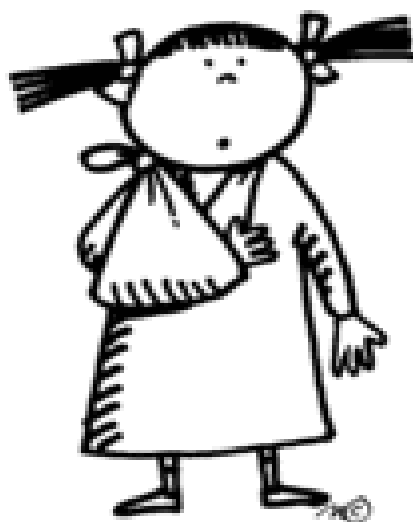


Paediatric Emergency Department

Evidence Update



August 2017

Respecting everyone
Embracing change
Recognising success
Working together
Our hospitals.



Training Calendar 2017

All sessions are one hour

August (12.00-13.00)

Thu 24th Critical Appraisal

September (13.00-14.00)

Fri 1st Literature Searching

Mon 4th Critical Appraisal

Tue 12th Interpreting Statistics

Wed 20th Literature Searching

Thu 28th Critical Appraisal

Your Outreach Librarian – **Helen Pullen**

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Outreach: Your Outreach Librarian can help facilitate evidence-based practice for all in the team, as well as assisting with academic study and research. We also offer one-to-one or small group training in **literature searching, critical appraisal and medical statistics**. Get in touch: library@uhbristol.nhs.uk

Literature searching: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a one-to-one session where we can guide you through the process of creating a well-focused literature research. Please email requests to library@uhbristol.nhs.uk

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

6. The Effect of Bedside Ultrasonographic Skin Marking on Infant Lumbar Puncture Success: A Randomized Controlled Trial.

Author(s): Neal, Jeffrey T; Kaplan, Summer L; Woodford, Ashley L; Desai, Krishna; Zorc, Joseph J; Chen, Aaron E

Source: Annals of emergency medicine; May 2017; vol. 69 (no. 5); p. 610

Abstract: STUDY OBJECTIVE Lumbar puncture is a commonly performed procedure, although previous studies have documented low rates of successful completion in infants. Ultrasonography can visualize the anatomic landmarks for lumbar puncture and has been shown in some studies to reduce the failure rate of lumbar puncture in adults. We seek to determine whether ultrasonography-assisted site marking increases success for infant lumbar punctures. METHODSThis was a prospective, randomized, controlled trial in an academic pediatric emergency department (ED). We enrolled a convenience sample of infants younger than 6 months between June 2014 and February 2016 and randomized them to either a traditional lumbar puncture arm or an ultrasonography-assisted lumbar puncture arm. Infants in the ultrasonography arm received bedside ultrasonography of the spine by one of 3 study sonographers before lumbar puncture, during which the conus medullaris and most appropriate intervertebral space were identified and marked. The lumbar puncture was then performed by the predetermined ED provider. Our primary outcome was successful first-attempt lumbar puncture. Subjects were considered to have a successful lumbar puncture if cerebrospinal fluid was obtained and RBC counts were less than 1,000/mm³. All outcomes were assessed by intention-to-treat analysis. RESULTSOne hundred twenty-eight patients were enrolled, with 64 in each arm. No differences between the 2 arms were found in the baseline characteristics of the study subjects and providers, except for sex and first-attempt position. The first-attempt success rate was higher for the ultrasonography arm (58%) versus the traditional arm (31%) (absolute risk difference 27% [95% CI 10% to 43%]). Success within 3 attempts was also higher for the ultrasonography arm (75%) versus the traditional arm (44%) (absolute risk difference 31% [95% CI 15% to 47%]). On average, performing bedside ultrasonography on 4 patients (95% CI 2.1 to 6.6) resulted in 1 additional successful lumbar puncture. CONCLUSIONUltrasonography-assisted site marking improved infant lumbar puncture success in a tertiary care pediatric teaching hospital. This method has the potential to reduce unnecessary hospitalizations and exposures to antibiotics in this vulnerable population.

Database: Medline

7. Faster clean catch urine collection (Quick-Wee method) from infants: randomised controlled trial.

Author(s): Kaufman, Jonathan; Fitzpatrick, Patrick; Tosif, Shidan; Hopper, Sandy M; Donath, Susan M; Bryant, Penelope A; Babl, Franz E

Source: BMJ (Clinical research ed.); Apr 2017; vol. 357 ; p. j1341

PubMedID: 28389435

Available in full text at [The BMJ](#) - from Highwire Press

Abstract:Objective To determine if a simple stimulation method increases the rate of infant voiding for clean catch urine within five minutes.Design Randomised controlled trial.Setting Emergency department of a tertiary paediatric hospital, Australia.Participants 354 infants (aged 1-12 months) requiring urine sample collection as determined by the treating clinician. 10 infants were subsequently excluded.Interventions Infants were randomised to either gentle suprapubic cutaneous stimulation (n=174) using gauze soaked in cold fluid (the Quick-Wee method) or standard clean catch urine with no additional stimulation (n=170), for five minutes.Main outcome measures The primary outcome was voiding of urine within five minutes. Secondary outcomes were successful collection of a urine sample, contamination rate, and parental and clinician satisfaction with the method.Results The Quick-Wee method resulted in a significantly higher rate of voiding within five minutes compared with standard clean catch urine (31% v 12%, $P<0.001$), difference in proportions 19% favouring Quick-Wee (95% confidence interval for difference 11% to 28%). Quick-Wee had a higher rate of successful urine sample collection (30% v 9%, $P<0.001$) and greater parental and clinician satisfaction (median 2 v 3 on a 5 point Likert scale, $P<0.001$). The difference in contamination between Quick-Wee and standard clean catch urine was not significant (27% v 45%, $P=0.29$). The number needed to treat was 4.7 (95% confidence interval 3.4 to 7.7) to successfully collect one additional urine sample within five minutes using Quick-Wee compared with standard clean catch urine.Conclusions Quick-Wee is a simple cutaneous stimulation method that significantly increases the five minute voiding and success rate of clean catch urine collection.Trial registration Australian New Zealand Clinical Trials Registry ACTRN12615000754549.

Database: Medline

[Reducing patient waiting time and length of stay in an Acute Care Pediatric Emergency Department.](#)

Al-Onazi M. BMJ Quality Improvement

Reports 2017;6(1):doi.org/10.1136/bmjquality.u212356.w7916.

Published on 26/7/2017

[Effect of Abdominal Ultrasound on Clinical Care, Outcomes, and Resource Use Among Children With Blunt Torso Trauma: A Randomized Clinical Trial.](#)

JAMA

TOP TEN PAEDIATRIC PAPERS 2016

ROYAL SOCIETY MEDICINE EM/ PAEDIATRIC COLLABORATIVE MEETING JUNE 13TH 2017

UK Consensus among PEM Consultants Nationwide

Compiled and reviewed by Dr Ian Maconochie, PEM Consultant St Mary's Hospital, Imperial College London

[Kids Save Lives- ERC position statement on school children education in CPR](#)

Resuscitation, 2016-08-01, Volume 105, pages A1-A3

[Association between Tracheal Intubation during Paediatric- In-hospital Cardiac Arrest and Survival](#)

JAMA 2016; 316 (17) 1786-1797

[Effect of Dilute Apple Juice and Preferred Fluids vs Electrolyte Maintenance Solution on Treatment Failure among Children with Mild Gastroenteritis: A Randomized Clinical Trial](#)

JAMA. 2016;315(18):1966-1974 Freedman SB, Willan AR, Boutis K, Schuh S

[Conventional Versus Compression-Only Versus No-Bystander Cardiopulmonary Resuscitation for Paediatric Out-of-Hospital Cardiac Arrest.](#)

Circulation. 2016 Dec 20;134(25):2060-2070.

Fukuda T, Ohashi-Fukuda N, Kobayashi H, Gunshin M, Sera T, Kondo Y, Yahagi N.

[Effect of oxygen desaturations on subsequent medical visits in infants discharged from ED with bronchiolitis](#)

Principi T, Coates A, Parkin P, et al. JAMA Pediatr. Feb 2016

[Elaboration of a risk map in a Paediatric Emergency Department of a Teaching Hospital](#)

EMJ Online Sept 20th 2016; E Mojica et al

[Brief Resolved Unexplained Events \(formerly Apparent Life- Threatening Events\) and Evaluation of Lower Risk Infants](#)

Clinical Practice Guideline, Guidance for the Clinician in Rendering Paediatric Care, American Academy of Pediatrics, Joel S Tieder et al

P. Brasil, J. Pereira, M. Moreira, et al N Engl J Med 2016; 375:2321-2334

[The QuickWee trial: protocol for a randomised controlled trial of gentle suprapubic cutaneous stimulation to hasten non-invasive urine collection from infants.](#)

BMJ 2017, Kaufman J, Fitzpatrick P, Tosif S, Hopper SM, Bryant PA, Donath SM, Babi FE.

[Interventions for paediatric surgery patients with comorbid autism spectrum disorder: a systematic literature review.](#)

Arch Dis Child. 2016 Dec; 101(12):1090-1094. Koski S, Gabriels R, Beresford

Latest Evidence

UpToDate®

OpenAthens login required. Register here: <https://openathens.nice.org.uk/>

EMERGENCY MEDICINE

Home use of topical anesthesia to control pain from corneal abrasions (August 2017)

In a retrospective study of 444 patients with corneal abrasions given a 24-hour supply of topical [tetracaine](#) at the initial emergency department visit, there were no documented serious complications or uncommon adverse events [36]. However, definitive outcomes were only known for 120 patients who returned for rechecks. Patients receiving topical tetracaine were more likely to return for emergency department reevaluation compared with patients who did not receive tetracaine. Topical analgesia was prescribed inappropriately in one-third of patients, for lesions other than simple corneal abrasion (eg, large corneal abrasions, retained rust rings, herpes keratitis, anterior uveitis, and corneal erosions). Because of the possibility of overuse (ie, use beyond 24 hours) and the risk of inappropriate administration, we favor other means of pain control and discourage the prescribing of topical anesthetic agents. More evidence is needed to establish the safety of this practice in patients with simple corneal abrasions. (See "[Corneal abrasions and corneal foreign bodies: Management](#)", section on 'Pain control'.)

The Pediatric Sedation State Scale to assess pediatric procedural sedation (July 2017)

The Pediatric Sedation State Scale (PSSS) identifies six levels of sedation based on patient behavior (including patient interference with the procedure and need for restraint) and physiologic parameters ([table 3](#)). The PSSS is derived from expert opinion and has been validated, using a small sample of patients and observers, with high inter- and intra-observer agreement [37]. Scales that simply measure the depth of sedation track only one aspect of this practice and do not assess key findings that identify whether the goals of procedural sedation are met. We suggest the use of the PSSS to provide a simple and rapid means of effectively documenting and communicating the quality of pediatric sedation. (See "[Procedural sedation in children outside of the operating room](#)", section on 'Sedation state'.)

Delay of appendectomy up to 24 hours not related to appendiceal perforation in children with appendicitis (June 2017)

In the past, appendicitis has been considered a surgical emergency that requires prompt

appendectomy to avoid perforation and other complications. In a multicenter, prospective observational study of 955 children 3 to 18 years of age, all of whom were treated with appendectomy for appendicitis within 24 hours of arrival to the emergency department, duration of time between initial evaluation and operation was not associated with an increase in appendiceal perforation [38]. This study adds to a growing body of evidence that suggests that adverse outcomes are **not** increased for children who receive timely administration of antibiotics and undergo appendectomy less than 24 hours after diagnosis. (See "[Acute appendicitis in children: Management](#)", section on 'Timing of operation'.)



[Pre-admission antibiotics for suspected cases of meningococcal disease.](#)
Cochrane Database Syst Rev



KnowledgeShare

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Provides regular, targeted, personalised evidence updates to staff, based on their specific professional interests. Subject-specific bulletins can also be produced.

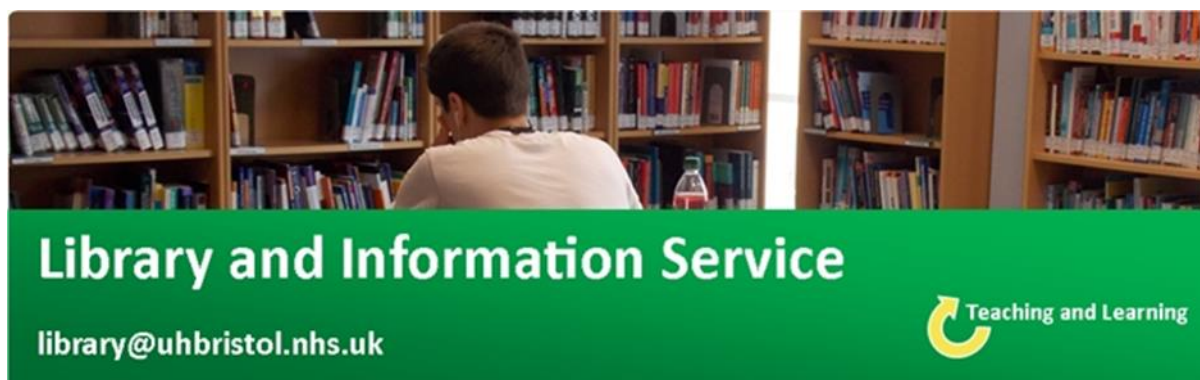
Targeted evidence updates

These are individualised, based on a staff member's interest in particular conditions or lifestyle factors, age groups, settings of care, interventions and management topics.

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