and Neonates](#)

Merchaoui, Z. et al (05 October 2017)

[Glycemia Is Related to Impaired Cerebrovascular Autoregulation after Severe Pediatric Traumatic Brain Injury: A Retrospective Observational Study](#)

Young, A.M.H. et al (25 September 2017)

Intensive Care Medicine [Volume 43, Number 11](#)

[Paediatric sepsis: old wine in new bottles?](#)

Luregn J. Schlapbach, Etienne Javouhey & Nicolaas J. G. Jansen

[High variability of treatments for paediatric status asthmaticus: a retrospective study in PICUs](#)

Noëlle Lachaussée, François Angoulvant & Stéphane Dager

Pediatric Anesthesia [Volume 27, Issue 12](#)

[Nurse-driven analgesia and sedation in pediatric patients with univentricular hearts requiring extracorporeal life support after first-stage palliation surgery: A pilot study](#)

Jörg Michel, Michael Hofbeck, Ines Gerbig, Vanya Icheva, Ellen Heimberg, Walter Jost, Christian Schlensak, Matthias Kumpf, Gunnar Blumenstock and Felix Neunhoeffler

Version of Record online: 24 OCT 2017 | DOI: 10.1111/pan.13274

[A quality improvement initiative to increase the safety of pediatric emergency airway management](#)

Elliot Long, Domenic R. Cincotta, Joanne Grindlay, Stefano Sabato, Emmanuelle Fauteux-Lamarre, David Beckerman, Terry Carroll and Nuala Quinn, On behalf of the Pediatric Research in Emergency Departments International Collaborative (PREDICT)

Version of Record online: 24 OCT 2017 | DOI: 10.1111/pan.13275

[Role of ultrasound measuring position and ventilation pressure in determining correct tube size in children](#)

Christoph Schramm, Luzie S. Eisleben, Jens Kessler, Katrin Jensen and Konstanze Plaschke
Version of Record online: 24 OCT 2017 | DOI: 10.1111/pan.13267

Pediatric Anesthesia [Volume 27, Issue 11](#)

[Pharmacokinetics of S-ketamine during prolonged sedation at the pediatric intensive care unit \(pages 1098–1107\)](#)

Robert B. Flint, Carole N. M. Brouwer, Anne S. C. Kränzlin, Loraine Lie-A-Huen, Albert P. Bos and Ron A. A. Mathôt

Version of Record online: 13 OCT 2017 | DOI: 10.1111/pan.13239

[Pediatric estimating endotracheal tube “4-3-2-1”: A mnemonic for an age-based endotracheal tube selection \(pages 1166–1167\)](#)

Jeremy H. Tsui and Ban C. H. Tsui

Version of Record online: 13 OCT 2017 | DOI: 10.1111/pan.13231

Pediatric Critical Care Medicine [Volume 18, Issue 10](#)

[Time of Admission to the PICU and Mortality*](#)

McCrary, Michael C.; Spaeder, Michael C.; Gower, Emily W.; Nakagawa, Thomas A.; Simpson, Sean L.; Coleman, Mary A.; Morris, Peter E.



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PEDIATRIC RESUSCITATION

Video laryngoscopy for endotracheal intubation of critically ill children (October 2017)

The role of video laryngoscopy (VL, providing indirect laryngoscopy and a display of the glottic view on video monitor) for endotracheal intubation in children has been uncertain. In prior studies comparing VL with direct laryngoscopy (DL) for intubation of non-critically ill children by experienced providers, intubation times were longer for VL and adverse events and successful first pass rates were not improved. A new observational report, based on data from an international registry of airway management in pediatric intensive care units, compares outcomes for over 900 endotracheal intubations using VL with 8875 intubations performed by DL, although children were not randomized to undergo VL or DL and thus likely to have had differing prognostic characteristics [23]. VL was associated with fewer tracheal intubation adverse events (eg, mainstem bronchial intubation, recognized esophageal intubation, or vomiting without aspiration) but not fewer severe events (eg, cardiac arrest, laryngospasm, esophageal intubation with delayed recognition, or aspiration) or need for multiple (≥ 3) attempts. Based on this and evidence from other studies, VL may improve the chance of successful intubation in children with difficult airways (eg, limited mouth opening, cervical spine immobility, or severe micrognathia) but may have less benefit when compared with DL for intubation of children with otherwise normal airways. (See ["Devices for difficult endotracheal intubation in children", section on 'Efficacy'.](#))

Diagnostic approach to constipation impacts pediatric emergency department disposition.

Author(s): Chumpitazi, Corrie E; Rees, Chris A; Camp, Elizabeth A; Henkel, Erin B; Valdez, Karina L; Chumpitazi, Bruno P

Source: The American journal of emergency medicine; Oct 2017; vol. 35 (no. 10); p. 1490-1493

Publication Date: Oct 2017

Publication Type(s): Journal Article

PubMedID: 28460807

Abstract:OBJECTIVESConstipation is a common cause of abdominal pain in children presenting to the emergency department (ED). The objectives of this study were to determine the diagnostic evaluation undertaken for constipation and to assess the association of the evaluation with final ED disposition.METHODSA retrospective chart review of children presenting to the pediatric ED of a quaternary care children's hospital with abdominal pain that received a soap suds enema therapy.RESULTSA total of 512 children were included, 270 (52.7%) were female, and the median age was 8.0 (IQR: 4.0-11.0). One hundred and thirty eight patients (27%) had a digital rectal exam (DRE), 120 (22.8%) had bloodwork performed, 218 (43%) had urinalysis obtained, 397 (77.5%) had abdominal radiographs, 120 (23.4%) had abdominal ultrasounds, and 18 (3.5%) had computed tomography scans. Children who had a DRE had a younger median age (6.0, IQR: 3.0-9.25 vs. 8.0, IQR: 4.0-12.0; $p<0.001$) and were significantly less likely to have radiologic imaging (OR=0.50, 95% CI 0.32-0.78; $p=0.002$), but did not have an increased odds of being discharged home. After adjusting for gender, ethnicity, and significant past medical history those with an abdominal radiograph were less likely to be discharged to home (aOR=0.56, 95% CI 0.31-1.01; $p=0.05$).CONCLUSIONSThe diagnostic evaluation of children diagnosed with fecal impaction in the ED varied. Abdominal imaging may be avoided if children receive a DRE. When children presenting to the ED with abdominal pain had an abdominal radiograph, they were more likely to be admitted.

Database: Medline

Risk Factors for Adverse Events in Emergency Department Procedural Sedation for Children.

Author(s): Bhatt, Maala; Johnson, David W; Chan, Jason; Taljaard, Monica; Barrowman, Nick; Farion, Ken J; Ali, Samina; Beno, Suzanne; Dixon, Andrew; McTimoney, C Michelle; Dubrovsky, Alexander Sasha; Sourial, Nadia; Roback, Mark G; Sedation Safety Study Group of Pediatric Emergency Research Canada (PERC)

Source: JAMA pediatrics; Oct 2017; vol. 171 (no. 10); p. 957-964

Publication Date: Oct 2017

Publication Type(s): Multicenter Study Journal Article Observational Study

PubMedID: 28828486

Available at [JAMA pediatrics](#) - from EBSCO (MEDLINE Complete)

Abstract:ImportanceProcedural sedation for children undergoing painful procedures is standard practice in emergency departments worldwide. Previous studies of emergency department sedation are limited by their single-center design and are underpowered to identify risk factors for serious

adverse events (SAEs), thereby limiting their influence on sedation practice and patient outcomes. **Objective**To examine the incidence and risk factors associated with sedation-related SAEs. **Design, Setting, and Participants**This prospective, multicenter, observational cohort study was conducted in 6 pediatric emergency departments in Canada between July 10, 2010, and February 28, 2015. Children 18 years or younger who received sedation for a painful emergency department procedure were enrolled in the study. Of the 9657 patients eligible for inclusion, 6760 (70.0%) were enrolled and 6295 (65.1%) were included in the final analysis. **Exposures**The primary risk factor was receipt of sedation medication. The secondary risk factors were demographic characteristics, preprocedural medications and fasting status, current or underlying health risks, and procedure type. **Main Outcomes and Measures**Four outcomes were examined: SAEs, significant interventions performed in response to an adverse event, oxygen desaturation, and vomiting. **Results**Of the 6295 children included in this study, 4190 (66.6%) were male and the mean (SD) age was 8.0 (4.6) years. Adverse events occurred in 736 patients (11.7%; 95% CI, 6.4%-16.9%). Oxygen desaturation (353 patients [5.6%]) and vomiting (328 [5.2%]) were the most common of these adverse events. There were 69 SAEs (1.1%; 95% CI, 0.5%-1.7%), and 86 patients (1.4%; 95% CI, 0.7%-2.1%) had a significant intervention. Use of ketamine hydrochloride alone resulted in the lowest incidence of SAEs (17 [0.4%]) and significant interventions (37 [0.9%]). The incidence of adverse sedation outcomes varied significantly with the type of sedation medication. Compared with ketamine alone, propofol alone (3.7%; odds ratio [OR], 5.6; 95% CI, 2.3-13.1) and the combinations of ketamine and fentanyl citrate (3.2%; OR, 6.5; 95% CI, 2.5-15.2) and ketamine and propofol (2.1%; OR, 4.4; 95% CI, 2.3-8.7) had the highest incidence of SAEs. The combinations of ketamine and fentanyl (4.1%; OR, 4.0; 95% CI, 1.8-8.1) and ketamine and propofol (2.5%; OR, 2.2; 95% CI, 1.2-3.8) had the highest incidence of significant interventions. **Conclusions and Relevance**The incidence of adverse sedation outcomes varied significantly with type of sedation medication. Use of ketamine only was associated with the best outcomes, resulting in significantly fewer SAEs and interventions than ketamine combined with propofol or fentanyl.

Database: Medline

Emergency department attendance following 4-component meningococcal B vaccination in infants.

Author(s): Kapur, Sarah; Bourke, Thomas; Maney, Julie-Ann; Moriarty, Paul

Source: Archives of disease in childhood; Oct 2017; vol. 102 (no. 10); p. 899-902

Publication Date: Oct 2017

Publication Type(s): Journal Article

PubMedID: 28637642

Available at [Archives of disease in childhood](#) - from BMJ Journals

Abstract:INTRODUCTIONIn September 2015, the UK became the first country in the world to introduce the 4-component meningococcal B vaccine(4CMenB) into the routine vaccine schedule for infants. 4CMenB is known to cause fever in infants. Infants presenting with fever, particularly those under 3 months, have a significant risk of serious bacterial infection(SBI).METHODBetween September 2015 and January 2016, we performed a prospective audit of management of infants between 30 and 180 days attending the regional paediatric emergency department(ED) in Northern

Ireland, within 4 days of receiving 4CMenB. RESULTS 35 ED attendances in infants aged 30-180 days were due to symptoms occurring after primary vaccinations including 4CMenB, representing an estimated 0.8% of the vaccinated population in the catchment area. 86% of infants presented after the first vaccine and parents reported giving paracetamol to 94% of infants. 80% of infants presented with fever. Blood tests were performed in 62% of infants and leucocytosis was present in 73%. All cultures taken were negative and 51% were admitted to hospital. 100% of final diagnoses were vaccine related (diagnosis made by exclusion). DISCUSSION In this study, an estimated 0.8% of the vaccinated population in the catchment area attended ED with symptoms occurring after primary vaccinations including 4CMenB. Infants with fever have a higher risk of SBI, but infants with fever in the post-vaccination period may not have the same risk. Further data are essential to inform national guidelines on investigation and management of fever in infants following vaccination with 4CMenB, possibly incorporating a less-invasive approach.

Database: Medline



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