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
Contents

1:  Tables of Contents from November’s Paediatric journals

2:  New NICE Guidance

3:  Latest relevant Systematic Reviews from the Cochrane Library

4:  New activity in Uptodate

5:  Quick exercise

6:  Current Awareness database articles
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Value of Screening Parents for Their Risk of Developing Psychological Symptoms After PICU: A Feasibility Study Evaluating a Pediatric Intensive Care Follow-Up Clinic*</td>
<td>Samuel, Victoria M.; Colville, Gillian A.; Goodwin, Sarah; Ryninks, Kirsty; Dean, Suzanne</td>
</tr>
<tr>
<td>Pediatric Organ Donation Potential at a Children’s Hospital*</td>
<td>Bennett, Erin E.; Sweney, Jill; Aguayo, Cecile; Myrick, Craig; Matheny Antommaria, Armand H.; Bratton, Susan L.</td>
</tr>
<tr>
<td>A Novel Method to Identify the Start and End of the Winter Surge in Demand for Pediatric Intensive Care in Real Time*</td>
<td>Pagel, Christina; Ramnarayan, Padmanabhan; Ray, Samiran; Peters, Mark J.</td>
</tr>
<tr>
<td>Gastric Dysmotility in Critically Ill Children: Pathophysiology, Diagnosis, and Management*</td>
<td>Martinez, Enid E.; Douglas, Katherine; Nurko, Samuel; Mehta, Nilesh M.</td>
</tr>
<tr>
<td>Clinical Epidemiology of Extubation Failure in the Pediatric Cardiac ICU: A Report From the Pediatric Cardiac Critical Care Consortium*</td>
<td>Gaies, Michael; Tabbutt, Sarah; Schwartz, Steven M.; Bird, Geoffrey L.; Alten, Jeffrey A.; Shekerdemian, Lara S.; Klugman, Darren; Thiagarajan, Ravi R.; Gaynor, J. William; Jacobs, Jeffrey P.; Nicolson, Susan C.; Donohue, Janet E.; Yu, Sunkyung; Pasquali, Sara K.; Cooper, David S.</td>
</tr>
<tr>
<td>Pediatric Index of Cardiac Surgical Intensive Care Mortality Risk Score for Pediatric Cardiac Critical Care*</td>
<td>Jeffries, Howard E.; Soto-Campos, Gerardo; Katch, Aaron; Gall, Christine; Rice, Tom B.; Wetzel, Randall</td>
</tr>
<tr>
<td>Targeting Glycemic Control After Pediatric Cardiac Surgery: The Influence of Age on Insulin Requirement*</td>
<td>Kanthimathinathan, Hari Krishnan; Sundararajan, Santosh B.; Laker, Simon; Scholefield, Barney R.; Morris, Kevin P.</td>
</tr>
<tr>
<td>Risk Factors for Extubation Failure Following Neonatal Cardiac Surgery*</td>
<td>Laudato, Nina; Gupta, Pooja; Walters, Henry L. III; Delius, Ralph E.; Mastropietro, Christopher W.</td>
</tr>
<tr>
<td>Association Between Extracorporeal Membrane Oxygenation Center Volume and Mortality Among Children With Heart Disease: Propensity and Risk Modeling</td>
<td></td>
</tr>
</tbody>
</table>
Family Involvement in PICU Rounds: Reality or Rhetoric?*
Tume, Lyvonne N.; Latour, Jos M.

Nadel, Simon; Als, Lorraine C.; Garralda, M. Elena

Bereaved Parents’ Decisions About Organ Donation: Known Knowns and Known Unknowns*
Vitali, Sally H.; Burns, Jeffrey

A New Band in Town: A Novel Approach to Identify Seasonal Surge in the PICU*
Silver, Peter; Sweberg, Todd; Schleien, Charles

Gastrointestinal Complications in the PICU: Is Disease the Only Culprit?*
Campos Miño, Santiago

Failed Extubation in Cardiac Patients: Not Just Case-Mix and Beware of Slow Progression*
Dominguez, Troy E.; Brown, Katherine L.

Pediatric Index of Cardiac Surgical Intensive Care Mortality: A New Severity of Illness Score for Cardiac Surgical Patients in ICUs*
Thiagarajan, Ravi R.; Nathan, Meena

Targeting Glycemic Control After Pediatric Cardiac Surgery*
Macrae, Duncan

The Ventilator Is a Vasoactive*
Zurca, Adrian D.; Berger, John T.

Do You Know How Much Is Delivered to Your Patient’s Lungs? Accurate Measurement of Effective Tidal Volumes Should Be Standard of Care in Infants and Children*
Venkataraman, Shekhar T.

Pediatrics
November 2015, Volume 136, Issue 5

Derivation of Candidate Clinical Decision Rules to Identify Infants at Risk for Central Apnea
Paul Walsh, Pádraig Cunningham, Sabrina Merchant, Nicholas Walker, Jacquelyn Heffner, Lucas Shanholtzer, and Stephen J. Rothenberg

Deferred Consent for Randomized Controlled Trials in Emergency Care Settings
Katie Harron, Kerry Woolfall, Kerry Dwan, Carrol Gamble, Quen Mok, Padmanabhan Ramnarayan, and Ruth Gilbert

Use of a Metronome in Cardiopulmonary Resuscitation: A Simulation Study
Failure mode and effective analysis ameliorate awareness of medical errors: a 4-year prospective observational study in critically ill children (pages 1227–1234)
Marco Daverio, Giuliana Fino, Brugnaro Luca, Cristina Zaggia, Andrea Pettenazzo, Antonella Parpaiola, Paola Lago and Angela Amigoni

Evaluation of I-gel™ airway in different head and neck positions in anesthetized paralyzed children (pages 1248–1253)
Divya Jain, Babita Ghai, Indu Bala, Komal Gandhi and Gargi Banerjee

Case report of transfusion-related acute lung injury in a pediatric spine surgery patient transfused leukoreduced red blood cells (pages 1294–1297)
Elizabeth M. Cudilo, Anna M. Varughese, Mohamed Mahmoud, Patricia M. Carey and Rajeev Subramanyam

European Resuscitation Council and European Society of Intensive Care Medicine 2015 guidelines for post-resuscitation care
Jerry P. Nolan, Jasmeet Soar, Alain Cariou, Tobias Cronberg, Véronique R. M. Moulaert, Charles D. Deakin, Bernd W. Bottiger, Hans Friberg, Kjetil Sunde & Claudio Sandroni

Citrate versus heparin anticoagulation for continuous renal replacement therapy: an updated meta-analysis of RCTs
Ming Bai, Meilan Zhou, Lijie He, Feng Ma, Yangping Li, Yan Yu, Pengbo Wang, Li Li, Rui Jing, Lijuan Zhao & Shiren Sun

Predicting fluid responsiveness in 100 critically ill children: the effect of baseline contractility
Rohit Saxena, Andrew Durward, Sarah Steeley, Ian A. Murdoch & Shane M. Tibby

Why is Acinetobacter baumannii a problem for critically ill patients?
Marin H. Kollef & Michael S. Niederman

Ten practical strategies for effective communication with relatives of ICU patients
Stephen Warrillow, KJ Farley & Daryl Jones
A newly established extracorporeal life support assisted cardiopulmonary resuscitation (ECPR) program can achieve intact neurological outcome in 60% of children
Adrian C. Mattke, Christian F. Stocker, Andreas Schibler, Nelson Alphonso, Kerry Johnson & Tom R. Karl

Other Journals

Cardiology in the Young
October 2015, Volume 25, Issue 7

Current Opinion in Pediatrics
October 2015, Volume 27, Issue 5

Current Opinion in Critical Care
October 2015, Volume 21, Issue 5

Critical Care
November 2015, Volume 19

Acta Paediatrica
November 2015, Volume 104, Issue 11

European Journal of Pediatrics
November 2015, Volume 174, Issue 11

Journal of Pediatrics
November 2015, Volume 167, Issue 5

American Journal of Respiratory and Critical Care Medicine
November 2015, Volume 192, Issue 9
New NICE Guidance

DG18  Procalcitonin testing for diagnosing and monitoring sepsis (ADVIA Centaur BRAHMS PCT assay, BRAHMS PCT Sensitive Kryptor assay, Elecsys BRAHMS PCT assay, LIAISON BRAHMS PCT assay and VIDAS BRAHMS PCT assay)

Latest relevant Systematic Reviews from the Cochrane Library

Antiepileptic drugs for the treatment of infants with severe myoclonic epilepsy

Library membership de-mystified...

Why join the Library?

Print resources: borrowing rights for books and journals in both print and electronic formats

E-resources: including essential point of care tools such as UpToDate and ClinicalSkills.net

OpenAthens enrolment (unless you opt out): get access to UHBristol subscription resources

Inter-library loans: if we don’t have an article or book that you need, we can get it for you

Out of hours Library access: swipe card access to the Library from 7am – 11pm every day

How do I join the Library?

You can either...

- Register in person at the Library
- Complete a membership form electronically (click here or email library@uhbristol.nhs.uk) and return it to the Library or to library@uhbristol.nhs.uk.

How can I find out more?

Check out our website: http://www.uhbristol.nhs.uk/for-clinicians/library-and-information-service/

Email us: library@uhbristol.nhs.uk

Visit us: Level 5, Education Centre
Metronome use during chest compressions in children (October 2015)

The 2010 American Heart Association and International Liaison Committee on Resuscitation Cardiopulmonary Resuscitation guidelines emphasize the importance of hard, fast chest compression at an optimal rate of 100 compressions per minute. Healthcare providers who use a metronome are more likely to achieve this rate. In a crossover trial of 155 medical personnel who performed compressions on a pediatric manikin with or without a metronome, the mean percentage of compressions delivered at an optimal rate was achieved more often when a metronome was used (72 versus 50 percent) [28]. The rescuers tended to perform compressions too fast when a metronome was not used. (See "Basic life support in infants and children", section on 'Chest compressions'.)

Lower mortality for children treated in pediatric trauma centers (October 2015)

In a retrospective analysis of a national database of almost 176,000 pediatric trauma patients, the unadjusted mortality rate was lowest among patients treated in pediatric trauma centers (0.6 percent) compared with adult trauma centers (2.3 percent) and mixed trauma centers (1.8 percent) [29]. After adjustment, children treated in adult or mixed trauma centers had an estimated 57 and 45 percent increased risk of dying, respectively, when compared with patients treated in pediatric trauma centers (PTC). Because optimal outcomes occur when the critically injured child is initially resuscitated and subsequently managed in a PTC, it is preferable to provide care in such facilities from the outset, whenever possible, or to arrange transfer to a PTC for ongoing management. (See "Trauma management: Approach to the unstable child", section on 'Definitive care'.)
Quick exercise

OUTCOME RELIABILITY refers to consistency of the test results on repeat measurements.

*Match the definition to the form of reliability:*

<table>
<thead>
<tr>
<th>Definition</th>
<th>Form of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Looks at the level of agreement between assessments by <em>one rater</em> of the same material at two or more different times.</td>
<td>Inter-rater reliability</td>
</tr>
<tr>
<td>Refers to the level of agreement between the initial test results and the results of repeated measurements made at a later date.</td>
<td>Test retest reliability</td>
</tr>
<tr>
<td>This measures the level of agreement between assessments made by <em>two or more raters</em> at the same time.</td>
<td>Intra-rater reliability</td>
</tr>
</tbody>
</table>

To find out more about bias in research methodology, sign up for one of our *Critical Appraisal training sessions*. For more details, email katie.barnard@uhbristol.nhs.uk

---

**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.

**November (1pm)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weds 4th</td>
<td>Literature Searching</td>
</tr>
<tr>
<td>Thurs 12th</td>
<td>Understanding articles</td>
</tr>
<tr>
<td>Fri 20th</td>
<td>Statistics</td>
</tr>
<tr>
<td>Mon 23rd</td>
<td>Literature Searching</td>
</tr>
</tbody>
</table>

**December (12pm)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tues 1st</td>
<td>Understanding articles</td>
</tr>
<tr>
<td>Weds 9th</td>
<td>Statistics</td>
</tr>
<tr>
<td>Thurs 17th</td>
<td>Literature Searching</td>
</tr>
</tbody>
</table>
Current Awareness Database Articles

If you require full articles please email: library@uhbristol.nhs.uk

Title: Towards a biomarker panel for the assessment of AKI in children receiving intensive care.

Citation: Pediatric nephrology (Berlin, Germany), Oct 2015, vol. 30, no. 10, p. 1861-1871 (October 2015)

Author(s): McCaffrey, James, Coupes, Beatrice, Chaloner, Chris, Webb, Nicholas J A, Barber, Rachael, Lennon, Rachel

Abstract: Critically ill children and neonates are at high risk of developing acute kidney injury (AKI). AKI is associated with short- and long-term renal impairment and increased mortality. Current methods of diagnosing AKI rely on measurements of serum creatinine, which is a late and insensitive marker. Few studies to date have assessed AKI biomarkers in a heterogeneous patient cohort. We conducted a prospective feasibility study in a paediatric intensive care setting over a 6-month period to describe the relationship between AKI (defined according to pRIFLE criteria) and new AKI biomarkers. In total, 49 patients between the ages of 16 days and 15 years were recruited for measurement of plasma cystatin C (Cys-C) and neutrophil gelatinase-associated lipocalin (pNGAL) concentrations, as well as for urinary kidney injury molecule-1 (KIM-1) and urinary NGAL (uNGAL) concentrations. Almost one-half (49 %) of the patient cohort experienced an AKI episode, and Cys-C and pNGAL were the strongest candidates for the detection of AKI. Our data suggest that the widely used estimated baseline creatinine clearance value of 120 mL/min/1.73 m(2) underestimates actual baseline function in patients admitted to paediatric intensive care units. This investigation demonstrates the feasibility of new AKI biomarker testing in a mixed patient cohort and provides novel biomarker profiling for further evaluation.

Title: Family Experience and PICU Death: A Meta-Synthesis.

Citation: Pediatrics, Oct 2015, vol. 136, no. 4, p. e961. (October 2015)

Author(s): Butler, Ashleigh E, Hall, Helen, Willetts, Georgina, Copnell, Beverley

Abstract: The PICU is the most common site for inpatient pediatric deaths worldwide. The impact of this clinical context on family experiences of their child's death is unclear. The objective of the study was to review and synthesize the best available evidence exploring the family experience of the death of their child in the PICU. Studies were retrieved from CINAHL Plus, OVID Medline, Scopus, PsycINFO, and Embase. Gray literature was retrieved from greylit.com, opengrey.edu, Trove, Worldcat, and Google scholar. Study selection was undertaken by 4 reviewers by using a multistep screening process, based on a previously developed protocol (International Prospective Register of Systematic Reviews 2015:CRD42015017463). Data was extracted as first-order constructs (direct quotes) or second-order constructs (author interpretations) onto a predeveloped extraction tool. Data were analyzed by thematic synthesis. One main theme and 3 subthemes emerged. "Reclaiming parenthood" encompasses the ways in which the parental role is threatened when a child is dying in the PICU, with the subthemes "Being a parent in the PICU," "Being supported," and "Parenting after death" elucidating the ways parents work to reclaim this role. The review is limited by a language bias, and by the limitations of the primary studies. When a child dies in a PICU, many aspects of the
technology, environment, and staff actions present a threat to the parental role both during and after the child's death. Reclaiming this role requires support from health care providers and the wider community. Copyright © 2015 by the American Academy of Pediatrics.

**Title:** Constipation in the Critically Ill Child: Frequency and Related Factors.

**Citation:** The Journal of Pediatrics, Oct 2015, vol. 167, no. 4, p. 857 (October 2015)

**Author(s):** López, Jorge, Botrán, Marta, García, Ana, González, Rafael, Solana, María J, Urbano, Javier, Fernández, Sarah N, Sánchez, César, López-Herce, Jesús

**Abstract:** To analyze the incidence and factors associated with constipation in critically ill children. We performed a prospective observational study that included children admitted to the pediatric intensive care unit for more than 3 days. Constipation was defined as more than 3 days without a bowel movement. Relationships between constipation and demographic data; clinical severity score; use of mechanical ventilation, use of vasoconstrictors, sedatives, and muscle relaxants; nutritional data; electrolyte disturbances; and clinical course were analyzed. Constipation developed in 46.7% of the 150 patients studied (mean age, 34.3 ± 7.1 months). It was most common in postoperative, older, and higher-body-weight patients, and in those with fecal continence (P < .01). Compared with patients without constipation, patients with constipation had higher severity scores and more frequently received midazolam, fentanyl, muscle relaxants, and inotropic support (P < .05). Patients with constipation also started nutrition later and with a lower volume of nutrition (P < .01). There were no between-group differences in mortality or length of pediatric intensive care unit stay. In multivariate analysis, independent factors associated with constipation were body weight (OR, 1.08; 95% CI, 1.03-1.13), Pediatric Index of Mortality 2 score (OR, 1.05; 95% CI, 1.02-1.09), admission after surgery (OR, 7.64; 95% CI, 2.56-22.81), and treatment with vasoconstrictors (OR, 10.28; 95% CI, 3.53-29.93). Constipation is common in critically ill children. Body weight, Pediatric Index of Mortality 2 clinical severity score, admission after surgery, and the need for vasoconstrictor therapy are major independent risk factors associated with constipation.

**Title:** The wrong and wounding road: Paediatric polytrauma admitted to a level 1 trauma intensive care unit over a 5-year period.

**Citation:** South African medical journal = Suid-Afrikaanse tydskrif vir geneeskunde, Oct 2015, vol. 105, no. 10, p. 823-826, 0256-9574 (October 2015)

**Author(s):** Naidoo, Natasha, Muckart, David J J

**Abstract:** Injury in childhood is a major cause of potentially preventable morbidity and mortality. In order to implement effective preventive strategies, epidemiological data on mechanisms of injury and outcome are essential. To assess the causation, severity of injury, morbidity and mortality of paediatric trauma admitted to a level 1 trauma intensive care unit (TICU). Children were defined as being <16 years of age. The study covered the 5-year period January 2008 - December 2012. Eligible patients were identified from a prospective database maintained in the level 1 TICU at Inkosi Albert Luthuli Central Hospital, Durban, South Africa. Data extracted were referral source, mechanism of injury, age and gender distribution, injury severity score (ISS), anatomical distribution of injury and
mortality. A total of 181 patients admitted during the study period accounted for 15.9% of all admissions. There were 84 females (46.4%) and 97 males (53.6%), with a median age of 7 years (interquartile range (IQR) 4 - 10). Sources of admission were directly from the scene in 38 cases (21.0%), from a primary healthcare facility in 47 (26.0%), from a regional hospital in 56 (31.0%) and from a tertiary facility in 40 (22.0%). Mortality rates according to location of transfer were regional hospital 8 deaths (30.8%), tertiary facility 7 (26.9%), primary health clinic 7 (26.9%), and from the scene 4 (15.4%). Mechanisms of injury were pedestrian-motor vehicle collision (PMVC) in 105 cases (58.0%), motor vehicle passenger in 38 (21.0%), non-vehicular blunt trauma in 18 (10.0%), gunshot wounds (GSWs) in 12 (6.6%), stab wounds in 6 (3.3%), bull goring in 1 (0.5%) and bicycle accident 1 (0.5%). The median ISS for all admissions was 25 (IQR 16 - 38). ISSs were >25 in 98 patients (54.1%), 16 - 25 in 51 (28.2%), 9 - 15 in 9 (4.9%) and <9 in 13 (7.2%); 61.9% of patients had head injuries, 48.1% injuries to the extremities, 41.4% abdominal trauma, 40.3% thoracic trauma, 20.4% external soft-tissue trauma, 9.9% cervical injury and 9.4% facial trauma. There were 26 deaths (14.4%), of which PMVCs accounted for 16 (61.5%), motor vehicle passengers for 7 (26.9%), blunt trauma for 2 (7.7%) and GSWs for 1 (3.8%). The majority of deaths (92%) were of patients with an ISS >25. Of the 26 patients who died, 88.4% had a head injury, 46.2% an extremity injury, 38.5% an external injury, 34.6% abdominal or chest injuries, 19.2% neck injury and 11.5% facial injury. Motor vehicle-related injuries, especially PMVCs, dominate severe paediatric trauma and there is an urgent need for more road traffic education and stringent measures to decrease the incidence and associated morbidity and mortality.

Title: Influence of Acute Kidney Injury Defined by the Pediatric Risk, Injury, Failure, Loss, End-Stage Renal Disease Score on the Clinical Course of PICU Patients.

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, Oct 2015, vol. 16, no. 8, p. e275., 1529-7535 (October 2015)

Author(s): Cabral, Felipe Cezar, Ramos Garcia, Pedro Celiny, Mattiello, Rita, Dresser, Daiane, Fiori, Humberto Holmer, Korb, Cecilia, Dalcin, Tiago Chagas, Piva, Jefferson Pedro

Abstract: To evaluate the predictive value of the pediatric-modified Risk, Injury, Failure, Loss, End-stage renal disease criteria for disease course severity in patients with or without acute kidney injury admitted to a PICU. Retrospective cohort study. A 12-bed PICU at a tertiary referral center in Southern Brazil. All patients admitted to the study unit over a 1-year period. A database of all eligible patients was analyzed retrospectively. Patients were classified by pediatric-modified Risk, Injury, Failure, Loss, End-stage renal disease score at admission and worst pediatric-modified Risk, Injury, Failure, Loss, End-stage renal disease score during PICU hospitalization. The outcomes of interest were length of PICU stay, duration of mechanical ventilation, duration of vasoactive drug therapy, and mortality. The Pediatric Index of Mortality 2 was used to assess overall disease severity at the time of PICU admission. Of 375 patients, 169 (45%) presented acute kidney injury at the time of admission and 37 developed acute kidney injury during PICU stay, for a total of 206 of 375 patients (55%) diagnosed with acute kidney injury during the study period. The median Pediatric Index of Mortality 2 score predicted a mortality rate of 9% among non-acute kidney injury patients versus a mortality rate of 16% among acute kidney injury patients (p = 0.006). The mortality of patients classified as pediatric-modified Risk, Injury, Failure, Loss, End-stage renal disease F was double that predicted by Pediatric Index of Mortality 2 (7 vs 3.2). Patients classified as having severe acute kidney injury (pediatric-modified Risk, Injury, Failure, Loss, End-stage renal disease I + F) exhibited higher mortality (14.1%; p = 0.001) and prolonged PICU length of stay (median, 7 d; p = 0.001) when compared with other patients. Acute kidney injury is a very frequent occurrence among patients
admitted to PICUs. The degree of acute kidney injury severity, as assessed by the pediatric-modified Risk, Injury, Failure, Loss, End-stage renal disease criteria, is a good predictor of morbidity and mortality in this population. Pediatric Index of Mortality 2 tends to underestimate mortality in pediatric patients with severe acute kidney injury.

Title: Practice Patterns in Pediatric Critical Care Medicine: Results of a Workforce Survey.

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, Oct 2015, vol. 16, no. 8, p. e308., 1529-7535 (October 2015)

Author(s): Radabaugh, Carrie L, Ruch-Ross, Holly S, Riley, Carley L, Stockwell, Jana A, Conway, Edward E, Mink, Richard B, Agus, Michael S, Poss, W Bradley, Salerno, Richard A, Vernon, Donald D

Abstract: To obtain current data on practice patterns of the U.S. pediatric critical care medicine workforce. Membership of the American Academy of Pediatrics Section on Critical Care and individuals certified by the American Board of Pediatrics in pediatric critical care medicine. All active members of the American Academy of Pediatrics Section on Critical Care, and nonduplicative individuals certified by the American Board of Pediatrics in pediatric critical care medicine, were classified as eligible to participate in this electronically administered workforce survey. Data were extracted by a doctorate-level research professional. Extracted data included demographic information, work environment, number of hours worked, training, clinical responsibilities, work satisfaction and burnout, and plans to leave the practice of pediatric critical care medicine. Of 1,857 individuals contacted, 923 completed the survey (49.7%). The majority of respondents were white, male, non-Hispanic, university-employed, and taught residents. Respondents who worked full time were on clinical intensive care service for a median of 15 wk/yr and responsible for a median of 13 ICU beds, working a median of 60 hr/wk. Total night call responsibility was a median of 60 nights/yr; about half of respondents indicated night call was in-hospital. Fewer than half were engaged in basic science or clinical research. Compared with earlier data, there was minimal change in work hours and proportion of time devoted to research, but there was an increase in the proportion of female pediatric critical care medicine physicians. These data provide a description of the typical intensivist and a snapshot of the current pediatric critical care medicine workforce, which may be experiencing a mild-to-moderate undersupply. The results are useful for assessing the current workforce and valuable for future planning.

Title: Risk Factors for Delayed Enteral Nutrition 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, Oct 2015, vol. 16, no. 8, p. e283., 1529-7535 (October 2015)

Author(s): Canarie, Michael F, Barry, Suzanne, Carroll, Christopher L, Hassinger, Amanda, Kandil, Sarah, Li, Simon, Pinto, Matthew, Valentine, Stacey L, Faustino, E Vincent S, Northeast Pediatric Critical Care Research Consortium

Abstract: Delayed enteral nutrition, defined as enteral nutrition started 48 hours or more after admission to the PICU, is associated with an inability to achieve full enteral nutrition and worse outcomes in critically ill children. We reviewed nutritional practices in six medical-surgical PICUs and determined risk factors associated with delayed enteral nutrition in critically ill children.
Retrospective cross-sectional study using medical records as source of data. Six medical-surgical PICUs in northeastern United States. Children less than 21 years old admitted to the PICU for 72 hours or more excluding those awaiting or recovering from abdominal surgery. A total of 444 children with a median age of 4.0 years were included in the study. Enteral nutrition was started at a median time of 20 hours after admission to the PICU. There was no significant difference in time to start enteral nutrition among the PICUs. Of those included, 88 children (19.8%) had delayed enteral nutrition. Risk factors associated with delayed enteral nutrition were noninvasive (odds ratio, 3.37; 95% CI, 1.69-6.72) and invasive positive-pressure ventilation (odds ratio, 2.06; 95% CI, 1.15-3.69), severity of illness (odds ratio for every 0.1 increase in pediatric index of mortality 2 score, 1.39; 95% CI, 1.14-1.71), procedures (odds ratio, 3.33; 95% CI, 1.67-6.64), and gastrointestinal disturbances (odds ratio, 2.05; 95% CI, 1.14-3.68) within 48 hours after admission to the PICU. Delayed enteral nutrition was associated with failure to reach full enteral nutrition while in the PICU (odds ratio, 4.09; 95% CI, 1.97-8.53). Nutrition consults were obtained in less than half of the cases, and none of the PICUs used tools to assure the adequacy of energy and protein nutrition. Institutions in this study initiated enteral nutrition for a high percentage of patients by 48 hours of admission. Noninvasive positive-pressure ventilation was most strongly associated with delay enteral nutrition. A better understanding of these risk factors and assessments of nutritional requirements should be explored in future prospective studies.

Title: Development of a new risk score for hospital-associated venous thromboembolism in critically-ill children not undergoing cardiothoracic surgery

Citation: Thrombosis Research, October 2015, vol./is. 136/4(717-722), 0049-3848;1879-2472 (01 Oct 2015)


Abstract: Background Although risk of hospital-associated venous thromboembolism (HA-VTE) differs between critically and non-critically ill children, studies to date have not led to distinct, pragmatic risk scores. Objective To determine risk factors for HA-VTE in critically ill children not undergoing cardiothoracic surgery, in order to derive a novel HA-VTE risk score for this population. Methods We conducted a retrospective analysis from January 2006 through April 2013 at All Children's Hospital Johns Hopkins Medicine. HA-VTE cases were identified using ICD-9 discharge diagnosis codes, with subsequent validation via radiologic record review. Cases were restricted to Pediatric Intensive Care Unit (PICU) admissions. Patients who underwent cardiothoracic surgery were excluded; cardiac catheterization per se was not exclusionary. For each case, three non-HA-VTE PICU controls were randomly selected. Data were abstracted on putative risk factors, and associations between risk factors and HA-VTE were estimated using odds ratios (ORs) and 95% confidence intervals (95%CIs). Results There were 57 HA-VTE cases and 171 controls. HA-VTE occurrence was 3 per 1000 PICU admissions (0.3%). Central venous catheter (CVC) (OR:26.64; 95%CI:7.46-95.13), length of stay (LOS) > 4 days (OR:20.22; 95%CI:2.27-180.07), and significant infection (OR:3.41; 95%CI:1.13-10.29) were independent, statistically-significant risk factors for HA-VTE in a multivariate model. A risk score was derived in which HA-VTE risk exceeded 2% (threshold for anticoagulant thromboprophylaxis in hospitalized adults) with a score of 15, and was >1% but <2% (risk zone for mechanical thromboprophylaxis in hospitalized adults) with scores of 7-14. Conclusion The presence of a CVC, LOS > 4 days and infection are significant risk factors for HA-VTE in critically ill children not undergoing cardiothoracic surgery, forming the basis for a new risk score that warrants prospective validation.
**Title:** Unplanned Readmission to the Pediatric Cardiac Intensive Care Unit: Prevalence, Outcomes, and Risk Factors.

**Citation:** World journal for pediatric & congenital heart surgery, Oct 2015, vol. 6, no. 4, p. 597-603 (October 2015)

**Author(s):** Brunetti, Marissa A, Glatz, Andrew C, McCardle, Ken, Mott, Antonio R, Ravishankar, Chitra, Gaynor, J William

**Abstract:** Factors leading to cardiac intensive care unit (CICU) readmission and the impact on mortality have yet to be well delineated. We sought to define the prevalence and outcome for unscheduled CICU readmission. Secondary objectives were to identify indications and risk factors for unscheduled CICU readmission. Retrospective analysis of prospectively collected registry data at a tertiary care children’s hospital. Pediatric and adult patients with congenital and acquired heart disease who survived to initial CICU discharge were included. Patients with unexpected return to the CICU for acute change in clinical status were defined as unscheduled readmissions. Of the 645 discharges that met inclusion criteria, 37 resulted in unplanned readmission to the CICU. Patients requiring unscheduled readmission had higher mortality rates (16.2% vs 0.5%, P < .0001). Cardiac symptoms were the most common reason for readmission. On multivariate analysis, genetic anomaly (P = .001) and longer length of stay (LOS) during the index CICU admission (P = .01) were independently associated with readmission. For surgical patients, genetic anomaly (P = .001), single-ventricle anatomy (P = .05), and longer surgical support time (P < .001) were independently associated with readmission. Unscheduled readmission to the CICU within the same hospitalization was uncommon but associated with a higher mortality rate. Genetic anomaly and longer initial LOS were important risk factors for the entire cohort. Single-ventricle anatomy and longer intraoperative course were risk factors for surgical readmissions. © The Author(s) 2015.

**Title:** Intensive care unit admissions among children after hematopoietic stem cell transplantation: Incidence, outcome, and prognostic factors

**Citation:** Journal of Pediatric Hematology/Oncology, October 2015, vol./is. 37/7(529-535), 1077-4114;1536-3678 (01 Oct 2015)

**Author(s):** Fernandez-Garcia M., Gonzalez-Vicent M., Mastro-Martinez I., Serrano A., Diaz M.A.

**Abstract:** We retrospectively analyzed posttransplantation events in 299 children who underwent hematopoietic stem cell transplantation between 2005 and 2011 in order to ascertain the incidence of life-threatening complications requiring pediatric intensive care unit (PICU) admission, the contributing risk factors, and the patient's long-term survival. Sixty-eight patients (23%) were admitted to the PICU. Risks factors associated with higher cumulative incidence of PICU admission on univariate analysis were nonmalignant disease, status at transplantation, type of transplant, source of stem cell, engraftment syndrome (ES), venoocclusive disease, acute graft versus host disease (GvHD), chronic GvHD, thrombotic microangiopathy, bronchiolitis obliterans, hemorrhagic cystitis, and posterior reversible encephalopathy syndrome (PRES). On multivariate analysis, only ES, acute GvHD, transplant-associated thrombotic microangiopathy (TA-TMA), and PRES were statistically significant. The variables that had a negative impact on survival, on univariate analysis, were allogeneic transplant, age, male sex, a high O-PRISM score, a high O-PRISM3 score, engraftment failure, acute GvHD, TA-TMA, hemorrhagic cystitis, and PRES. On multivariate analysis, only age, allogeneic transplant, engraftment failure, acute GvHD, TA-TMA, and hemorrhagic cystitis
had a negative impact on survival. In conclusion, our report provides new findings regarding life-threatening complications after hematopoietic transplantation for PICU admission and survival after that in a pediatric population.

Title: Innovation in Pediatric Cardiac Intensive Care: An Exponential Convergence Toward Transformation of Care.

Citation: World journal for pediatric & congenital heart surgery, Oct 2015, vol. 6, no. 4, p. 588-596 (October 2015)

Author(s): Maher, Kevin O, Chang, Anthony C, Shin, Andrew, Hunt, Juliette, Wong, Hector R

Abstract: The word innovation is derived from the Latin noun innovatus, meaning renewal or change. Although companies such as Google and Apple are nearly synonymous with innovation, virtually all sectors in our current lives are imbued with yearn for innovation. This has led to organizational focus on innovative strategies as well as recruitment of chief innovation officers and teams in a myriad of organizations. At times, however, the word innovation seems like an overused cliché, as there are now more than 5,000 books in print with the word "innovation" in the title. More recently, innovation has garnered significant attention in health care. The future of health care is expected to innovate on a large scale in order to deliver sustained value for an overall transformative care. To date, there are no published reports on the state of the art in innovation in pediatric health care and in particular, pediatric cardiac intensive care. This report will address the issue of innovation in pediatric medicine with relevance to cardiac intensive care and delineate possible future directions and strategies in pediatric cardiac intensive care. © The Author(s) 2015.

Title: Performance of PRISM III and PELOD-2 scores in a pediatric intensive care unit.

Citation: European journal of pediatrics, Oct 2015, vol. 174, no. 10, p. 1305-1310 (October 2015)

Author(s): Gonçalves, Jean-Pierre, Severo, Milton, Rocha, Carla, Jardim, Joana, Mota, Teresa, Ribeiro, Augusto

Abstract: The study aims were to compare two models (The Pediatric Risk of Mortality III (PRISM III) and Pediatric Logistic Organ Dysfunction (PELOD-2)) for prediction of mortality in a pediatric intensive care unit (PICU) and recalibrate PELOD-2 in a Portuguese population. To achieve the previous goal, a prospective cohort study to evaluate score performance (standardized mortality ratio, discrimination, and calibration) for both models was performed. A total of 556 patients consecutively admitted to our PICU between January 2011 and December 2012 were included in the analysis. The median age was 65 months, with an interquartile range of 1 month to 17 years. The male-to-female ratio was 1.5. The median length of PICU stay was 3 days. The overall predicted number of deaths using PRISM III score was 30.8 patients whereas that by PELOD-2 was 22.1 patients. The observed mortality was 29 patients. The area under the receiver operating characteristics curve for the two models was 0.92 and 0.94, respectively. The Hosmer and Lemeshow goodness-of-fit test showed a good calibration only for PRISM III (PRISM III: χ (2) = 3.820, p = 0.282; PELOD-2: χ (2) = 9.576, p = 0.022). Both scores had good discrimination. PELOD-2 needs recalibration to be a better reliable prediction tool. • PRISM III (Pediatric Risk of Mortality III) and PELOD (Pediatric Logistic Organ Dysfunction) scores are frequently used to assess the performance of intensive care units and also for mortality prediction in the pediatric population. • Pediatric Logistic Organ Dysfunction 2 is the newer version of PELOD and has recently been validated with good
discrimination and calibration. What is New: • In our population, both scores had good discrimination. • PELOD-2 needs recalibration to be a better reliable prediction tool.

Title: Analysis of medication prescribing errors in critically ill children.

Citation: European journal of pediatrics, Oct 2015, vol. 174, no. 10, p. 1347-1355 (October 2015)

Author(s): Glanzmann, Corina, Frey, Bernhard, Meier, Christoph R, Vonbach, Priska

Abstract: Medication prescribing errors (MPE) can result in serious consequences for patients. In order to reduce errors, we need to know more about the frequency, the type and the severity of such errors. We therefore performed a prospective observational study to determine the number and type of medication prescribing errors in critically ill children in a paediatric intensive care unit (PICU). Prescribing errors were prospectively identified by a clinical pharmacist. A total of 1129 medication orders were analysed. There were 151 prescribing errors, giving an overall error rate of 14 % (95 % CI 11 to 16). The medication groups with the highest proportion of MPEs were antihypertensives, antimycotics and drugs for nasal preparation with error rates of each 50 %, followed by antiasthmatic drugs (25 %), antibiotics (15 %) and analgesics (14 %). One hundred four errors (70 %) were classified as MPEs which required interventions and/or resulted in patient harm equivalent to 9 % of all medication orders (95 % CI 6.5 to 14.4). Forty-five MPEs (30 %) did not result in patient harm. With a view to reduce MPEs and to improve patient safety, our data may help to prevent errors before they occur. • Prescribing errors may be the most frequent medication errors. • In paediatric populations, the incidence of prescribing errors is higher than in adults. What is New: • Several risk factors for medication prescribing errors, such as medication groups, long PICU stay, and mechanical ventilation could be presented. • Analysing the combination of the most frequent prescribing errors and the severity of these errors.

Title: Red blood cell transfusion is associated with increased hemolysis and an acute phase response in a subset of critically ill children.

Citation: American journal of hematology, Oct 2015, vol. 90, no. 10, p. 915-920 (October 2015)

Author(s): L’Acqua, Camilla, Bandyopadhyay, Sheila, Francis, Richard O, McMahon, Donald J, Nellis, Marianne, Sheth, Sujit, Kernie, Steven G, Brittenham, Gary M, Spitalnik, Steven L, Hod, Eldad A

Abstract: In healthy adults, transfusion of older stored red blood cells (RBCs) produces extravascular hemolysis and circulating non-transferrin-bound iron. In a prospective, observational study of critically ill children, we examined the effect of RBC storage duration on the extent of hemolysis by comparing laboratory measurements obtained before, and 4 hr after, RBC transfusion (N = 100) or saline/albumin infusion (N = 20). Transfusion of RBCs stored for longer than 4 weeks significantly increased plasma free hemoglobin (P < 0.05), indirect bilirubin (P < 0.05), serum iron (P < 0.001), and non-transferrin-bound iron (P < 0.01). However, days of storage duration poorly correlated (R^2 <0.10) with all measured indicators of hemolysis and inflammation. These results suggest that, in critically ill children, most effects of RBC storage duration on post-transfusion hemolysis are overwhelmed by recipient and/or donor factors. Nonetheless, we identified a subset of patients (N = 21) with evidence of considerable extravascular hemolysis (i.e., increased indirect bilirubin ≥0.4 mg/dL). In these patients, transfusion-associated hemolysis was accompanied by increases in circulating non-transferrin-bound iron and free hemoglobin and by an acute phase response, as assessed by an increase in median C-reactive protein levels of 21.2 mg/L (P < 0.05). In summary, RBC
transfusions were associated with an acute phase response and both extravascular and intravascular hemolysis, which were independent of RBC storage duration. The 21% of transfusions that were associated with substantial hemolysis conferred an increased risk of inducing an acute phase response. Am. J. Hematol. 90:915-920, 2015.

Title: Inadequate vitamin D levels are associated with culture positive sepsis and poor outcomes in paediatric intensive care.


Author(s): Onwuneme, Chike, Carroll, Aoife, Doherty, Dermot, Bruell, Heike, Segurado, Ricardo, Kilbane, Mark, Murphy, Nuala, McKenna, Malachi J, Molloy, Eleanor J

Abstract: This study aimed to assess vitamin D status, and its determinants, in paediatric patients with suspected sepsis who were admitted to a paediatric intensive care unit (PICU). We also investigated the association between vitamin D status and clinical outcomes. Serum 25-hydroxy vitamin D (25OHD) and clinical determinants were prospectively assessed in children with suspected sepsis (<12 years old) admitted to the PICU. The relationship between 25OHD and clinical outcomes was evaluated. Vitamin D status was also assessed in control children of a similar age. We enrolled 120 children with suspected sepsis admitted to the PICU and 30 paediatric controls. 25OHD was <50 nmol/L in 59% of the children admitted to the PICU and 25OHD was lower than in the controls (47 ± 29 vs 66 ± 26 nmol/L, p < 0.001). After adjusting for potential confounders, 25OHD was strongly associated with culture positive sepsis (p < 0.001), the paediatric index of mortality (p = 0.026) and the duration of mechanical ventilation (p = 0.008). There was a negative correlation between 25OHD and C-reactive protein (CRP): each 0.1% decrease in 25OHD increased CRP (p = 0.04). Children admitted to the PICU with suspected sepsis had lower 25OHD than controls and inadequate 25OHD status was associated with confirmed sepsis and poor outcomes.


Citation: American journal of infection control, Oct 2015, vol. 43, no. 10, p. 1114-1115 (October 1, 2015)

Author(s): Teppa, Beatriz E, Stockwell, Jana A

Abstract: Catheter-associated urinary tract infections represent a significant medical burden in critically ill children. Ethanol locks have been shown to be effective and safe for central line-associated bloodstream infection prevention and we propose utilizing this strategy for urinary catheters. Because this has never been done, we evaluated its safety with a pilot study hypothesizing that ethanol locks in urinary catheters would result in negligible alcohol absorption and negligible irritation of the bladder.

Title: Arrhythmias in the paediatric intensive care unit: a prospective study of the rates and predictors of arrhythmias in children without underlying cardiac disease.

Citation: Cardiology in the young, Oct 2015, vol. 25, no. 7, p. 1281-1289 (October 2015)
Author(s): Cassel-Choudhury, Gina N, Aydin, Scott I, Toedt-Pingel, Iris, Ushay, H Michael, Killinger, James S, Cohen, Hillel W, Ceresnak, Scott R

Abstract: Arrhythmias are common in patients admitted to the paediatric intensive care unit. We sought to identify the rates of occurrence and types of arrhythmias, and determine whether an arrhythmia was associated with illness severity and paediatric intensive care unit length of stay. This is a prospective, observational study of all patients admitted to the paediatric intensive care unit at the Children’s Hospital at Montefiore from March to June 2012. Patients with cardiac disease or admitted for the treatment of primary arrhythmias were excluded. Clinical and laboratory data were collected and telemetry was reviewed daily. Tachyarrhythmias were identified as supraventricular tachycardia, ventricular tachycardia, and arrhythmias causing haemodynamic compromise or for which an intervention was performed. A total of 278 patients met the inclusion criteria and were analysed. There were 97 incidences of arrhythmia in 53 patients (19%) and six tachyarrhythmias (2%). The most common types of arrhythmias were junctional rhythm (38%), premature atrial contractions (24%), and premature ventricular contractions (22%). Tachyarrhythmias included three supraventricular tachycardia (50%) and three ventricular tachycardia (50%). Of the six tachyarrhythmias, four were related to placement or migration of central venous lines and two occurred during aminophylline infusion. Patients with an arrhythmia had longer duration of mechanical ventilation and paediatric intensive care unit stay (p<0.001). In multivariate analysis, central venous lines (odds ratio 3.1; 95% confidence interval 1.3-7.2, p=0.009) and aminophylline use (odds ratio 5.1; 95% confidence interval 1.7-14.9, p=0.003) were independent predictors for arrhythmias. Arrhythmias were common in paediatric intensive care unit patients (19%), although tachyarrhythmias occurred rarely (2%). Central venous lines and use of aminophylline were identified as two clinical factors that may be associated with development of an arrhythmia.

Title: Changes to Workflow and Process Measures in the PICU During Transition From Semi to Full Electronic Health Record.


Author(s): Salib, Mina, Hoffmann, Raymond G, Dasgupta, Mahua, Zimmerman, Haydee, Hanson, Sheila

Abstract: Studies showing the changes in workflow during transition from semi to full electronic medical records are lacking. This objective study is to identify the changes in workflow in the PICU during transition from semi to full electronic health record. Prospective observational study. Children’s Hospital of Wisconsin Institutional Review Board waived the need for approval so this study was institutional review board exempt. This study measured clinical workflow variables at a 72-bed PICU during different phases of transition to a full electronic health record, which occurred on November 4, 2012. Phases of electronic health record transition were defined as follows: pre-electronic health record (baseline data prior to transition to full electronic health record), transition phase (3 wk after electronic health record), and stabilization (6 mo after electronic health record). Data were analyzed for the three phases using Mann-Whitney U test with a two-sided p value of less than 0.05 considered significant. Seventy-two bed PICU. All patients in the PICU were included during the study periods. Five hundred and sixty-four patients with 2,355 patient days were evaluated in the three phases. Duration of rounds decreased from a median of 9 minutes per patient pre-electronic health record to 7 minutes per patient post electronic health record. Time to final note decreased from 2.06 days pre-electronic health record to 0.5 days post electronic health records.
record. Time to first medication administration after admission also decreased from 33 minutes pre-electronic health record and 7 minutes post electronic health record. Time to medication reconciliation completion was significantly higher pre-electronic health record than post electronic health record and percent of medication reconciliation completion was significantly higher pre-electronic health record than. There was no significant change in time between placement of discharge order and physical transfer from the unit. Transition from partial to full electronic health record significantly changes clinical workflow in a PICU with decreased duration of rounds, time to final note, time to medication administration, and time to medication reconciliation completion. There was no change in the duration from medical to physical transfer.

**Title:** Developing a Family-Centered Care Model for Critical Care After Pediatric Traumatic Brain Injury.

**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, Oct 2015, vol. 16, no. 8, p. 758-765, 1529-7535 (October 2015)

**Author(s):** Moore, Megan, Robinson, Gabrielle, Mink, Richard, Hudson, Kimberly, Dotolo, Danae, Gooding, Tracy, Ramirez, Alma, Zatzick, Douglas, Giordano, Jessica, Crawley, Deborah, Vavilala, Monica S

**Abstract:** This study examined the family experience of critical care after pediatric traumatic brain injury in order to develop a model of specific factors associated with family-centered care. Qualitative methods with semi-structured interviews were used. Two level 1 trauma centers. Fifteen mothers of children who had an acute hospital stay after traumatic brain injury within the last 5 years were interviewed about their experience of critical care and discharge planning. Participants who were primarily English, Spanish, or Cantonese speaking were included. None. Content analysis was used to code the transcribed interviews and develop the family-centered care model. Three major themes emerged: 1) thorough, timely, compassionate communication, 2) capacity building for families, providers, and facilities, and 3) coordination of care transitions. Participants reported valuing detailed, frequent communication that set realistic expectations and prepared them for decision making and outcomes. Areas for capacity building included strategies to increase provider cultural humility, parent participation in care, and institutional flexibility. Coordinated care transitions, including continuity of information and maintenance of partnerships with families and care teams, were highlighted. Participants who were not primarily English speaking reported particular difficulty with communication, cultural understanding, and coordinated transitions. This study presents a family-centered traumatic brain injury care model based on family perspectives. In addition to communication and coordination strategies, the model offers methods to address cultural and structural barriers to meeting the needs of non-English-speaking families. Given the stress experienced by families of children with traumatic brain injury, careful consideration of the model themes identified here may assist in improving overall quality of care to families of hospitalized children with traumatic brain injury.

**Title:** Quality Metrics in Neonatal and Pediatric Critical Care Transport: A National Delphi Project.

**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, Oct 2015, vol. 16, no. 8, p. 711-717, 1529-7535 (October 2015)
Author(s): Schwartz, Hamilton P, Bigham, Michael T, Schoettker, Pamela J, Meyer, Keith, Trautman, Michael S, Insoft, Robert M, American Academy of Pediatrics Section on Transport Medicine

Abstract: The transport of neonatal and pediatric patients to tertiary care facilities for specialized care demands monitoring the quality of care delivered during transport and its impact on patient outcomes. In 2011, pediatric transport teams in Ohio met to identify quality indicators permitting comparisons among programs. However, no set of national consensus quality metrics exists for benchmarking transport teams. The aim of this project was to achieve national consensus on appropriate neonatal and pediatric transport quality metrics. Modified Delphi technique. The first round of consensus determination was via electronic mail survey, followed by rounds of consensus determination in-person at the American Academy of Pediatrics Section on Transport Medicine's 2012 Quality Metrics Summit. All attendees of the American Academy of Pediatrics Section on Transport Medicine Quality Metrics Summit, conducted on October 21-23, 2012, in New Orleans, LA, were eligible to participate. Candidate quality metrics were identified through literature review and those metrics currently tracked by participating programs. Participants were asked in a series of rounds to identify "very important" quality metrics for transport. It was determined a priori that consensus on a metric's importance was achieved when at least 70% of respondents were in agreement. This is consistent with other Delphi studies. Eighty-two candidate metrics were considered initially. Ultimately, 12 metrics achieved consensus as "very important" to transport. These include metrics related to airway management, team mobilization time, patient and crew injuries, and adverse patient care events. Definitions were assigned to the 12 metrics to facilitate uniform data tracking among programs. The authors succeeded in achieving consensus among a diverse group of national transport experts on 12 core neonatal and pediatric transport quality metrics. We propose that transport teams across the country use these metrics to benchmark and guide their quality improvement activities.

Title: High fidelity patient simulation as an educational tool in paediatric intensive care: A systematic review.

Citation: Nurse education today, Oct 2015, vol. 35, no. 10, p. e8. (October 2015)

Author(s): O'Leary, Jessica A, Nash, Robyn, Lewis, Peter A

Abstract: The aim of this study was to examine the use of high fidelity patient simulation (HFPS) in paediatric intensive care nursing education through the use of a systematic literature review. A systematic search was undertaken in the electronic databases CINAHL (via EBSCOhost), Medline and Pubmed, ClinicalKey, Science Direct and OVID. Electronic searches were supplemented by hand searches of journals, individual article reference lists and the World Wide Web. Main outcome measures were learner outcomes. The search was limited to papers published in English between 2000 and 2015. Eight papers satisfied the inclusion criteria of the review. Studies included in the review ranged from moderate to low on the quality assessment scale. HFPS training was associated with improved short-term learner outcomes of various measures, however this should be considered with the small number of studies examining this topic and the scarcity of high quality randomised studies. The evidence of improved learner outcomes following HFPS training in paediatric intensive care (PICU) nursing education should be considered together with the quality and methodological limitations of existing research. There was no evidence of negative effects. The direction of research suggests that HFPS is a useful tool in the education of PICU nurses. Copyright © 2015 Elsevier Ltd. All rights reserved.
Library Opening Times

Staffed times 8.00 am—17.00 pm
Monday to Friday

Swipe Access 7.00 am—23.00pm
7 days a week

Level 5,
Education Centre
University Hospitals Bristol

Contact the PICU Outreach librarian:
katie.barnard@uhbristol.nhs.uk