University Hospitals Bristol NHS
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PICU

Evidence Update

May 2018

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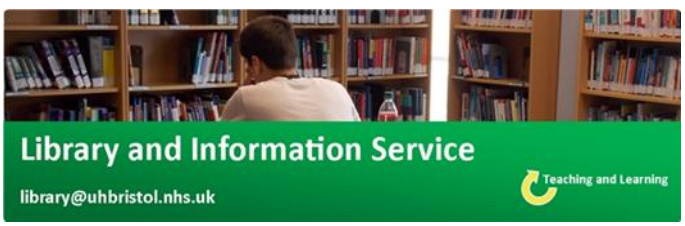

Training Calendar 2018

May (13.00-14.00)

11th (Fri) **Statistics**

14th (Mon) **Literature Searching**

22nd (Tue) **Critical Appraisal**

30th (Wed) **Statistics**

Your Outreach Librarian – Helen Pullen

Whatever your information needs, the library is here to help. Just email us at library@uhbristol.nhs.uk

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

Journal Tables of Contents

The most recent issues of key journals. If you would like any of the papers in full text then get in touch: library@uhbristol.nhs.uk

Eur J Pediatr. 2018 May; 177(5):747-752. doi: 10.1007/s00431-018-3117-y. Epub 2018 Feb 21.

Eliciting the experiences of the adolescent-parent dyad following critical care admission: a pilot study.

Wood D1, Geoghegan S2, Ramnarayan P3, Davis PJ4, Pappachan JV5, Goodwin S4, Wray J6.

Author information

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Centre for Outcomes and Experience Research in Children's Health, Illness and Disability, Great Ormond Street Hospital, WC1N 3JH, London, UK.

Children's Acute Transport Service, Great Ormond Street Hospital, WC1N 3JH, London, UK.

Paediatric Intensive Care Unit, Bristol Royal Hospital for Children, Bristol, BS2 8HW, UK.

Department of Paediatric Intensive Care, University Hospital Southampton, Tremona Road, Southampton, SO16 6YD, UK.

Critical Care and Cardiorespiratory Division, Great Ormond Street Hospital, WC1N 3JH, London, UK.

Abstract

Critically ill adolescents are usually treated on intensive care units optimised for much older adults or younger children. The way they access and experience health services may be very different to most adolescent service users, and existing quality criteria may not apply to them. The objectives of this pilot study were, firstly, to determine whether adolescents and their families were able to articulate their experiences of their critical care admission and secondly, to identify the factors that are important to them during their intensive care unit (ICU) or high dependency unit (HDU) stay. Participants were 14-17 year olds who had previously had an emergency admission to an adult or paediatric ICU/HDU in one of four UK hospitals (two adult, two paediatric) and their parents. Semi-structured interviews were conducted with eight mother-adolescent dyads and one mother. Interviews were transcribed and analysed using framework analysis.

CONCLUSION:

The main reported determinant of high-quality care was the quality of interaction with staff. The significance of these interactions and their environment depended on adolescents' awareness of their surroundings, which was often limited in ICU and changed significantly over the course of their illness. Qualitative interview methodology would be difficult to scale up for this group.

What is known • critically ill adolescents are usually treated on intensive care units optimised for older adults or younger children. • The way they access and experience health services may be different to most adolescent patients; existing quality criteria may not apply.

What is new • Reported determinants of high-quality care were age-appropriateness of the environment, respectfulness and friendliness of staff, communication and inclusion in healthcare decisions. • The significance of these depended on adolescents' awareness of their surroundings, which was often limited and changed over the course of their illness.

Anesthesiology. 2018 Mar 26. doi: 10.1097/ALN.0000000000002152. [Epub ahead of print]

Inhalational versus IV Induction of Anesthesia in Children with a High Risk of Perioperative Respiratory Adverse Events: A Randomized Controlled Trial.

Ramgolam A1, Hall GL, Zhang G, Hegarty M, von Ungern-Sternberg BS.

Author information

From the Department of Anesthesia and Pain Management, Princess Margaret Hospital for Children, Perth, Australia (A.R., M.H., B.S.v U-S.); the Children's Lung Health, Telethon Kids Institute, Subiaco, Australia (A.R., G.L.H., B.S.v U-S.); the School of Physiotherapy and Exercise Science, Curtin University, Perth, Australia (G.L.H.); the Centre for Child Health Research, University of Western Australia, Perth, Australia (G.L.H.); Anesthesiology Unit, Medical School, The University of Western Australia, Perth, Australia (B.S.v. U-S); the School of Public Health, Curtin University, Perth, Australia (G.Z.); and the Centre for Genetic Origins of Health and Disease, Curtin University and University of Western Australia, Perth, Australia (G.Z.).

Abstract

BACKGROUND:

Limited evidence suggests that children have a lower incidence of perioperative respiratory adverse events when intravenous propofol is used compared with inhalational sevoflurane for the anesthesia induction. Limiting these events can improve recovery time as well as decreasing surgery waitlists and healthcare costs. This single center open-label randomized controlled trial assessed the impact of the anesthesia induction technique on the occurrence of perioperative respiratory adverse events in children at high risk of those events.

METHODS:

Children (N = 300; 0 to 8 yr) with at least two clinically relevant risk factors for perioperative respiratory adverse events and deemed suitable for either technique of anesthesia induction were recruited and randomized to either intravenous propofol or inhalational sevoflurane. The primary outcome was the difference in the rate of occurrence of perioperative respiratory adverse events between children receiving intravenous induction and those receiving inhalation induction of anesthesia.

RESULTS:

Children receiving intravenous propofol were significantly less likely to experience perioperative respiratory adverse events compared with those who received inhalational sevoflurane after adjusting for age, sex, American Society of Anesthesiologists physical status and weight (perioperative respiratory adverse event: 39/149 [26%] vs. 64/149 [43%], relative risk [RR]: 1.7, 95% CI: 1.2 to 2.3, P = 0.002, respiratory adverse events at induction: 16/149 [11%] vs. 47/149 [32%], RR: 3.06, 95% CI: 1.8 to 5.2, P < 0.001).

CONCLUSIONS:

Where clinically appropriate, anesthesiologists should consider using an intravenous propofol induction technique in children who are at high risk of experiencing perioperative respiratory adverse events.

European Journal of Pediatrics. Volume 177 Number 5

Eur J Pediatr. 2018 May; 177(5):709-714. doi: 10.1007/s00431-017-3084-8. Epub 2018 Feb 7.

Organ and tissue donation in a regional paediatric intensive care unit: evaluation of practice.

Carone L1, Alurkar S2, Kigozi P2, Vyas H3.

Author information

FY2-LNR Deanery, Leicester, England. laurajayne.carone@nhs.net.

Paediatric Intensive Care Unit, Nottingham University Hospital, Nottingham, England.

Emeritus Honorary Professor and Honorary Consultant in PICU and Respiratory medicine, University of Nottingham, Nottingham, England.

Abstract

Approximately 2% of those on the organ transplant list in the UK are children. Early identification of donors and referral to organ donation teams (ODT) has proven to increase both the success rate of gaining consent and the number of organs actually retrieved. To evaluate the practice relating to organ donation for children receiving end-of-life care on a paediatric intensive care unit (PICU) measured against the National Guidelines. All children 0-18 who

received their end-of-life care and died on the PICU. A retrospective cohort study of organ donation patterns including referral, approach, consent and donation. This involved a review of case notes on PICU between the years 2009 and 2014. One hundred five deaths were identified and 100 notes were examined and data analysed to ascertain if religion, age and length of stay on PICU impacted on practice. Eighty-six children met the early identification criteria for potential donors, 40 (46.5%) children were referred to the ODT and 33 (38.3%) families were approached regarding donation. Twenty-one (24.4%) families consented to donation. Seventeen donations took place with a total of 41 sets of organs/tissues retrieved. Despite the majority of children meeting early identification for potential donors, many were not being referred.

CONCLUSIONS:

All children on end-of-life care should be referred for potential organ donation. Organ donation needs to be seen as a priority for hospitals as a part of routine end-of-life care to help increase referral rates and give families the opportunity to donate. Many paediatric deaths are not referred for consideration of organ donation, despite guidelines stating that this process should be standard of care. Further optimization of referral rates may aid in increasing the number of organs available for donation. What is Known: • Shortage of organs continues to be a national problem. • NICE guidelines state that all patients who are on end-of-life care should have the option of organ donation explored. • Required referral both increases the number of donors and organs donated. What is New: • The process of identifying and referring children for paediatric organ donation. • Identifies that children are still not being referred for organ donation. • Organ donation is still not a priority for hospitals.

Pediatrics

May 2018, VOLUME 141 / ISSUE 5

A Modified Algorithm for Critical Congenital Heart Disease Screening Using Pulse Oximetry

Christina L. Diller, Michael S. Kelleman, Kenneth G. Kupke, Sharon C. Quary, Lazaros K. Kochilas and Matthew E. Oster

External Validation of the PediBIRN Clinical Prediction Rule for Abusive Head Trauma

Helena Pfeiffer, Anne Smith, Alison Mary Kemp, Laura Elizabeth Cowley, John A. Cheek, Stuart R. Dalziel, Meredith L. Borland, Sharon O'Brien, Megan Bonisch, Jocelyn Neutze, Ed Oakley, Louise Crowe, Stephen J. C. Hearps, Mark D. Lyttle, Silvia Bressan, Franz E. Babl and on behalf of the Paediatric Research in Emergency Department International Collaborative (PREDICT)

Relevance of Abusive Head Trauma to Intracranial Hemorrhages and Bleeding Disorders

James D. Anderst, Shannon L. Carpenter, Rodney Presley, Molly Curtin Berkoff, Allison P. Wheeler, Robert F. Sidonio Jr and J. Michael Soucie

Mortality After Pediatric Arterial Ischemic Stroke

Lauren A. Beslow, Michael M. Dowling, Sahar M.A. Hassanein, John K. Lynch, Dimitrios Zafeiriou, Lisa R. Sun, Ilona Kopyta, Luigi Titomanlio, Anneli Kolk, Anthony Chan, Jose Biller, Eric F. Grabowski, Abdalla A. Abdalla, Mark T. Mackay, Gabrielle deVeber and on behalf of the International Pediatric Stroke Study Investigators

The Grief of Mothers After the Sudden Unexpected Death of Their Infants

Richard D. Goldstein, Ruth I. Lederman, Wendy G. Lichtenthal, Sue E. Morris, Melanie Human, Amy J. Elliott, Deb Tobacco, Jyoti Angal, Hein Odendaal, Hannah C. Kinney, Holly G. Prigerson and for the PASS Network

Latest Evidence

Cochrane Library
Searched but nothing relevant to add.

UpToDate®
Searched but nothing relevant to add.

Library Clinic

Stop by and find out more about our services. We will be here to answer any questions you may have!

June 6th: **Terrace (Level 4, Education Centre)** *12.00-14.00*

June 19th: **Welcome Centre, BRI** *10.00-16.00*

July 3rd: **Welcome Centre, BRI** *10.00-16.00*

July 4th: **Canteen (Level 9, BRI)** *12.00-14.00*

August 8th: **Foyer, Education Centre** *12.00-14.00*

August 29th: **Foyer, St Michael's Hospital** *12.00-14.00*

September 5th: **Canteen (Level 9, BRI)** *12.00-14.00*

September 11th: **Welcome Centre, BRI** *10.00-16.00*

October 3rd: **Terrace (Level 4, Education Centre)** *12.00-14.00*

November 7th: **Canteen (Level 9, BRI)** *12.00-14.00*

December 5th: **Foyer, Education Centre** *12.00-14.00*

December 11th: **Welcome Centre, BRI** *10.00-16.00*

Database Articles

Below is a selection of articles 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

1. Long-term Mortality After Acute Kidney Injury in the Pediatric ICU.

Author(s): Hessey, Erin; Morissette, Geneviève; Lacroix, Jacques; Perreault, Sylvie; Samuel, Susan; Dorais, Marc; Jouvet, Philippe; Lafrance, Jean-Philippe; LeLorier, Jacques; Phan, Véronique; Palijan, Ana; Pizzi, Michael; Roy, Louise; Zappitelli, Michael

Source: Hospital pediatrics; May 2018; vol. 8 (no. 5); p. 260-268

Publication Date: May 2018

Publication Type(s): Journal Article

PubMedID: 29712717

Abstract: OBJECTIVES(1) To evaluate the association between acute kidney injury (AKI) in the PICU and long-term mortality and (2) to determine the extent to which adding the urine output (UO)-defined AKI alters the association. METHODS A 2-center retrospective cohort study of children (≤18 years old) admitted to the PICU between 2003 and 2005 for non-cardiac surgery, with follow-up until 2010. Patients with end stage renal disease, no provincial health insurance number, who died during hospitalization, or could not be linked to administrative data were excluded. One hospitalization per patient was included. AKI was defined by using serum creatinine criteria and/or UO criteria. Mortality was ascertained by using administrative data. Cox regression analysis was performed to evaluate the association between AKI and long-term mortality. RESULTS The study population included 2041 patients (55.7% male, mean admission age 6.5 ± 5.8 years). Of 2041 hospital survivors, 9 (0.4%) died within 30 days, 51 (2.5%) died within 1 year, and 118 (5.8%) died within 5 to 7 years post-discharge. AKI was independently associated with 5- to 7-year mortality (adjusted hazard ratio [95% confidence interval]: 3.10 [1.46-6.57] and 3.38 [1.63-7.02], respectively). Including UO did not strengthen the association. CONCLUSIONS AKI is associated with 5- to 7-year mortality. Because this is an observational study we cannot determine if AKI is causative of mortality or of the pathophysiology. However, patients with AKI represent a high-risk group. It is reasonable that these patients be considered for targeted follow-up until future researchers better elucidate these relationships.

Database: Medline

2. Organ and tissue donation in a regional paediatric intensive care unit: evaluation of practice.

Author(s): Carone, Laura; Alurkar, Shrirang; Kigozi, Phoebe; Vyas, Harish

Source: European journal of pediatrics; May 2018; vol. 177 (no. 5); p. 709-714

Publication Date: May 2018

Publication Type(s): Journal Article

PubMedID: 29417215

Abstract: Approximately 2% of those on the organ transplant list in the UK are children. Early identification of donors and referral to organ donation teams (ODT) has proven to increase both the success rate of gaining consent and the number of organs actually retrieved. To evaluate the practice relating to organ donation for children receiving end-of-life care on a paediatric

intensive care unit (PICU) measured against the National Guidelines. All children 0-18 who received their end-of-life care and died on the PICU. A retrospective cohort study of organ donation patterns including referral, approach, consent and donation. This involved a review of case notes on PICU between the years 2009 and 2014. One hundred five deaths were identified and 100 notes were examined and data analysed to ascertain if religion, age and length of stay on PICU impacted on practice. Eighty-six children met the early identification criteria for potential donors, 40 (46.5%) children were referred to the ODT and 33 (38.3%) families were approached regarding donation. Twenty-one (24.4%) families consented to donation. Seventeen donations took place with a total of 41 sets of organs/tissues retrieved. Despite the majority of children meeting early identification for potential donors, many were not being referred. CONCLUSIONS All children on end-of-life care should be referred for potential organ donation. Organ donation needs to be seen as a priority for hospitals as a part of routine end-of-life care to help increase referral rates and give families the opportunity to donate. Many paediatric deaths are not referred for consideration of organ donation, despite guidelines stating that this process should be standard of care. Further optimization of referral rates may aid in increasing the number of organs available for donation. What is Known: • Shortage of organs continues to be a national problem. • NICE guidelines state that all patients who are on end-of-life care should have the option of organ donation explored. • Required referral both increases the number of donors and organs donated. What is New: • The process of identifying and referring children for paediatric organ donation. • Identifies that children are still not being referred for organ donation. • Organ donation is still not a priority for hospitals.

Database: Medline

3. Impact of the clinical pharmacist interventions on prevention of pharmacotherapy related problems in the paediatric intensive care unit.

Int J Clin Pharm. 2018 Mar 30. doi: 10.1007/s11096-018-0632-x. [Epub ahead of print]

Malfará M1, Pernassi M1, Aragon D1, Carlotti A2.

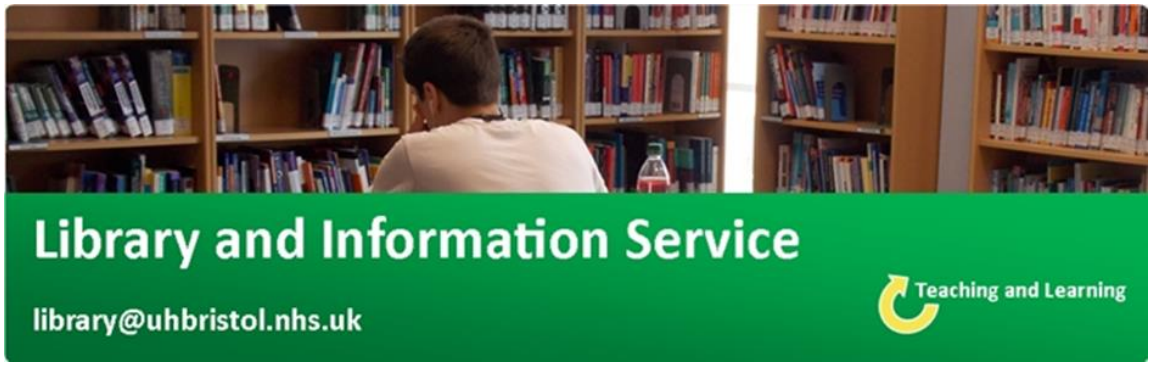
Author information

Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil. apcarlotti@fmrp.usp.br.

Abstract

Background Problems related to pharmacotherapy are common in patients admitted to the paediatric intensive care unit (PICU) and are associated with increased healthcare costs. Data on the impact of clinical pharmacist interventions to prevent pharmacotherapy-related problems and to minimize costs in the PICU are limited. Objectives To evaluate the number and type of clinical pharmacist interventions in the PICU and to determine cost savings associated with them. Setting a ten bed PICU of a tertiary-care university hospital in Brazil. Method This was a prospective, observational study conducted over 1-year. The Failure Mode and Effects Analysis (FMEA) tool was applied at the beginning of the study to assess drug-related risks in the PICU and to guide clinical pharmacist interventions. Main outcome measure Number and type of clinical pharmacist interventions and healthcare-related costs. Results One hundred sixty-two children were followed-up by the clinical pharmacist and 1586 prescriptions were evaluated; pharmacotherapy-related problems were identified in 12.4% of them. Sixteen of 75 failure

modes identified by FMEA were potentially reduced by the clinical pharmacist interventions. There were 197 interventions with a cost saving of R$ 15,118.73 (US$ 4828.00). Clinical pharmacist interventions were related to drug interaction and therapeutic monitoring (34.5%), drug selection (22.3%), dosing and frequency (16.8%), prescription (13.2%) and administration (13.2%). Ninety-seven per cent of the clinical pharmacist interventions were accepted by the medical team. The interventions with larger cost savings were related to administration (39%). Conclusion The clinical pharmacist interventions minimized the risks of pharmacotherapy-related problems and contributed to the reduction of costs associated with medical prescription.



Library Opening Times

Staffed hours: 8am-5pm, Monday to Friday

Swipe-card access: 7am-11pm, seven days a week

Level 5, Education and Research Centre

University Hospitals Bristol