Outreach

Your Outreach Librarian can help facilitate evidence-based practise for all PICU staff, as well as assisting with academic study and research. We can help with literature searching, obtaining journal articles and books, and setting up individual current awareness alerts.

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 1 to 1 session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence.

Critical Appraisal Training

We also offer one-to-one or small group training in literature searching, accessing electronic journals, and critical appraisal/Statistics. These are essential courses that teach how to interpret clinical papers.

For more information, email: katie.barnard@uhbristol.nhs.uk

Books

Books can be searched for using SWIMS our online catalogue at www.swims.nhs.uk. Books and journals that are not available on site or electronically may be requested from other locations. Please email requests to: library@uhbristol.nhs.uk
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April 2016, Volume 22, Issue 2

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March 2016, Volume 170 p1-350

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American Journal of Respiratory and Critical Care Medicine
March 2016, Volume 193, Issue 5

Pediatric High-Frequency Oscillation. The End of the Road?
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2016, Volume 20

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Critical Care Medicine
March 2016, Volume 44, Issue 3

The Preschool Confusion Assessment Method for the ICU: Valid and Reliable Delirium Monitoring for Critically Ill Infants and Children*
Smith, Heidi A. B. et al.

Delirium in Preschool Children: Diagnostic Challenge, Piece of Cake, or Both?*
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Pediatric Anesthesia
March 2016, Volume 26, Issue 3

Cardiology in the Young
February 2016, Volume 26, Issue 2

European Journal of Pediatrics
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New Nice Guidance

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Latest relevant Systematic Reviews from the Cochrane Library

Frequency of dressing changes for central venous access devices on catheter-related infections

Antiemetic medication for prevention and treatment of chemotherapy-induced nausea and vomiting in childhood

Chest physiotherapy for acute bronchiolitis in paediatric patients between 0 and 24 months old

Upcoming Lunchtime Drop-in Sessions

The Library and Information Service provides free specialist information skills training for all UHBristol staff and students. To book a place, email: library@uhbristol.nhs.uk

If you’re unable to attend we also provide one-to-one or small group sessions. Contact library@uhbristol.nhs.uk or katie.barnard@uhbristol.nhs.uk to arrange a session.

**March** (1pm)

- Thurs 3rd: Literature Searching
- Fri 11th: Understanding articles
- Mon 14th: Statistics
- Tues 22nd: Information resources
- Weds 30th: Literature Searching

**April** (12pm)

- Thurs 7th: Understanding articles
- Fri 15th: Statistics
- Mon 18th: Information resources
- Tues 26th: Literature Searching
Quick Exercise

Match the study design with the timeframe it covers.

1. Randomised Controlled Trial
2. Cross-Sectional Study
3. Case-control Study
4. Cohort Study
5. Case Report

Find out more about study designs in one of our Understanding Articles training sessions. For more details, email library@uhbristol.nhs.uk.
**Title:** Stress induced gastrointestinal bleeding in a pediatric intensive care unit: which risk factors should necessitate prophylaxis?

**Citation:** Minerva pediatrica, Feb 2016, vol. 68, no. 1, p. 19-26, 1827-1715 (February 2016)

**Author(s):** Sahin, Sanliay, Ayar, Ganime, Mutlu, U, Koksal, Tulin, Akman, Alkin O, Gunduz, Razin C, Kirsacoglu, Ceyda T, Gulerman, Fulya

**Abstract:** The aim of this study was to determine the frequency and the risk factors of stress induced gastrointestinal bleeding (GIB) in critically ill children, and to investigate the effect of prophylaxis. The setting was a 14-bedded, tertiary care PICU. Records of 182 children admitted consecutively from December 2012 to May 2013 were retrospectively reviewed. 136 patients were eligible. The age ranged from 40 days to 18 years. Diagnosis, demographic data, risk factors, administration of prophylaxis, drugs used in medication, presence and degree of GIB and complications were recorded. The male-female ratio was 1.3. Mean age was 5.9. Mean PRISM III score was 12.2 and 49.3% had PRISM Score ≥10. Most frequent diagnosis was infectious diseases. Sixtyone (44.9%) children received prophylaxis in which antacids was used in 28 (45.9%), sucralfate in 18 (29.5%), proton pomp inhibitors (PPIs) in 51 (83.6%) and 5 (8.2%) received H2 reserctor antagonist. The incidence of GIB was 15.4% (N.=21), in which 66.7% (N.=14) were mild, 23.8% (N.=5) were moderate, 4.8% (N.=1) was significant and 4.8% (N.=1) was massive. In children who received prophylaxis 17 (27.9%) cases developed GIB. Mechanical ventilation was found to be the only risk factor significantly associated with stress induced GIB. Also; mechanical ventilation and trauma was strongly significant (P<0.001) and coagulopathy/thrombocytopenia, PRISM III ≥10, renal and hepatic failure, hypotension, and heart failure/ arrhythmia was found to be associated with the development of GIB in critically ill children (P<0.05). GIB is a serious concern for PICU clinicians and intensivists are confused about the conflicting evidence supporting prophilaxis. We believe that prophylaxis could be beneficial for mechanically ventilated children. Also trauma, coagulopathy/thrombocytopenia, PRISM III≥10, renal and hepatic failure, hypotension, and heart failure/arrhythmia must be kept in mind as risk factors requiring attention in PICU setting.

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**Title:** Vitamin D deficiency in critically ill children with sepsis.

**Citation:** Paediatrics and international child health, Feb 2016, vol. 36, no. 1, p. 15-21, 2046-9055 (February 2016)

**Author(s):** Ponnarmeni, Satheesh, Kumar Angurana, Suresh, Singhi, Sunit, Bansal, Arun, Dayal, Devi, Kaur, Rajdeep, Patial, Ajay, Verma Attri, Savita

**Abstract:** Data on the prevalence of vitamin D deficiency (VDD) in critically ill children with sepsis and its association with illness severity and outcome are limited. To investigate the prevalence of VDD in critically ill children with sepsis. One hundred and twenty-four critically ill children with sepsis aged 1-12 years were prospectively enrolled in a paediatric intensive care unit (PICU) in North India over a 1-year period. Demographic data, clinical signs and risk factors for VDD, Paediatric Index of Mortality III (PRISM III) score, and sequential organ failure assessment (SOFA) score were recorded.
Plasma 25-hydroxy vitamin D [25(OH)D] levels were measured by ELISA within 24 hours of admission. The occurrence of septic shock, multiple organ dysfunction syndrome (MODS) and healthcare-associated infection (HCAI), need for mechanical ventilation and catecholamines, length of PICU stay and mortality were also recorded. Cases were compared with 338 apparently healthy children for baseline variables and vitamin D status. Prevalence of VDD [25(OH)D level < 50 nmol/L] was higher among critically ill children with sepsis compared to healthy controls (50.8% vs 40.2%, P = 0.04). VDD was not associated with any significant difference in baseline demographic variables or risk factors for VDD. Although there was a trend toward increased PRISM III score, septic shock, MODS, HCAI, need for mechanical ventilation and catecholamines, length of PICU stay, and mortality, the difference was not statistically significant. A high prevalence of VDD in critically ill children with sepsis was found but it was not associated with greater severity of illness or other clinical outcomes.

Title: Safety of Enteral Feedings in Critically Ill Children Receiving Vasoactive Agents.

Citation: JPEN. Journal of parenteral and enteral nutrition, Feb 2016, vol. 40, no. 2, p. 236-241, 0148-6071 (February 2016)

Author(s): Panchal, Apurva K, Manzi, Jennifer, Connolly, Susan, Christensen, Melissa, Wakeham, Martin, Goday, Praveen S, Mikhailov, Theresa A

Abstract: The objective of this retrospective study was to evaluate the safety of enteral feeding in children receiving vasoactive agents (VAs). Patients aged 1 month to 18 years with a pediatric intensive care unit stay for ≥96 hours during 2007 and 2008 who received any VA (epinephrine, norepinephrine, vasopressin, milrinone, dopamine, and dobutamine) were included and categorized into fed and nonfed groups. Their demographics, clinical characteristics, type and dose of VA, and presence of gastrointestinal (GI) outcomes were obtained. GI outcomes were compared between the groups by the χ(2) test, Mann-Whitney test, and logistic regression. In total, 339 patients were included. Of these, 55% were in the fed group and 45% in the nonfed group. Patients in the fed group were younger (median age, 1.05 vs 2.75 years, respectively; P < .001) and tended to have a lower Pediatric Index of Mortality 2 (PIM2) risk of mortality (ROM) than those in the nonfed group (median, 3.33% vs 3.52%, respectively; P = .106). Mortality was lower in the fed group than the nonfed group (6.9% vs 15.9%, respectively; odds ratio [OR], 0.39; 0.18-0.84; P < .01, 95% CI), while GI outcomes did not differ between the groups. The vasoactive-inotropic score (VIS) did not differ between the groups except on day 1 (P = .017). The ROM did not differ between the groups after adjusting for age, PIM2 ROM, and VIS on day 1 (OR, 0.58; 0.26-1.28; P = .18, 95% CI). Enteral feeding in patients receiving VAs is associated with no difference in GI outcomes and a tendency towards lower mortality. Prospective studies are required to confirm the safety of enteral feedings in patients receiving VAs. © 2014 American Society for Parenteral and Enteral Nutrition.

Title: Parental Sources of Support and Guidance When Making Difficult Decisions in the Pediatric Intensive Care Unit.

Citation: The Journal of pediatrics, Feb 2016, vol. 169, p. 221, 1097-6833 (February 2016)

Author(s): Madrigal, Vanessa N, Carroll, Karen W, Faerber, Jennifer A, Walter, Jennifer K, Morrison, Wynne E, Feudtner, Chris
Abstract: To assess sources of support and guidance on which parents rely when making difficult decisions in the pediatric intensive care unit and to evaluate associations of sources of support and guidance to anxiety, depression, and positive and negative affect. This was a prospective cohort study of 86 English-speaking parents of 75 children in the pediatric intensive care unit at The Children's Hospital of Philadelphia who were hospitalized greater than 72 hours. Parents completed standardized instruments and a novel sources of support and guidance assessment. Most parents chose physicians, nurses, friends, and extended family as their main sources of support and guidance when making a difficult decision. Descriptive analysis revealed a broad distribution for the sources of support and guidance items related to spirituality. Parents tended to fall into 1 of 2 groups when we used latent class analysis: the more-spiritual group (n = 47; 55%) highly ranked “what my child wants” (P = .023), spouses (P = .002), support groups (P = .003), church community (P < .001), spiritual leader (P < .001), higher power (P < .001), and prayer (P < .001) compared with the less-spiritual group (n = 39; 45%). The more-spiritual parents had greater positive affect scores (P = .005). Less-spiritual parents had greater depression scores (P = .043). Parents rely most on physicians, nurses, and friends and extended family when making difficult decisions for their critically ill child. Respondents tended to fall into 1 of 2 groups where the more-spiritual respondents were associated with greater positive affect and may be more resistant to depression. Copyright © 2016 Elsevier Inc. All rights reserved.

Title: Use of Daptomycin in Critically Ill Children With Bloodstream Infections and Complicated Skin and Soft-tissue Infections.

Citation: The Pediatric infectious disease journal, Feb 2016, vol. 35, no. 2, p. 180-182, 1532-0987 (February 2016)

Author(s): Tedeschi, Sara, Tumietto, Fabio, Conti, Matteo, Giannella, Maddalena, Viale, Pierluigi, S. Orsola Antimicrobial Stewardship Team

Abstract: We report our clinical experience with the use of daptomycin, administered in the dosage of 8 mg/kg/d in 3 minutes, in treating 12 critically ill children younger than 12 years, with bloodstream infections (n = 9) and complicated skin and soft-tissue infections (n = 3). Mean treatment duration was 14 ± 5 days; microbiologic eradication was achieved in all patients, and no drug related adverse events occurred.

Title: Serum Albumin Is an Independent Predictor of Clinical Outcomes in Critically Ill Children.

Citation: Pediatric critical care medicine : a journal of the Society of Critical Care Medicine and the World Federation of Pediatric Intensive and Critical Care Societies, Feb 2016, vol. 17, no. 2, p. e50., 1529-7535 (February 2016)

Author(s): Leite, Heitor Pons, Rodrigues da Silva, Alessandra Vaso, de Oliveira Iglesias, Simone Brasil, Koch Nogueira, Paulo Cesar

Abstract: Serum albumin is a strong biomarker of disease severity and prognosis in adult patients. In contrast, its value as predictor of outcome in critically ill children has not been established. We aimed to determine whether admission hypoalbuminemia is associated with outcome in a general pediatric population of critically ill patients, taking into account the inflammatory response, disease severity, and nutritional status of the patient. Analysis of prospectively collected database. PICU of a teaching hospital. Two hundred seventy-one patients consecutively admitted. Neonates, patients
with chronic liver or kidney disease, inborn errors of metabolism, those who received prior administration of albumin solution, and readmissions were excluded. Outcome variables were 60-day mortality, probability of ICU discharge at 60 days, and ventilator-free days. Potential exposure variables for the outcome were sex, age, nutritional status, albumin, C-reactive protein and serum lactate at admission, and Pediatric Index of Mortality 2 score. Admission hypoalbuminemia was present in 64.2% of patients. After adjustment for confounding factors, only serum lactate, Pediatric Index of Mortality 2 score, and serum albumin were associated with higher mortality: the increase of 1.0 g/dL in serum albumin at admission resulted in a 73% reduction in the hazard of death (hazard ratio, 0.27; 95% CI, 0.14-0.51; p < 0.001). The increase of 1 g/dL in serum albumin was also independently associated with a 33% rise in the probability of ICU discharge (subhazard ratio, 1.33; 95% CI, 1.07-1.64; p = 0.008) and increased ventilator-free-days (odds ratio, 1.86; 95% CI, 0.56-3.16; p = 0.005). Hypoalbuminemia at admission to a PICU is associated with higher 60-day mortality, longer duration of mechanical ventilation, and lower probability of ICU discharge. These associations are independent of the magnitude of inflammatory response, clinical severity, and nutritional status.

Title: Pediatric Intensive Care in PICUs and Adult ICUs: A 2-Year Cohort Study in Finland.


Author(s): Peltoniemi, Outi M, Rautiainen, Paula, Kataja, Janne, Ala-Kokko, Tero

Abstract: To investigate the association between the type of ICU and mortality for children treated at PICUs and adult ICUs. This was a national multicenter cohort study. Data were collected from electronic critical care data management systems at 3 units and from national intensive care registries at 26 units. We assessed the incidence of admissions, length of stay at ICUs, main diagnoses, and mortality for children at ICUs. Units were categorized as PICUs or as adult ICUs located at university hospitals or at non-academic central hospitals. Children younger than 17 years of age treated at ICUs in Finland. Not applicable. There were 4,876 admissions from 2009 to 2010, and 98.9% of patients survived until unit discharge. The mean length of stay was 3.0 ± 7.4 days; 1,395 patients (35%) required mechanical ventilation at PICUs versus 167 (35%) at adult university hospital ICUs versus 79 (19%) at central hospital ICUs (p < 0.001). The odds for mortality in univariate regression analysis were emergency admission (odds ratio, 3.99; 95% CI, 1.82-8.76), cardiovascular (odds ratio, 7.84; 95% CI, 3.49-22.88), gastrointestinal (odds ratio, 5.37; 95% CI, 1.45-19.88), acute infections (odds ratio, 2.83; 95% CI, 1.23-6.48), hematologic/oncologic disease (odds ratio, 10.32; 95% CI, 3.14-33.86), and nonsurgical trauma (odds ratio, 3.53; 95% CI, 1.19-10.41). Treatment at adult ICUs had higher odds of mortality compared with PICUs (university hospital: odds ratio, 3.93; 95% CI, 1.85-8.35 and central hospital: odds ratio, 3.91; 95% CI, 1.69-9.05), adjusted for readmission less than 48 hours after discharge, emergency admission, mechanical ventilation, and diagnostic group. Pediatric patients treated at PICUs showed lower mortality. Requirement of mechanical ventilation, emergency admission, and readmission less than 48 hours after discharge and cardiovascular, gastrointestinal, acute infections, hematologic/oncologic disease, and nonsurgical trauma were associated with higher risk of mortality.

Title: Efficacy of α2-Agonists for Sedation in Pediatric Critical Care: A Systematic Review.
Abstract: Children in PICUs normally require analgesics and sedatives to maintain comfort, safety, and cooperation with interventions. α2-agonists (clonidine and dexmedetomidine) have been described as adjunctive (or alternative) sedative agents alongside opioids and benzodiazepines. This systematic review aimed to determine whether α2-agonists were effective in maintaining patients at a target sedation score over time compared with a comparator group. We also aimed to determine whether concurrent use of α2-agonists provided opioid-sparing effects. A systematic search was performed using the Cochrane Central Register of Controlled Trials, PubMed, EMBASE, CINAHL, and LILACS. We included randomized controlled trials of children in PICU treated with clonidine or dexmedetomidine for the indication of sedation. Two authors independently screened articles for inclusion. Six randomized controlled trials with sufficient data were identified and critically appraised. Three clonidine trials (two vs placebo and one vs midazolam) and three dexmedetomidine trials (two vs fentanyl, one vs midazolam) were included. Due to study heterogeneity it was not possible to pool studies. A narrative synthesis is provided. Reporting of study results using the outcome ‘time maintained at target sedation score’ for clonidine or dexmedetomidine was poor. Only one trial compared clonidine with midazolam using a sedation score outcome. This study was underpowered to demonstrate equivalence to midazolam as a sedative. The adjunctive use of clonidine demonstrated significant decreases in opioid use in neonates but not in older groups. Clonidine dose was inconsistent between studies. Dexmedetomidine demonstrated an opioid-sparing effect in two small trials. Further studies, including dose-finding studies and studies with sedation score-based outcomes, are needed.
up imaging. A final diagnosis was made in 16 patients (84.2%). F-fluorodeoxyglucose PET/CT accurately localized the source of fever in 14 patients, confers to a sensitivity of 87.5% (14 of 16; 95% CI, 0.604-0.978). A false-positive scan in a patient led to subsequent unnecessary investigations. Two false-negative F-fluorodeoxyglucose PET/CT images were later attributed to relapse of underlying disease in the bone marrow and renal abscesses, respectively. In the other two patients where F-fluorodeoxyglucose PET/CT also showed negative findings, fever subsided shortly thereafter without treatment. Our preliminary experience suggests that F-fluorodeoxyglucose PET/CT may be clinically beneficial in evaluating fever of unknown origin in children with complicated underlying diseases mandating intensive support in ICUs if usual investigative methods are unsuccessful. Further large prospective studies are needed to validate these findings.

Title: Glutamine effects on heat shock protein 70 and interleukines 6 and 10: Randomized trial of glutamine supplementation versus standard parenteral nutrition in critically ill children.

Citation: Clinical nutrition (Edinburgh, Scotland), Feb 2016, vol. 35, no. 1, p. 34-40, 1532-1983 (February 2016)

Author(s): Jordan, Iolanda, Balaguer, Mònica, Esteban, M Esther, Cambra, Francisco José, Felipe, Aida, Hernández, Lluïsa, Alsina, Laia, Molero, Marta, Villaronga, Miquel, Esteban, Elisabeth

Abstract: To determine whether glutamine (Gln) supplementation would have a role modifying both the oxidative stress and the inflammatory response of critically ill children. Prospective, randomized, double-blind, interventional clinical trial. Selection criteria were children requiring parenteral nutrition for at least 5 days diagnosed with severe sepsis or post major surgery. Patients were randomly assigned to standard parenteral nutrition (SPN, 49 subjects) or standard parenteral nutrition with glutamine supplementation (SPN + Gln, 49 subjects). Glutamine levels failed to show statistical differences between groups. At day 5, patients in the SPN + Gln group had significantly higher levels of HSP-70 (heat shock protein 70) as compared with the SPN group (68.6 vs 5.4, p = 0.014). In both groups, IL-6 (interleukine 6) levels showed a remarkable descent from baseline and day 2 (SPN: 42.24 vs 9.39, p < 0.001; SPN + Gln: 35.20 vs 13.80, p < 0.001) but only the treatment group showed a statistically significant decrease between day 2 and day 5 (13.80 vs 10.55, p = 0.013). Levels of IL-10 (interleukine 10) did not vary among visits except in the SPN between baseline and day 2 (9.55 vs 5.356, p < 0.001). At the end of the study, no significant differences between groups for PICU and hospital stay were observed. No adverse events were detected in any group. Glutamine supplementation in critically-ill children contributed to maintain high HSP-70 levels for longer. Glutamine supplementation had no influence on IL-10 and failed to show a significant reduction of IL-6 levels. Copyright © 2015 Elsevier Ltd and European Society for Clinical Nutrition and Metabolism. All rights reserved.

Title: A randomized controlled trial of daily sedation interruption in critically ill children.

Citation: Intensive care medicine, Feb 2016, vol. 42, no. 2, p. 233-244, 1432-1238 (February 2016)

Author(s): Vet, Nienke J, de Wildt, Saskia N, Verlaat, Carin W M, Knibbe, Catherine A J, Mooij, Miriam G, van Woensel, Job B M, van Rosmalen, Joost, Tibboel, Dick, de Hoog, Matthijs

Abstract: To compare daily sedation interruption plus protocolized sedation (DSI + PS) to protocolized sedation only (PS) in critically ill children. In this multicenter randomized controlled trial in three pediatric intensive care units in the Netherlands, mechanically ventilated critically ill
children with need for sedative drugs were included. They were randomly assigned to either DSI + PS or PS only. Children in both study arms received sedation adjusted on the basis of validated sedation scores. Provided a safety screen was passed, children in the DSI + PS group received daily blinded infusions of saline; children in the PS group received blinded infusions of the previous sedatives/analgesics. If a patient’s sedation score indicated distress, the blinded infusions were discontinued, a bolus dose of midazolam was given and the ‘open’ infusions were resumed: DSI + PS at half of infusion rate, PS at previous infusion rate. The primary endpoint was the number of ventilator-free days at day 28. Data were analyzed by intention to treat. From October 2009 to August 2014, 129 children were randomly assigned to DSI + PS (n = 66) or PS (n = 63). The study was terminated prematurely due to slow recruitment rates. Median number of ventilator-free days did not differ: DSI + PS 24.0 days (IQR 21.6-25.8) versus PS 24.0 days (IQR 20.6-26.0); median difference 0.02 days (95 % CI -0.91 to 1.09), p = 0.90. Median ICU and hospital length of stay were similar in both groups: DSI + PS 6.9 days (IQR 5.2-11.0) versus PS 7.4 days (IQR 5.3-12.8), p = 0.47, and DSI + PS 13.3 days (IQR 8.6-26.7) versus PS 15.7 days (IQR 9.3-33.2), p = 0.19, respectively. Mortality at 30 days was higher in the DSI + PS group than in the PS group (6/66 versus 0/63, p = 0.03), though no causal relationship to the intervention could be established. Median cumulative midazolam dose did not differ: DSI + PS 14.1 mg/kg (IQR 7.6-22.6) versus PS 17.0 mg/kg (IQR 8.2-39.8), p = 0.11. In critically ill children, daily sedation interruption in addition to protocolized sedation did not improve clinical outcome and was associated with increased mortality compared with protocolized sedation only.
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