PICU
Current Awareness Newsletter

December 2014
**Outreach**

Your Outreach Librarian can help facilitate evidence-based practise for all PICU members of 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.

**Books**

Books can be searched for using SWIMS our online catalogue at [www.swims.nhs.uk](http://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: thomas.osborne@uhbristol.nhs.uk
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Tables of Contents from Paediatric & Critical Care journals

If you require full articles please email me @ Thomas.Osborne@UHBristol.nhs.uk

**Pediatrics** Pediatrics Vol. 134 No. 6 December 1, 2014

Parent-Implemented Social Intervention for Toddlers With Autism: An RCT
Age-Based Risk Factors for Pediatric ATV-Related Fatalities
Sex-Related Online Behaviors and Adolescents’ Body and Sexual Self-Perceptions
Early Developmental Outcomes of Children With Congenital HHV-6 Infection
Unconditional Regard Buffers Children’s Negative Self-Feelings
Pediatric Exposure to Laundry Detergent Pods
Variability in ADHD Care in Community-Based Pediatrics
Duration of Rhinovirus Shedding in the Upper Respiratory Tract in the First Year of Life
Postnatal Growth Following Prenatal Lead Exposure and Calcium Intake
Primary Ciliary Dyskinesia and Neonatal Respiratory Distress
Regulations to Promote Healthy Sleep Practices in Child Care
Sinusitis and Pneumonia Hospitalization After Introduction of Pneumococcal Conjugate Vaccine
Validation of a Clinical Prediction Rule for Pediatric Abusive Head Trauma
Disability-Adjusted Life-Year Burden of Abusive Head Trauma at Ages 0-4
Changes in Child Mortality Over Time Across the Wealth Gradient in Less-Developed Countries
Cyber Dating Abuse Among Teens Using School-Based Health Centers
A Comparison of Interferon-γ and IP-10 for the Diagnosis of Tuberculosis
Adolescent Vaccine Co-administration and Coverage in New York City: 2007-2013
Cerebral Palsy Among Children Born Moderately and Late Preterm
Motor Severity in Children With Cerebral Palsy Studied in a High-Resource and Low-Resource Country
Gender Differences in Adult-Infant Communication in the First Months of Life
A Randomized Trial on Screening for Social Determinants of Health: the iScreen Study
Growth Hormone Therapy, Muscle Thickness, and Motor Development in Prader-Willi Syndrome: An RCT
The Missing Link of NIH Funding in Pediatric Research Training Program Restructuring
Advocating for Advocacy in Pediatrics: Supporting Lifelong Career Trajectories
Sinusitis and Pneumonia Hospitalization After Introduction of Pneumococcal Conjugate Vaccine
Validation of a Clinical Prediction Rule for Pediatric Abusive Head Trauma
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Growth Hormone Therapy, Muscle Thickness, and Motor Development in Prader-Willi Syndrome: An RCT
Preventing Hospitalizations in Children With Medical Complexity: A Systematic Review
Measuring the “Triple Aim” in Transition Care: A Systematic Review
Evacuation of a Neonatal Intensive Care Unit in a Disaster: Lessons From Hurricane Sandy
Developing Competencies for Pediatric Hospice and Palliative Medicine
Preventing CLABSIs Among Pediatric Hematology/Oncology Inpatients: National Collaborative Results
A Team-Based Approach to Reducing Cardiac Monitor Alarms
Kawasaki Shock Syndrome Complicating a Recurrence of Kawasaki Disease
Ablative Fractional Laser Resurfacing Helps Treat Restrictive Pediatric Scar Contractures
Anti-DFS70 Antibodies: A Useful Biomarker in a Pediatric Case With Suspected Autoimmune Disease
Cobalamin C Deficiency in an Adolescent With Altered Mental Status and Anorexia
Headaches as a Presenting Symptom of Linear Morphea en Coup de Sabre
Recalcitrant Hypocalcaemia in Autoimmune Enteropathy
Chronic Granulomatous Disease Presenting as Hemophagocytic Lymphohistiocytosis: A Case Report
Case Report of PET/CT Imaging of a Patient With Neuroblastoma Using 18F-FPBG
Atopic Dermatitis: Skin-Directed Management
Nonoral Feeding for Children and Youth With Developmental or Acquired Disabilities
Interferon-[gamma] Release Assays for Diagnosis of Tuberculosis Infection and Disease in Children
Appropriate Use Criteria for Initial Transthoracic Echocardiography in Outpatient

PediatricCardiologyEvidence-Based Management of Sickle Cell Disease: Expert Panel Report, 2014
Murky Definitions, Missing Data Prevent Meaningful Conclusions
Study on Sleep Location Flawed, Inconclusive
Risk Factors and a True Cause of SIDS
In Reply to the Letters From Smith et al and Bartick et al
In Reply to the Letter From Dr Cutz
Severe RSV Disease in Preterm Infants Born at 29 to 35 Weeks' Gestation in the United States
Re: Technical Report
Authors' Responses In Response to the Letter From Ambrose
In Response to the Letter From Braden
Pediatrics Digest
Changes in Obesity Between Fifth and Tenth Grades: A Longitudinal Study in Three Metropolitan Areas
Race, Otitis Media, and Antibiotic Selection
Health Outcomes in Young Adults From Foster Care and Economically Diverse Backgrounds
Very Low Birth Weight, Infant Growth, and Autism-Spectrum Traits in Adulthood
Chinese Pediatricians Face a Crisis: Should They Stay or Leave?
Should We Mend Their Broken Hearts? The History of Cardiac Repairs in Children With Down Syndrome
Changes in Obesity Between Fifth and Tenth Grades: A Longitudinal Study in Three Metropolitan Areas
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Health Outcomes in Young Adults From Foster Care and Economically Diverse Backgrounds
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Parent-Implemented Social Intervention for Toddlers With Autism: An RCT
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Postnatal Growth Following Prenatal Lead Exposure and Calcium Intake
Primary Ciliary Dyskinesia and Neonatal Respiratory Distress
Regulations to Promote Healthy Sleep Practices in Child Care
Medication Adherence Among Pediatric Patients With Sickle Cell Disease: A Systematic Review
Psychological and Medical Care of Gender Nonconforming Youth
Becoming Certified in "Pediatrics": What Every Pediatrician Needs to Do
Variation in Antimicrobial Prescribing for Otitis Media by Race: Different Wrinkle in Disparity?

01 December 2014, 09:01:35

01 December 2014, 09:01:35
Maintaining and Improving the Oral Health of Young Children
Immunization for Streptococcus pneumoniae Infections in High-Risk Children


Editorial introductions
International adoption of children with birth defects: current knowledge and areas for further research
The National Institutes of Health undiagnosed diseases program
Advances in genetic prenatal diagnosis and screening
An approach to pediatric exome and genome sequencing
Copy number variations and human genetic disease
Status epilepticus in children
Pediatric status epilepticus: identification and evaluation
Consequences of febrile seizures in childhood
Pediatric status epilepticus management
Continuous electroencephalography for seizures and status epilepticus
Continuous infusion, general anesthesia and other intensive care treatment for uncontrolled status epilepticus
Multiple intestinal atresia with combined immune deficiency
Hyper-IgE syndromes: reviewing PGM3 deficiency
Human IL-21 and IL-21R deficiencies: two novel entities of primary immunodeficiency
X-linked immunodeficiency with magnesium defect, Epstein–Barr virus infection, and neoplasia disease: a combined immune deficiency with magnesium defect
Human T follicular helper cells in primary immunodeficiencies
Recent advances in the understanding and management of long QT syndrome
Important considerations for the newborn: access to postdischarge newborn care, pulse oximetry screening for congenital heart disease, and circumcision

Current Opinion on Critical Care  December 2014 - Volume 20 - Issue 6 - p 668-672

Editorial introductions
Diagnosis of acute kidney injury: Kidney Disease Improving Global Outcomes criteria and beyond
Sepsis-induced acute kidney injury revisited: pathophysiology, prevention and future therapies
Contrast-associated AKI in the critically ill: relevant or irrelevant?
Renal disease presenting as acute kidney injury: the diagnostic conundrum on the intensive care unit
Systemic consequences of acute kidney injury
Recent developments in the assessment of the multiply injured trauma patient
Airway and ventilator management in trauma patients
Fluid resuscitation and vasopressors in severe trauma patients
Acute traumatic coagulopathy
Transfusion strategy in multiple trauma patients
Economic implications of end-of-life care in the ICU
Default options in the ICU: widely used but insufficiently understood
Approaches to patients and families with strong religious beliefs regarding end-of-life care
Integrating palliative care in the ICU
Current controversies in the support of sepsis
PCCM 2014: Extracorporeal Support and More
Pediatric Severe Sepsis in U.S. Children’s Hospitals*
RBC Transfusion in Pediatric Patients Supported With Extracorporeal Membrane Oxygenation: Is There an Impact on Tissue Oxygenation?*
An Epidemiologic Survey of Pediatric Sepsis in Regional Hospitals in China*
Pediatric Intensive Care Outcomes: Development of New Morbidities During Pediatric Critical Care*
Pediatric Severe Sepsis: Current Trends and Outcomes From the Pediatric Health Information Systems Database*
Comparative Effectiveness of Digoxin and Propranolol for Supraventricular Tachycardia in Infants*
Greater Fluctuations in Serum Sodium Levels Are Associated With Increased Mortality in Children With Externalized Ventriculostomy Drains in a PICU*
Implementation of an Extracorporeal Cardiopulmonary Resuscitation Simulation Program Reduces Extracorporeal Cardiopulmonary Resuscitation Times in Real Patients*
Extubation During Pediatric Extracorporeal Membrane Oxygenation: A Single-Center Experience*
Predictors of Mortality in Pediatric Patients on Venoarterial Extracorporeal Membrane Oxygenation*
Pediatric Perioperative Cardiac Arrest and Mortality: A Study From a Tertiary Teaching Hospital*
Sedation Guidelines, Protocols, and Algorithms in PICUs: A Systematic Review
Sepsis or SEPSIS: Does It Make a Difference?*
How to Guide Transfusion Decision-Making? That Is the Question*
The Tremendous Burden of Sepsis on China’s Youngest Children*
Are We Exchanging Morbidity for Mortality in Pediatric Intensive Care?*
Sepsis in Children: A Dark Cloud With a Silver Lining*
Treatment of a Mostly Self-Limiting Disease: Keep It Simple and Safe*
Connecting the Dots: From Time Point to Trajectory Analysis of Serum Sodium Levels in Pediatric Neurologic Injury*
Enhancing the Power of Simulation for Complex Clinical Care*
Extubation and Extracorporeal Membrane Oxygenation: What a Difference a Decade Makes!!*
Is This Heart Going to Work?*
Pediatric Perioperative Outcomes in the Developing World: Where Are We Now?*
Diastolic Dysfunction in Children With Septic Shock: Does It Help Us Manage Our Patients?*
Liquid Ventilation in Congenital Diaphragmatic Hernia: Back on Stage?*
What Are the New Perspectives in Rehabilitation in the PICU Using Traditional Techniques?*
The author replies
What Is the Meaning of Hypertension in the PICU?*
The authors reply
Prevalence and Outcome of Diastolic Dysfunction in Children With Fluid Refractory Septic Shock—A Prospective Observational Study*
Intrapulmonary Instillation of Perflurooctylbromide Improves Lung Growth, Alveolarization, and Lung Mechanics in a Fetal Rabbit Model of Diaphragmatic Hernia*
Increase in Oxygen Consumption After Albuterol Inhalation in Ventilated Infants and Children
National Conference & Exhibition October 12, 2014 — San Diego, CA
Online Abstract Translations

Monitoring depth of anesthesia: from consciousness to nociception. A window on subcortical brain activity
Bradycardia in perspective—not all reductions in heart rate need immediate intervention
Novel use of foley catheter to reduce leak around endotracheal tube in a child with temporo-mandibular joint ankylosis

Pediatric Anesthesia Volume 24, Issue 12
Pages 1199–1317
Reply to comments on our paper ‘Does the Miller blade truly provide a better laryngoscopic view and intubating conditions than the Macintosh blade in small children?’

Reviewers List

Pediatric airway management in the emergency department: in urgent need of CPR
Retrospective evaluation of antimicrobial prophylaxis in prevention of surgical site infection in the pediatric population
Is anesthetic exposure in early life associated with ADHD?
Three-Finger Tracheal Palpation to guide endotracheal tube depth in children
Harm attributable to research distraction? Challenging conclusions on caudal epinephrine
The pharmacology of resuscitation training – time for a new treatment plan
The ‘Can’t Intubate Can’t Oxygenate’ scenario in pediatric anesthesia: a comparison of the Melker cricothyroidotomy kit with a scalpel bougie technique
Are new supraglottic airway devices, tracheal tubes and airway viewing devices cost-effective?
Perioperative respiratory complications following awake and deep extubation in children undergoing adenotonsillectomy

New NICE Guidance

Management of vomiting in children and young people with gastroenteritis: ondansetron (ESUOM34) October 2014
Antibiotics for neonatal infection (GID-QSD78) December 2014

Latest relevant Systematic Reviews from the Cochrane Library

If you require full articles, or a more enhanced search of any of the below topics please email me @ Thomas.Osborne@UHBristol.nhs.uk

Universal school-based prevention for illicit drug use
Fabrizio Faggiano, Silvia Minozzi, Elisabetta Versino and Daria Buscemi
December 2014

Interventions for treating inadvertent postoperative hypothermia
Sheryl Warttig, Phil Alderson, Gillian Campbell and Andrew F Smith
November 2014

Negative pressure wound therapy for managing the open abdomen after midline laparotomy
Pieter Boele van Hensbroek, Jasper J Atema, Florian Herrle, Marcel GW Dijkgraaf and J Carel Goslings
November 2014
NHS Behind the Headlines

Anxiety affects children in different ways

New activity in Uptodate/DynaMed

Isolated loss of consciousness in children with minor head trauma (October 2014)
Loss of consciousness (LOC) following minor head trauma is frequently used to make decisions regarding neuroimaging. However, new data suggest that the risk of clinically important traumatic brain injury (cTBI) that requires neurosurgical intervention, endotracheal intubation for 24 hours, or hospitalization for at least two days is low in the setting of brief, isolated LOC without any other clinical predictors. In a large multicenter, prospective cohort study of more than 5,000 children with LOC after mild head trauma, 0.5 percent of children with isolated LOC, defined as LOC but otherwise meeting validated clinical predictors indicating very low risk for cTBI (table 2), had cTBI compared with 4 percent of children with LOC and not meeting at least one of these criteria [24]. In this study, duration of LOC longer than five seconds was also associated with significantly greater risk of cTBI. These findings support the conclusion that children with minor head trauma and isolated LOC of less than five seconds do not routinely require neuroimaging. (See "Minor head trauma in infants and children: Evaluation", section on 'Approach' and "Minor head trauma in infants and children: Evaluation", section on 'Loss of consciousness'.)

Emergency department thoracotomy in children (October 2014)
Among adults, survival after emergency thoracotomy for thoracic trauma approaches 20 percent in patients with isolated stab wounds to the heart but is extremely rare in those with blunt trauma, multiple gunshot wounds to the chest, or no signs of life in the field (≤1 percent for each group). Evidence is more limited for outcomes in children. In an observational study of 316 children (mean age 15 years) who underwent thoracotomy within one hour of emergency presentation and were treated in a level one trauma center, 31 percent of patients survived to discharge, including 19 percent of 70 patients with blunt trauma and 34 percent of those with penetrating trauma [25]. Survival dropped to 5 percent in patients presenting with heart rate ≤70 beats per minute or systolic blood pressure ≤50 mmHg, regardless of trauma type. These data suggest that initial vital signs are more important than type of trauma when deciding whether or not to perform emergency thoracotomy in adolescents. (See "Initial evaluation and management of penetrating thoracic trauma in adults", section on 'Overview and survival' and "Initial evaluation and stabilization of children with thoracic trauma", section on 'Emergency department thoracotomy'.)
Diabetes mellitus type 2 in children and adolescents  
RACGP guideline on general practice management of type 2 diabetes (RACGP 2014 Apr)

Invasive candidiasis in infants and children  
older age, decreased weight, lower serum urea concentrations, and oncologic disease each associated with increased risk of subtherapeutic fluconazole trough concentrations in retrospective cohort study of 99 critically ill children with invasive candidiasis (Clin Infect Dis 2014 Dec 1)

Immunizations in children and adolescents  
75% oral sucrose may reduce pain and crying time compared to 25% oral sucrose in healthy young children having routine immunizations

Fever without apparent source in children aged 3-36 months  
point-of-care urine dipstick and automated urinalysis appear accurate in diagnosing UTI in febrile pediatric emergency department patients < 48 months old

Recent PICU Lit Searches

Below is a sample of Literature Searches carried out by our librarians for members of staff in PICU. For further details please email Thomas.Osborne@UHBristol.nhs.uk

Bone mineral density deficits and fractures in survivors of childhood cancer
Adolescents nutritional intake cancer treatment
Cooling children after trauma or TBI or cardiac surgery
2 week suspected cancer referral system used both in adults and children
Festive Reading

Were James Bond’s drinks shaken because of alcohol induced tremor?

*BMJ* 2013; 347 doi: http://dx.doi.org/10.1136/bmj.f7255 (Published 12 December 2013)

Abstract

**Objective** To quantify James Bond’s consumption of alcohol as detailed in the series of novels by Ian Fleming.

**Design** Retrospective literature review.

**Setting** The study authors’ homes, in a comfy chair.

**Participants** Commander James Bond, 007; Mr Ian Lancaster Fleming.

**Main outcome measures** Weekly alcohol consumption by Commander Bond.

**Methods** All 14 James Bond books were read by two of the authors. Contemporaneous notes were taken detailing every alcoholic drink taken. Predefined alcohol unit levels were used to calculate consumption. Days when Bond was unable to consume alcohol (such as through incarceration) were noted.

**Results** After exclusion of days when Bond was unable to drink, his weekly alcohol consumption was 92 units a week, over four times the recommended amount. His maximum daily consumption was 49.8 units. He had only 12.5 alcohol free days out of 87.5 days on which he was able to drink.

**Conclusions** James Bond’s level of alcohol intake puts him at high risk of multiple alcohol related diseases and an early death. The level of functioning as displayed in the books is inconsistent with the physical, mental, and indeed sexual functioning expected from someone drinking this much alcohol. We advise an immediate referral for further assessment and treatment, a reduction in alcohol consumption to safe levels, and suspect that the famous catchphrase “shaken, not stirred” could be because of alcohol induced tremor affecting his hands.

Read @ http://www.bmj.com/content/347/bmj.f7255

Current Awareness Database Articles

*If you require full articles, or a more enhanced search of any of the below topics please email me @ Thomas.Osborne@UHBristol.nhs.uk*
Articles recommended by Dr Peter Davis:

Sepsis-induced acute kidney injury revisited: pathophysiology, prevention and future therapies  
Current Opinion in Critical Care 2014 20(6)  pgs: 588-595

Systemic consequences of acute kidney injury  
Current Opinion in Critical Care 2014 20(6)  pgs: 613-619

Recent developments in the assessment of the multiply injured trauma patient  
Current Opinion in Critical Care 2014 20(6)  pgs: 620-625

Airway and ventilator management in trauma patients  
Current Opinion in Critical Care 2014 20(6)  pgs: 626-631

Fluid resuscitation and vasopressors in severe trauma patients  
Current Opinion in Critical Care 2014 20(6)  pgs: 632-637

Acute traumatic coagulopathy  
Current Opinion in Critical Care 2014 20(6)  pgs: 638-645

Transfusion strategy in multiple trauma patients  
Current Opinion in Critical Care 2014 20(6)  pgs: 646-655

Economic implications of end-of-life care in the ICU  
Current Opinion in Critical Care 2014 20(6)  pgs: 656-661

Default options in the ICU: widely used but insufficiently understood  
Current Opinion in Critical Care 2014 20(6)  pgs: 662-667

Approaches to patients and families with strong religious beliefs regarding end-of-life care  
Current Opinion in Critical Care 2014 20(6)  pgs: 668-672

Integrating palliative care in the ICU  
Current Opinion in Critical Care 2014 20(6)  pgs: 673-680

Current controversies in the support of sepsis  
Current Opinion in Critical Care 2014 20(6)  pgs: 681-684

Pediatric status epilepticus: identification and evaluation  
Current Opinion in Pediatrics 2014 26(6)  pgs: 655-661

Consequences of febrile seizures in childhood  

Pediatric status epilepticus management  
Current Opinion in Pediatrics 2014 26(6)  pgs: 668-674

Continuous electroencephalography for seizures and status epilepticus  
Current Opinion in Pediatrics 2014 26(6)  pgs: 675-681

Continuous infusion, general anesthesia and other intensive care treatment for uncontrolled status epilepticus  
Current Opinion in Pediatrics 2014 26(6)  pgs: 682-689

Recent advances in the understanding and management of long QT syndrome  
Current Opinion in Pediatrics 2014 26(6)  pgs: 727-733
Disorders of fluids and electrolytes: Integration of Acid–Base and Electrolyte Disorders
Julian L. Seifter

Physiological Approach to Assessment of Acid–Base Disturbances
Kenrick Berend, Aiko P.J. de Vries, and Rijk O.B. Gans

Oxygen Desaturation in Infants during Aeromedical Transport
Ruth M. Lölgen, Patricia Woods, Margaret Wall, Andrew Berry

Incidence and associated factors of difficult tracheal intubations in pediatric ICUs: a report from National Emergency Airway Registry for Children: NEAR4KIDS
Ana Lia Graciano, Robert Tamburro, Ann E. Thompson, John Fiadjo, Vinay M. Nadkarni, Akira Nishisaki
Intensive Care Medicine 2014; 40: 1659 – 1669

Epidemiology of Blunt Head Trauma in Children in U.S. Emergency Departments
Kimberly S. Quayle, James F. Holmes, Nathan Kuppermann

Why do parents litigate and what does it do for the family?
Lewis Rosenbloom
Arch Dis Child 2014; 99:1065-1068

Epidemiology of Blunt Head Trauma in Children in U.S. Emergency Departments
Kimberly S. Quayle, James F. Holmes, Nathan Kuppermann

Toxic shock syndrome surveillance in UK children
S Adalat, T Dawson, S J Hackett, J E Clark, In association with the British Paediatric Surveillance Unit
Arch Dis Child 2014; 99:1078-1082

Engaging children and parents in service design and delivery
A R Bedford Russell, M Passant, H Kitt
Arch Dis Child 2014; 99:1158-1162

Extent, Risk Factors, and Outcome of Fluid Overload After Pediatric Heart Surgery
Seguin, Jade; Albright, Benjamin; Vertullo, Laura; Lai, Pamela; Dancea, Adrian; Bernier, Pierre-Luc; Tcherkenkov, Christo I.; Calaritis, Christos; Drullinsky, David; Gottesman, Ronald; Zappitelli, Michael.

Association between intravenous chloride load during resuscitation and in-hospital mortality among patients with SIRS
Andrew D. Shaw, Karthik Raghunathan, Fred W. Peyerl, Sibyl H. Munson, Scott M. Paluszkwicz & Carol R. Schermer
Intensive Care Medicine 2014; 40: 1897-1905

Risk of bloodstream infection in children admitted to paediatric intensive care units in England and Wales following emergency inter-hospital transfer
Katie Harron, Quen Mok, Roger Parslow, Berit Muller-Pebody, Ruth Gilbert & Padmanabhan Ramnarayan
Intensive Care Medicine 2014; 40: 1916-1923

How to manage ventilation in pediatric acute respiratory distress syndrome?
Martin C. J. Kneyber, Philippe A. Jouvet & Peter C. Rimensberger
Intensive Care Medicine 2014; 40: 1924-1926

Understanding organ dysfunction in Ebola virus disease
Tom E. Fletcher, Robert A. Fowler & Nicholas J. Beeching
Intensive Care Medicine 2014; 40: 1936-1939

Understanding the disease: aneurysmal subarachnoid hemorrhage
R. Loch Macdonald, Michael N. Diringer & Giuseppe Citerio
Accuracy of the Abdominal Examination for Identifying Children with Blunt Intra-Abdominal Injuries

Family Participation during Intensive Care Unit Rounds: Goals and Expectations of Parents and Health Care Providers in a Tertiary Pediatric Intensive Care Unit
Stickney, Carolyn A. - Ziniel, Sonja I. - Brett, Molly S. - Truog, Robert D.

Extracorporeal life support for a 5-week-old infant with idiopathic pulmonary hemosiderosis
Gutierrez, Sherrill - Shaw, Susanna - Huseni, Shehlanooor - Sachdeva, Asha - Costello, John P. - Basu, Sonali - Nath, Dilip S. - Klugman, Darren

Congenital central hypoventilation syndrome and carbon dioxide sensitivity
Rossor, Thomas - Soe, Aung - Bhat, Ravindra - Greenough, Anne

Clinical Illness and Outcomes in Patients with Ebola in Sierra Leone
Abstract: Objective: Prediction of survival and mortality rates in costly environments such as the intensive care unit (ICU) is of great importance for the assessment of new treatments, resource consumption control, and improvement of quality control. This study aimed to determine the ability to predict mortality and discharge rate of patients using the FOUR score in the pediatric ICU (PICU) of Ali Ibn Abitalib Hospital, Zahedan and compare the results with those of Glasgow Coma Scale (GCS). Methods: This prospective study was conducted on 200 patients admitted to the PICU. Convenience purposive sampling was used. Research data was collected using the Full Outline of Unresponsiveness (FOUR) score and GCS using questionnaires. Obtained data was analyzed with SPSS 16 using descriptive statistics and correlation analyses. Findings: Of the 200 children admitted to the PICU, 71.5% and 28.5% were discharged and died, respectively. The inter-rater reliability for the FOUR score was good to excellent (weighted $\kappa$: eye, 0.72; respiration, 0.82; brainstem, 0.74; motor, 0.78). In terms of mortality and discharge prediction logistic regression analyses (FOUR score = OR: 0.13; 95% CI: 0.06-0.29; P<0.001; GCS=OR: 2.49; 95% CI: 1.44-4.32; P<0.001) showed that the FOUR score is a good predictor for in-hospital mortality. Conclusion: Results indicated that the FOUR score is more capable than GCS in predicting the mortality and discharge of patients admitted to the PICU.

Full Text: Available from ProQuest in Iranian Journal of Pediatrics

Title: Racial/ethnic differences in the presentation and management of severe bronchiolitis

Citation: Journal of Hospital Medicine, 2014, vol./is. 9/9(565-572), 1553-5592;1553-5606 (2014)


Abstract: Background and Objective: Bronchiolitis is the leading cause of hospitalization for US infants and is associated with increased risk of childhood asthma. Although studies have shown differences in the presentation and management of asthma across race/ethnicity, it is unclear if such differences are present for bronchiolitis. We examined if racial/ethnic differences exist in the presentation and management of severe bronchiolitis. Methods: We performed a 16-center, prospective cohort study from 2007 to 2010. Children <2 years old hospitalized with a diagnosis of bronchiolitis were included. A structured interview, chart review, and 1-week phone follow-up were completed. Multivariable logistic regression was used to examine the independent association between race/ethnicity and diagnostic imaging, treatment (eg, albuterol, corticosteroids, and continuous positive airway pressure/intubation), management (eg, intensive care unit admission and length of stay), discharge on inhaled corticosteroids, and bronchiolitis relapse. Results: Among 2130 patients, 818 (38%) were non-Hispanic white (NHW), 511 (24%) were non-Hispanic black (NHB), and 801 (38%) were Hispanic. Compared with all groups, NHB children were most likely to receive albuterol before admission (odds ratio [OR]: 1.58; 95% confidence interval [CI]: 1.20-2.07) and least likely to receive chest xrays during hospitalization (OR: 0.66; 95% CI: 0.49-0.90). Hispanic children were most likely to be discharged on inhaled corticosteroids (OR: 1.92; 95% CI: 1.19-3.10). Conclusion: We observed differences between NHW and minority children regarding preadmission albuterol use, inpatient diagnostic imaging, and prescription of inhaled corticosteroids at discharge, practices that deviate from the American Academy of Pediatrics guidelines. The causes of these differences require further study, but they support implementation of care pathways for severe bronchiolitis. Journal of Hospital Medicine 2014;9:565-572.

Title: Restricted versus standard maintenance fluid volume in management of transient tachypnea of newborn: A clinical trial

Citation: Iranian Journal of Pediatrics, 2014, vol./is. 24/5(575-580), 2008-2142;2008-2150 (2014)

Author(s): Dehdashtian M., Aramesh M.-R., Melekian A., Aletayeb M.-H., Ghaemmaghami A.

Abstract: Objective: The incidence of Transient Tachypnea of Newborn (TTN) is higher in infants born by cesarean section than with vaginal delivery. Treatment of transient tachypnea of newborn is supportive. The purpose of this study was to assess the effect of restricted fluid volume intake on the course of respiratory distress in patients with TTN. Methods: This is a quasi-experimental clinical trial of 83 neonates diagnosed with TTN admitted to a neonatal intensive care unit in south west Iran. In this study the effect of restriction of maintenance fluid volume in the course of respiratory distress in newborns with transient tachypnea was assessed. Findings: In the standard fluid volume intake group 18 (42.8%) cases needed nasal continuous positive airway pressure (NCPAP) and one (2.38%) case mechanical ventilation, and in restricted fluid volume intake
group 13 (32.5%) cases needed NCPAP and two (5%) cases mechanical ventilation. 54.82% of cases were supported with oxyhood in the standard fluid volume and 62.5% in the restricted fluid volume intake group. Differences in duration of the needed NCPAP and oxygen hood between the two groups were significant. Fluid restriction had no adverse effect on the urine specific gravity or weight loss of the studied newborns. Conclusion: Limited fluid administered to newborns with transient tachypnea of newborn is safe and resulted in shorter duration of respiratory support.

Full Text: Available from ProQuest in Iranian Journal of Pediatrics

Title: Perinatal factors leading to birth asphyxia among term newborns in a tertiary care hospital

Citation: Iranian Journal of Pediatrics, 2014, vol./is. 24/5(637-642), 2008-2142;2008-2150 (2014)

Author(s): Kiyani A.N., Khushdil A., Ehsan A.

Abstract: Objective: To determine various perinatal factors leading to birth asphyxia among term newborns in a tertiary care hospital. Methods: In a cross sectional study, a total of 196 asphyxiated cases were selected through consecutive non-probability sampling technique from neonatal intensive care unit (NICU) of a tertiary care Military Hospital in Pakistan from 1st December 2012 to 1st December 2013. Data obtained was analyzed using SPSS version 15.0. Descriptive statistics were used to calculate means, standard deviations and frequencies. Stratification with respect to maternal age, gestational age, newborns weight, parity and gravidity was done and post stratification chi-square test was applied to find statistical significance. Findings: Out of 196 cases, 125 (64%) were males and 71 females (36%). Mean maternal age was 27.04±4.97 years and gestational age of babies was 39.86±1.24 weeks. Majority (57.14%) of 112 mothers were 1-3 para and >4 parity was recorded in 84 (42.86%) cases. Majority (64.80%) of the 127 mothers were 1-3 gravida while 69 (35.20%) had >4 gravidity, mean of 3.45±0.87. Mode of delivery as a factor leading to birth asphyxia was found in 32.14% (n=63) cesarean section, 44.39% (n=87) spontaneous vertex delivery, and instrumental delivery in 23.47% (n=46). Prolonged second stage of labor reported in 72% (n=141), 29.08% (n=57) had prolonged rupture of membranes, 7.65% (n=15) had meconium staining, 7.65% (n=15) had meconium staining, 5.61% (n=11) had multiple births, 21.94% (n=43) had maternal fever, and 58.84% (n=113) had anemia at delivery. Conclusion: Birth asphyxia is a preventable problem and long term neurological sequelae almost untreatable. Timely identification of the perinatal risk factors and their prompt solution can prevent and reduce the neonatal morbidity and mortality from birth asphyxia. Early identification of high-risk cases with improved antenatal and perinatal care can further decrease such high mortality.

Full Text: Available from ProQuest in Iranian Journal of Pediatrics

Title: Evaluation report of pediatric intensive care units in turkey

Citation: Turkish Journal of Medical Sciences, 2014, vol./is. 44/6(1073-1086), 1300-0144 (2014)


Abstract: Background/aim: To collect data from throughout Turkey in order to facilitate the organization of pediatric intensive care units (PICUs), and to develop short-term immediate action plans and draft long-term strategic plans. Materials and methods: A total of 35 specialists including 17 pediatric critical care (PCC) specialists, 9 PCC fellows in training, and 9 pediatricians working in PICUs evaluated PICUs and their infrastructures, mortality rates, appropriateness of indications for PICU admissions, PICU bed numbers, and utilization of those PICU beds. Results: PICU bed numbers, PCC specialist numbers, and PICU nurse numbers are insufficient in Turkey. The high percentage of inappropriate and inefficient use of current PICU beds is also another problem. Conclusion: In the light of this report, it is obvious that pediatric intensive care services are successful and efficient only in the presence of PCC specialists in PICUs. Studies for improving the infrastructure of PICUs and the training of PCC specialists and other health personnel should be started immediately.

Title: First Description of KPC-2-Producing Klebsiella oxytoca Isolated from a Pediatric Patient with Nosocomial Pneumonia in Venezuela.
Abstract: During the last decade, carbapenem resistance has emerged among clinical isolates of the Enterobacteriaceae family. This has been increasingly attributed to the production of beta-lactamases capable of hydrolyzing carbapenems. Among these enzymes, Klebsiella pneumoniae carbapenemases (KPCs) are the most frequently and clinically significant class-A carbapenemases. In this report, we describe the first nosocomial KPC-2-producing K. oxytoca isolated from a pediatric patient with pneumonia admitted to the intensive care unit at The Andes University Hospital, Merida, Venezuela. This strain was resistant to several antibiotics including imipenem, ertapenem, and meropenem but remained susceptible to ciprofloxacin, colistin, and tigecycline. Conjugation assays demonstrated the transferability of all resistance determinants, except aminoglycosides. The isolate LMM-SA26 carried a ~21kb conjugative plasmid that harbored the bla KPC-2, bla CTX-M-8, and bla TEM-15 genes. Although carbapenem resistance in the Enterobacteriaceae is still unusual in Venezuela, KPCs have a great potential to spread due to their localization on mobile genetic elements. Therefore, rapid detection of KPC-carrying bacteria with phenotypic and confirmatory molecular tests is essential to establish therapeutic options and effective control measures.

Full Text: Available from ProQuest in Case Reports in Infectious Diseases

Title: Influenza in hospitalized children in Ireland in the pandemic period and the 2010/2011 season: Risk factors for paediatric intensive-care-unit admission

Citation: Epidemiology and Infection, 2014, vol./is. 142/9(1826-1835), 0950-2688;1469-4409 (2014)

Author(s): Rebolledo J., Igoe D., O'Donnell J., Domegan L., Boland M., Freyne B., McNamara A., Molloy E., Callaghan M., Ryan A., O'Flanagan D.

Abstract: Influenza causes significant morbidity and mortality in children. This study's objectives were to describe influenza A(H1N1)pdm09 during the pandemic, to compare it with circulating influenza in 2010/2011, and to identify risk factors for severe influenza defined as requiring admission to a paediatric intensive care unit (PICU). Children hospitalized with influenza during the pandemic were older, and more likely to have received antiviral therapy than children hospitalized during the 2010/2011 season. In 2010/2011, only one child admitted to a PICU with underlying medical conditions had been vaccinated. The risk of severe illness in the pandemic was higher in females and those with underlying conditions. In 2010/2011, infection with influenza A(H1N1)pdm09 compared to other influenza viruses was a significant risk factor for severe disease. An incremental relationship was found between the number of underlying conditions and PICU admission. These findings highlight the importance of improving low vaccination uptake and increasing the use of antivirals in vulnerable children.

Full Text: Available from ProQuest in Epidemiology and Infection

Title: Risk factors and predictors of mortality in critically ill children with extensively-drug resistant acinetobacter baumannii infection in a pediatric intensive care unit

Citation: Iranian Journal of Pediatrics, 2014, vol./is. 24/5(569-574), 2008-2142;2008-2150 (2014)

Author(s): Kapoor K., Jain S., Jajoo M., Dublish S., Dabas V., Manchanda V.

Abstract: Objective: Acinetobacter baumannii is an important emerging cause for extensively-drug resistant (XDR) hospital associated infections (HAIs) in pediatric intensive care units (PICU). The study was done to evaluate the risk factors, outcome, antibiotic sensitivity pattern, and predictors of mortality in critically ill children with XDR A. baumannii infection.Methods: Retrospective case control study, done in the PICU of a tertiary care pediatric hospital of India from April 2010 to March 2012.Findings: Eighty-five children who developed XDR A. baumannii infection matched to 170 controls. Majority (76%) of the organisms were isolated from endotracheal lavage. The mortality rate was 28.2% (24/85). The factors found to be significantly associated with A. baumannii infection were prior use of broad-spectrum antibiotics, major surgeries done, prolonged PICU stay, use of central venous catheters, and mechanical ventilation. The predictors of mortality
associated with A. baumannii infection were acute kidney injury, presence of septic shock, and disseminated intravascular coagulopathy. Colistin found to be the single most effective drug against XDR A. baumannii infection.

Conclusion: XDR A. baumannii infections are associated with high morbidity and mortality in critically ill children. Early diagnosis and treatment are crucial. Implementation of infection control practices and rational use of antibiotics are required to control such infections.

Full Text:
Available from ProQuest in Iranian Journal of Pediatrics

Title: Interleukin-6 as inflammatory marker referring to multiple organ dysfunction syndrome in severely injured children

Citation: Scandinavian journal of trauma, resuscitation and emergency medicine, 2014, vol./is. 22/(16), 1757-7241 (2014)

Author(s): Andruszkow H., Fischer J., Sasse M., Brunnemer U., Andruszkow J.H., Gansslen A., Hildebrand F., Frink M.

Abstract: Despite the suggestion that the inflammatory response in traumatized children is functionally unique, prognostic markers predicting pediatric multiple organ failure are lacking. We intended to verify whether Interleukin-6 (IL-6) displays a pivotal role in pediatric trauma similar to adults. Traumatized children less than 18 years of age with an Injury Severity Score >9 points and consecutive admission to the hospital's pediatric intensive care unit were included. Organ function was evaluated according to the score by Marshall et al. while IL-6 levels were measured repetitively every morning. 59 traumatized children were included (8.4 ± 4.4 years; 57.6% male gender). Incidence of MODS was 11.9%. No differences were found referring to age, gender, injury distribution or overall injury severity between children with and without MODS. Increased IL-6 levels during hospital admission were associated with injury severity (Spearman correlation: r = 0.522, p < 0.001), while an inconsistent association towards the development of MODS was proven at that time point (Spearman correlation: r = 0.180, p = 0.231; Pearson's correlation: r = 0.297, p = 0.045). However, increased IL-6 levels during the first two days were no longer associated with the injury severity but a significant correlation to MODS was measured. The presented prospective study is the first providing evidence for a correlation of IL-6 levels with injury severity and the incidence of MODS in traumatized children.

Full Text:
Available from National Library of Medicine in Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine
Available from Springer NHS Pilot 2014 (NEStLi2) in Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine; Note: ; Collection notes: Only available on NHS networked computers. Not available with Athens username/password.
Available from BioMedCentral in Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine

Title: Neuroprognostication after pediatric cardiac arrest

Citation: Pediatric Neurology, November 2014, vol./is. 51/5(663-668), 0887-8994;1873-5150 (01 Nov 2014)

Author(s): Kirschen M.P., Topjian A.A., Hammond R., Illes J., Abend N.S.

Abstract: Background Management decisions and parental counseling after pediatric cardiac arrest depend on the ability of physicians to make accurate and timely predictions regarding neurological recovery. We evaluated neurologists and intensivists performing neuroprognostication after cardiac arrest to determine prediction agreement, accuracy, and confidence.

Methods Pediatric neurologists (n = 10) and intensivists (n = 9) reviewed 18 cases of children successfully resuscitated from a cardiac arrest and managed in the pediatric intensive care unit. Cases were sequentially presented (after arrest day 1, days 2-4, and days 5-7), with updated examinations, neurophysiologic data, and neuroimaging data. At each time period, physicians predicted outcome by Pediatric Cerebral Performance Category and specified prediction confidence.

Results Predicted discharge Pediatric Cerebral Performance Category versus actual hospital discharge Pediatric Cerebral Performance Category outcomes were compared. Exact (Predicted Pediatric Cerebral Performance Category - Actual Pediatric Cerebral Performance Category = 0) and close (Predicted Pediatric Cerebral Performance Category - Actual Pediatric Cerebral Performance Category = +1) outcome prediction accuracies for all physicians improved over successive periods (P < 0.05). Prediction accuracy did not differ significantly between physician groups at any period or overall. Agreement improved over time among neurologists (day 1 Kappa [], 0.28; days 2-4 , 0.43;
days 5-7, 0.68) and among intensivists (day 1, 0.30; days 2-4, 0.44; days 5-7, 0.57). Prediction confidence increased over time (P < 0.001) and did not differ between physician groups. Conclusions: Inter-rater agreement among neurologists and among intensivists improved over time and reached moderate levels. For all physicians, prediction accuracy and confidence improved over time. Further prospective research is needed to better characterize how physicians objectively and subjectively estimate neurological recovery after acute brain injury.

**Title:** Reliability of circulatory and neurologic examination by telemedicine in a pediatric intensive care unit

**Citation:** Journal of Pediatrics, November 2014, vol./is. 165/5(962-966.e5), 0022-3476;1097-6833 (01 Nov 2014)

**Author(s):** Yager P.H., Clark M.E., Dapul H.R., Murphy S., Zheng H., Noviski N.

**Abstract:** Objective: To test the hypothesis that telemedicine can reliably be used for many aspects of circulatory and neurologic examinations of children admitted to a pediatric intensive care unit (PICU). Study design: A prospective, randomized study in a 14-bed PICU in a tertiary care, academic-affiliated institution. Eligible patients were >2 months or <19 years of age, not involved in a concurrent study, had parents/guardian able to sign an informed consent form, were not at end-of-life, and had an attending who not only deemed them medically stable, but also felt that the study would not interrupt their care. Other than the Principal Investigator, 6 pediatric intensivists and 7 pediatric critical care fellows were eligible study providers. Two physician providers were randomly assigned to perform circulatory and neurologic examinations according to the American Heart Association/Pediatric Advanced Life Support guidelines in-person and via telemedicine. Findings were recorded on a standardized data collection form and compared. Results: One hundred ten data collection forms were completed. For many aspects of the circulatory and neurologic examinations, outcomes showed substantial to perfect agreement between the in-person and telemedical care providers (kappa = 0.64-1.00). However, assessments of muscle tone had a kappa = 0.23, with a kappa = 0.37 for skin color. Conclusions: Telemedicine can reliably identify normal and abnormal findings of many aspects of circulatory and neurologic examinations in PICU patients. This finding opens the door to further studies on the use of telemedicine across other disciplines.

**Title:** Impact of assisted reproductive therapy (ART) on infant health and health care cost outcomes

**Citation:** Value in Health, November 2014, vol./is. 17/7(A520), 1098-3015 (November 2014)

**Author(s):** Tabano D.C., Schroeder A., Sullivan K., Vaidya N.

**Abstract:** Objectives: Assisted reproductive therapy (ART) has increased dramatically in the US over the past several decades, nearly doubling from 1999 to 2008. Prior research has evaluated multiple outcomes from ART including newborn survival and birth weight as well as cost analyses measuring cost per live birth; despite robust information on ART as a whole there is no Colorado-specific data on neonatal intensive care unit (NICU) outcomes following ART and its economic implications. Methods: Using data from the Colorado Department of Public Health and Environment (CDPHE) - Colorado Birth Certificate Database from 2007-2012, we use multivariable logistic regression to determine if ART births are associated with a higher risk of NICU admission compared to non-ART (no fertility treatment) births. We compare the risk of NICU admission among the full birth cohort and a singleton-only cohort controlling for plural births and birth order. We use Colorado state Health Care Policy and Financing (HCPF) fiscal year 2007-08, Colorado Centre for Reproductive Medicine costs and Colorado State Medicaid 2012 fee schedule data to estimate average NICU admission rates, total ART procedural costs and average costs of delivery, respectively. Results: 190,795 live births in 2007-2012 were included into the birth cohort for analysis (12,666 ART births; 178,129 non-ART births). ART births resulted in a 52% increased risk of being admitted to the NICU compared to non-ART births (OR 1.52 [95% CI 1.38, 1.69]); singleton-only ART births had a 39% greater risk of being admitted to the NICU compared with singleton non-ART births (OR 1.39 [95% CI 1.18, 1.65]). Average NICU admission costs were estimated at $6,165.78 per ART birth and $3,311.85 per non-ART birth. Conclusions: ART births in Colorado have a higher risk of NICU admission compared to non-ART births. The economic impact of NICU admissions is 18.6 times greater among ART births compared to non-ART births.

**Title:** Acute coagulopathy in children with multiple trauma: A retrospective study

**Citation:** Journal of Emergency Medicine, November 2014, vol./is. 47/5(539-545), 0736-4679 (01 Nov 2014)
Author(s): Sakellaris G., Blevrakis E., Petakis I., Dimopoulou A., Dede O., Partalis N., Alegakis A., Seremeti C., Spanaki A.M., Briassoulis G.

Abstract: Background Acute coagulopathy associated with trauma has been recognized for decades and is a constituent of the "triad of death" together with hypothermia and acidosis. Study Objective The aim of this study was to determine to what extent coagulopathy is already established upon emergency department (ED) admission and the association with the severity of injury, impaired outcome, and mortality. Methods Ninety-one injured children were admitted to the ED in our hospital. Pediatric Trauma Score (PTS), Injury Severity Score (ISS), and Glasgow Coma Scale (GCS) score were used to estimate injury severity, and organ function was assessed by the Sequential Organ Failure Assessment (SOFA) score. Results Coagulopathy upon pediatric intensive care unit admission was present in 33 children (39.3%): 21 males and 12 females. PTS ranged from 1 to 12 (mean 8.2) in 51 children without coagulopathy and from -1 to +11 (mean 6.8) in 33 children with coagulopathy (p = 0.087). ISS and GCS ranged from 4 to 57 (mean 28) and from 3 to 11 (mean 7.3), respectively, in the coagulopathy group, whereas in the group without coagulopathy, ISS score ranged from 4 to 41 (mean 20.5; p = 0.08) and GCS from 8 to 15 (mean 12.8; p = 0.01). SOFA ranged from 0 to 10 (mean 3.4) in children without coagulopathy and from 0 to 15 (mean 5.4) in the coagulopathy group (p = 0.002). Among 33 children with coagulopathy, 7 did not survive (21%), all with parenchymal brain damage, whereas all trauma patients without coagulopathy survived (p < 0.001). Conclusion Acute coagulopathy is present on admission to the ED and is associated with injury severity and significantly higher mortality.

Title: Use of next-generation sequencing as a diagnostic tool for congenital myasthenic syndrome

Citation: Pediatric Neurology, November 2014, vol./is. 51/5(717-720), 0887-8994;1873-5150 (01 Nov 2014)

Author(s): Das A.S., Agamanolis D.P., Cohen B.H.

Abstract: Background The clinical presentation of congenital myasthenic syndromes is similar to many other neuromuscular disorders of infancy, and with 12 known discrete genetic forms of congenital myasthenic syndromes, both the diagnosis and treatment decisions present clinical challenges. Patient Description We report a 20-month-old boy with rapsyn deficiency. At birth, he presented with a weak cry, hypotonia, joint contractures, and facial deformity. Because of respiratory difficulty associated with muscle fatigue, he spent a total of 71 days in the neonatal intensive care unit and 47 days in the pediatric intensive care unit. Imaging study results were normal, along with a battery of metabolic tests and electrodiagnostic studies. A limited genetic evaluation for reversible cytochrome c oxidase deficiency was negative, as was the oligonucleotide microarray. A muscle biopsy demonstrated myofiber atrophy in a pattern consistent with early denervation. Based on nonspecific and nondiagnostic results, whole-exome (next generation) sequencing was performed. This study identified two confirmed pathogenic mutations in the RAPSN gene that are associated with congenital myasthenic syndrome (OMIM 608931). The patient was treated with pyridostigmine at 16 months of age, which resulted in a dramatic improvement in muscle tone and strength and a steady resolution of joint contractures. Four months after treatment was initiated, he was beginning to bear weight and was able to sit unsupported and vocalize full words. Conclusions This patient serves to highlight next-generation sequencing as an important diagnostic tool that can result in life-saving treatment.

Title: Intensive care of children with burn injuries and the role of the multidisciplinary team.

Citation: Nursing Children & Young People, 01 November 2014, vol./is. 26/9(27-30), 20462336

Author(s): Biasini, Augusto, Biasini, Marco, Stella, Marcello

Abstract: Trauma from burns and scalds in children is more common and more damaging than in adults, and may indicate abuse. The main goal of intensive care of an acute burn is to limit the extent of the systemic insult. Effective treatment of such acute physiological changes requires experienced monitoring by multidisciplinary teams, following appropriate emergency protocols at specialised burn centres in cases of major trauma. First aid involves maintaining a patent airway, supporting circulation and respiration, arresting the burning, managing pain and distress, reducing infection and considering transfer to specialist care. Advances in techniques and treatment have increased survival rates and ultimate quality of life, but education and prevention programmes are still required at all levels to reduce the incidence of burns among children.
Parents’ perspectives on safety in neonatal intensive care: A mixed-methods study

Citation: BMJ Quality and Safety, November 2014, vol./is. 23/11(902-909), 2044-5415 (01 Nov 2014)


Abstract: Background & objectives: Little is known about how parents think about neonatal intensive care unit (NICU) safety. Due to their physiologic immaturity and small size, infants in NICUs are especially vulnerable to injury from their medical care. Campaigns are underway to integrate patients and family members into patient safety. This study aimed to describe how parents of infants in the NICU conceptualise patient safety and what kinds of concerns they have about safety. Methods: This mixed-methods study employed questionnaires, interviews and observation with parents of infant patients in an academic medical centre NICU. Measures included parent stress, family-centredness and types of safety concerns. Results: 46 parents completed questionnaires and 14 of these parents also participated in 10 interviews (including 4 couple interviews). Infants had a range of medical and surgical problems, including prematurity, congenital diaphragmatic hernia and congenital cardiac disease. Parents were positive about their infants’ care and had low levels of concern about the safety of procedures. Parents reporting more stress had more concerns. We identified three overlapping domains in parents’ conceptualisations of safety in the NICU, including physical, developmental and emotional safety. Parents demonstrated sophisticated understanding of how environmental, treatment and personnel factors could potentially influence their infants’ developmental and emotional health. Conclusions: Parents have safety concerns that cannot be addressed solely by reducing errors in the NICU. Parent engagement strategies that respect parents as partners in safety and address how clinical treatment articulates with physical, developmental and emotional safety domains may result in safety improvements.

Full Text: Available from Highwire Press in BMJ Quality and Safety

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The morbidity and mortality conference as an adverse event surveillance tool in a paediatric intensive care unit

Citation: BMJ Quality and Safety, November 2014, vol./is. 23/11(930-938), 2044-5415 (01 Nov 2014)

Author(s): Cifra C.L., Jones K.L., Ascenzi J., Bhalala U.S., Bembea M.M., Fackler J.C., Miller M.R.

Abstract: Objective: To determine if standardised chart review applied to records of patients discussed at a paediatric intensive care unit (PICU) morbidity and mortality conference (MMC) yields additional or different information regarding safety event occurrence and characteristics. Design: Retrospective record review. Setting: Single tertiary referral PICU in Baltimore, Maryland, USA. Participants: 96 patients discussed at the PICU MMC over 14 months (November 2011-December 2012). Main outcome measures: Safety events and their characteristics (medical error category, severity and preventability). Results: A total of 275 safety events were identified through the MMC and/or chart review. The MMC identified 131 (48%) events, 53 (19%) of which were identified through the MMC alone. After chart review was performed, an additional 144 (52%) events were identified. 78 (28%) events were identified through both. High severity adverse events potentially contributing to permanent harm or death were more likely to be identified through both the MMC and chart review (47%) compared with either alone. The MMC alone identified more near-misses (21%) and preventable events (96%) compared with chart review alone or both MMC and chart review. Although chart review alone helped to identify many healthcare-associated infections, medication errors and sedation/pain control issues not elicited through the MMC, the MMC alone identified more communication errors and workflow problems. The MMC alone also identified 40% of all diagnostic errors, which would not have been discovered otherwise despite chart review by itself identifying 50% of such misdiagnoses. Conclusions: Standardised chart review applied to records of patients discussed at a PICU MMC identified significantly more safety events not initially discovered through the MMC. However, the MMC was superior to chart review in identifying broader problems such as communication errors, workflow issues and certain diagnostic errors not captured by chart review, which can potentially affect many aspects of care.

Full Text: Available from Highwire Press in BMJ Quality and Safety

Dilemmas in undertaking research in paediatric intensive care
**Citation:** Archives of Disease in Childhood: Education and Practice Edition, November 2014, vol./is. 99/11(1043-1049), 1743-0585;1743-0593 (01 Nov 2014)

**Author(s):** Kanthimathinathan H.K., Scholefield B.R.

**Abstract:** Providing evidence-based interventions for infants and children is important in paediatric intensive care, where decision making impacts most acutely on morbidity and mortality. However, despite the major progress of medicine in the 21st century, we still lack this evidence for majority of the decisions we make. In this article, we explore and suggest possible solutions for several dilemmas faced by paediatric intensive care researchers. These include ethical dilemmas such as validity of informed consent, use of deferred consent, balancing risk versus benefit and methodological dilemmas such as how to generate high-quality evidence with low-patient volume, choice of valid outcome measures and how best to use research and researchers’ networks.

**Full Text:**
Available from [Highwire Press](http://www.highwire.org) in *Education and Practice*

**Title:** The value of non-invasive ventilation

**Citation:** Archives of Disease in Childhood: Education and Practice Edition, November 2014, vol./is. 99/11(1050-1054), 1743-0585;1743-0593 (01 Nov 2014)

**Author(s):** Hull J.

**Abstract:** Non-invasive ventilation (NIV) use has increased markedly over the last 10 years. Children being treated with NIV are now a common sight in most paediatric intensive care units and high dependency units and nearly all tertiary respiratory units will look after a cohort of children who use NIV at home. Although the published evidence base for use of NIV in acute and chronic respiratory failure is relatively weak, it is now very unlikely that there will be any more randomised controlled trials of this intervention. Effectiveness of NIV will need to be evaluated on each child as it used. It is important to define the purpose of using NIV in each child, and then determine whether it is effective.

**Full Text:**
Available from [Highwire Press](http://www.highwire.org) in *Education and Practice*

**Title:** Clofarabine in children with relapsed acute leukemia: Istanbul experience

**Citation:** Pediatric Blood and Cancer, December 2014, vol./is. 61/(S348), 1545-5009 (December 2014)

**Author(s):** Karakas Z., Sirin Koc B., Karaman S., Anak S., Unuvar A., Uysalol E., Aaoglu L., Ozturk G., Devecioğlu O.

**Abstract:** Objectives: Although Clofarabine is known as an effective novel agent in relapsed acute leukemia, optimum combination and time to use remain a challenge. Aim of this study is to evaluate a clofarabine based protocol in children with multi-relapsed acute leukemia. Methods: We retrospectively analyzed data of twelve children treated with CLOVE protocol for third or greater bone marrow relapsed acute leukemia between 2009 and 2013. Seven of 12 patients were ALL, 5 of them were AML. Patients with relapsed ALL were treated with one or two cure of FLAG after performing BFM-95 REZ protocol and relapsed AML were treated with two cure FLAG after MRC protocol. The cases with no response to at least two relapsed protocol were received CLOVE protocol in one or two cure. Results: Clofarabine was effective to induce remission in six patients and half of them had hematopoietic stem cell transplantation (HSCT) (Table 1). All of them relapsed after the HSCT, one of them also relapsed after the second HSCT. Although clofarabine was effective to induce remission, overall survival was poor in our study. The 3-month and 12-month overall survival rates from start of CLOVE protocol were 45.5% and 9%, respectively (Figure1). The most common adverse event was prolonged neutropenia, although only one patient died from severe infection, all of the patients had severe bacterial and invasive fungal infections. Also, we observed elevated liver enzymes in 92% of the patients. One patient with refractory AML needed pediatric intensive care due to severe hepatotoxicity and VOD after clofarabine therapy. Conclusions: All of the patients except one died from relapsed/refractory leukemia even though four of them had HSCT. Although we have provided longer lifetime using the CLOVE for multiple relapsed acute leukemia,
subsequently the patients died from uncontrolled leukemia. Therefore, we suggest that clofarabine can be used at the first relapse in leukemia with MRD determination to obtain better results. The main question remains if better outcomes could be obtained with earlier Clofarabine based chemotherapy.

**Title:** Oncologic emergencies that need intensive care at diagnosis in children with cancer

**Citation:** Pediatric Blood and Cancer, December 2014, vol./is. 61/(S391), 1545-5009 (December 2014)


**Abstract:** Objectives: The onset of some oncologic processes is a life-threatening condition that needs to be managed at Intensive Care Units (ICU). The aim of this study is to analyse our experience in the management of severe complications observed before confirming the malignancy diagnosis. Methods: Retrospective study of children who need critical care at diagnosis, from January 2004 to December 2013. Epidemiological data, tumour characteristics, site, type of complication, treatment and mortality, were reviewed. The statistical analysis was performed by SPSS 22.0. Results: Emergencies as presenting symptoms were observed in 60 out of 391 new cancer patients and 47 required admissions in ICU at diagnosis. 63% were males and the median age at diagnoses was 6 year-old (range 0.25-14). These complications were intracranial hypertension-67%, haemorrhage-13%, airway obstruction-6% and 2% each (hyperleukocytosis, tumor lysis syndrome, arterial hypertension, cardiac tamponade, hypercalcaemia, superior vena cava syndrome and urinary obstruction). Most frequent diagnoses were brain tumours-72%, lymphoma-6%, acute leukemia-6%, rhabdomyosarcoma-4% and rhabdoid tumour-4%. Most malignancies were located in brain-78%, bone marrow-6%, mediastinum- 6% and abdomen-4%. Therapy included ventriculoperitoneal shunt 55%, surgery 10%, ventilatory support 10%, external ventricular drainage 6%, ventriculostomy 2%. The death rate was 8%, before reaching cancer diagnosis. Conclusions: Early identification of symptoms before life-threatening situations at onset in suspected malignancies and the admission at ICU are crucial for improving the prognosis of severe cases. Innovative ways to educate the communities and health professionals in recognising the warning signs and symptoms for cancer are essential to improve early detection and ensure prompt referral to specialist medical care. Collaboration among physicians of ICU and Oncology Units is very important for the management of children with cancer and it supports the need of therapy in specialized tertiary hospitals.

**Title:** Glioblastoma multiforme: Rehabilitation of a case

**Citation:** Pediatric Blood and Cancer, December 2014, vol./is. 61/(S280), 1545-5009 (December 2014)

**Author(s):** Gasperini D.G., Mancano B.M., Boldrini E., Suarez N.L.G., Murra M.S., Bonatelli D., Constantino M.G.A., Lourenco M.L.P.C., Cavalcante C.E.B., Lopes L.F.

**Abstract:** Objectives: Glioblastoma multiforme is a grade IV astrocytoma and represents about 7% of intracranial tumors in childhood. Methods: Patient 18 years old, female, admitted on 11/01/2013 with headache, vomiting and paralysis in the right arm 15 days ago, she developed right facial paralysis and mild dysphagia, FOIS 5 (Functional Oral Intake Scale). The functional classification was based on KPS 80% ( Karnofsky Performance Status) and Scale Independence in Activities of Daily Living Katz scoring 0 (ADL-Katz). MRI of brain: "solid-cystic lesion with central necrosis, perilesional hematoma, measuring 6,4 x 5,8x 5,7 cm, the left frontal region, compressing the pre central gyrus and diverting the midline to right". Made frontal parietal craniotomy, subtotal resection, the patient developed cerebral edema, dornal repair and cranial bone was placed in the subcutaneous tissue of the abdomen. Results: In intensive care unit, Glasgow 3T without sedation, KPS 20 and ADL-Katz 6 The rehabilitation care were: 1. Nutrition: Enteral nutrition, pasty, bland, general support and supplements; 2. Physiotherapy: motor and respiratory cinesiotherapy, workout sitting posture, balance, orthostatic and functional neuro electrostimulation; 3. Speech Therapy: passive and active orofacial exercises, cold thermal stimulation, workout swallowing and breathing for decannulation of tracheostomy; 4. Occupational therapy: guidance for positioning, treatment adherence, encouragement of self-esteem and relationships, use of adapted recreational activities and expressive activity. Outside hospital after 22 days with Functional Independence Measure (FIM) 28.57%. Made conformational radiotherapy (60 G) with temozolomide (75mg/m2/day). Currently FOIS 7, KPS 80%, FIM 88.09% and ADL-Katz scoring 3. Last MRI: stable disease. Currently, using temodal (150-200mg/m2/day, 5 days, 6 cycles). Cranioplasty scheduled for 07/04/2014. Conclusions: Although we know that potentially all malignant gliomas will recidivate, it is clear in this case that patients may benefit from surgery, radiotherapy, chemotherapy and of a good rehabilitation work.
Toxicities were age outcome compared to younger children, in part due to treatment related mortality. We investigated if a range of all patients experience severe toxicities, some life threatening.

Abstract: Objectives: Pancreatitis is an inflammatory disease of the exocrine pancreas, self-digestion of the tissue by its own enzymes. The aim of this paper is to evaluate the role of de oncology pediatric surgeon in management of acute pancreatitis Methods: This is a retrospective study analyzing cases of patients with ALL who had acute pancreatitis induced by L-asparaginase treated at the National Institute of Pediatrics (INP) in the Department of Surgical Oncology for a period of 11 years. In order to establish the role of the pediatric surgeon oncologist in the management of patients with acute pancreatitis by L - Asp. The clinical records of 120 patients admitted to the surgical oncology with acute pancreatitis during the period 2002 to 2013, of which 30 patients had acute pancreatitis induced by L - Asp were reviewed. Clinical and biochemical data, ultrasound, computed tomography, treatment, complications and intensive care stay were analyzed. Results: Patients who had acute pancreatitis by L - Asp, the mean age was 12 years, gender was found with a ratio of 12 male patients (40%) and 18 female (60%). All patients had abdominal pain, nausea, vomiting and elevated pancreatic enzymes lipase and amylase. CT pancreatic necrosis was found in 3 patients (13%), 2 patients underwent peritoneal drainage catheter and patient Tenckhoff I performed necrosectomy. 8 died (26%) patients, only one due to toxicity of the pancreas. Conclusions: L - Asp is an effective drug for the treatment of ALL, but because of its toxicity requires close monitoring due to the main complication is pancreatitis in order to start treatment as soon as possible. Surgery in acute pancreatitis is limited to removal of infected necrotic pancreatic tissue, so that the role of the surgeon is of paramount importance to determine the window of opportunity and timely management.

Title: Aggressiveness of end of life care for neuroblastoma patients

Citation: Pediatric Blood and Cancer, December 2014, vol./is. 61/(S404), 1545-5009 (December 2014)


Abstract: Objectives: Patterns of end of life care are poorly understood in pediatric cancer population. This study aimed to elucidate aggressiveness of end of life care for children with neuroblastoma that is the most common life-threatening solid tumor in Japan. Methods: Patients who were diagnosed as neuroblastoma in our institute and died between September 1, 1995 and December 31, 2013 were enrolled. Medical records were retrospectively reviewed. Chemotherapy, life-sustaining treatment such as mechanical ventilations or CPR in the last month of life, the period between the last chemotherapy and death and place of death were investigated as indicators for aggressiveness of end of life care. Results: Fifteen patients (6 males and 9 females) were identified. The median age at death was 3.5 years (range, 3 months-12.2 years). Thirteen patients (87%) died of neuroblastoma, and 2 (13%) died of treatment-related toxicity. Chemotherapy was performed for 10 patients (67%) in the last month of life and 5 patients (33%) continued to receive chemotherapy in the last week of life. Our hospital was the sole place of death. Three patients (20%) received lifesustaining treatments due to treatment-related toxicity and died in ICU. Fourteen patients (93%) did not receive cardiac or cardiopulmonary resuscitation. The median period between the last chemotherapy and death was 14 days (range, 0-498). Conclusions: The proportion of terminally ill cancer patients who received chemotherapy was higher than the previous reports. Meanwhile, cardiac or cardiopulmonary resuscitation was not performed in the majority. Further large research is required to determine aggressiveness of end of life care for pediatric cancer patients in Japan.

Title: Toxicity is associated with age in NOPHO-AML 2004

Citation: Pediatric Blood and Cancer, December 2014, vol./is. 61/(S127), 1545-5009 (December 2014)


Abstract: Objectives: Due to the high intensity treatment of childhood acute myeloid leukemia (AML) almost all patients experience severe toxicities, some life threatening. Children >10 years with AML have worse outcome compared to younger children, in part due to treatment related mortality. We investigated if a range of toxicities were age-dependent in the NOPHO-AML 2004 protocol. Methods: We reviewed toxicities registered
in the database of the NOPHO-AML 2004 protocol, including all protocol patients from the Nordic countries and Hong Kong (n=320) censoring patients at time of HSCT. Results: Treatment-related mortality (after day 10 of diagnosis) occurred in 11/315 (3.5%). During therapy, sepsis/septic shock was significantly more common in 10-17 year olds compared to 2-9 year olds (22% vs 8.5%, p=0.01). Admission to the intensive care unit was more common in 10-17 year olds compared to 2-9 year olds (24% vs 13%, p=0.051). This difference was also seen for infants compared to 2-9 year olds, but not significantly (13% vs 23%, p=0.28). Other noteworthy differences were seen that did not reach significance: assisted ventilation was more common in infants and 10-17 year olds compared to 2-9 year olds (13% and 12% vs 6.8%); Creatinine was elevated to more than 3 x normal more often in infants and 10-17 year olds compared to 2-9 year olds (6.7% and 3.7% vs 0.8%); Bilirubin was elevated to more than 3 x normal more often in infants compared to 2-9 year olds (10% vs 2.6%). The only toxicity seen more often in 2-9 year olds was central neurotoxicity (7.6% vs 1.9% for 10-17 year olds, p=0.094).

Conclusions: Infants and 10-17 year olds experienced more toxicity during AML treatment. This was especially true for admission to the ICU, sepsis and assisted ventilation.

Title: Invasive positive pressure ventilation in children with febrile neutropenia: Five years of experience in a paediatric oncology intensive care unit

Citation: Pediatric Blood and Cancer, December 2014, vol./is. 61/(S399), 1545-5009 (December 2014)

Author(s): Riad K., Abdel Hadi S., Ghazally M., Mokhtar M.

Abstract: Objectives: To evaluate the feasibility and outcome of invasive positive pressure ventilation (IPPV) in children with febrile neutropenia due to haematological malignancy. Methods: Design: Observational retrospective cohort study. Setting: Pediatric intensive care unit in a university hospital. Patients: children with hematological cancer with febrile neutropenia treated by IPPV, regardless of the indication, during five consecutive 5 years (2008-2013). Results: A total of 101 patients were included, and 61 of the 101 patients (60%) were successfully treated by IPPV. The success rate of IPPV was significantly lower (22%) in the patients with acute respiratory distress syndrome (p <.05) than in the other patients Conclusions: This study demonstrates the feasibility and efficacy of IPPV in the daily practice of a pediatric oncology intensive care unit, but this ventilatory support could not be proposed as a first-line treatment in children with acute respiratory distress.

Title: The value of non-invasive ventilation

Citation: Archives of Disease in Childhood, November 2014, vol./is. 99/11(1043-1049), 0003-9888;1468-2044 (01 Nov 2014)

Author(s): Hull J.

Abstract: Non-invasive ventilation (NIV) use has increased markedly over the last 10 years. Children being treated with NIV are now a common sight in most paediatric intensive care units and high dependency units and nearly all tertiary respiratory units will look after a cohort of children who use NIV at home. Although the published evidence base for use of NIV in acute and chronic respiratory failure is relatively weak, it is now very unlikely that there will be any more randomised controlled trials of this intervention. Effectiveness of NIV will need to be evaluated on each child as it used. It is important to define the purpose of using NIV in each child, and then determine whether it is effective.

Full Text: Available from Highwire Press in Archives of disease in childhood

Title: Dilemmas in undertaking research in paediatric intensive care

Citation: Archives of Disease in Childhood, November 2014, vol./is. 99/11(1043-1049), 0003-9888;1468-2044 (01 Nov 2014)

Author(s): Kanthimathinathan H.K., Scholefield B.R.

Abstract: Providing evidence-based interventions for infants and children is important in paediatric intensive care, where decision making impacts most acutely on morbidity and mortality. However, despite the major progress of medicine in the 21st century, we still lack this evidence for majority of the decisions we make. In
this article, we explore and suggest possible solutions for several dilemmas faced by paediatric intensive care
researchers. These include ethical dilemmas such as validity of informed consent, use of deferred consent,
balancing risk versus benefit and methodological dilemmas such as how to generate high-quality evidence with
low-patient volume, choice of valid outcome measures and how best to use research and researchers' networks.

Full Text:
Available from Highwire Press in Archives of disease in childhood

Title: Laryngotracheal stenosis and airway surgery - An outcomes based approach

Citation: International Journal of Pediatric Otorhinolaryngology, November 2014, vol./is. 78/11(1931-1936), 0165-5876;1872-8464 (01 Nov 2014)

Author(s): Chan L.S., Daniel M., Boardman S.J., Cheng A.T.

Abstract: Objectives: To review the outcomes of endoscopic, open or a combination of both surgical modalities
for laryngotracheal stenosis and establish which factors influence results. Methods: Records of all children
undergoing laryngotracheal procedures (excluding laryngomalacia and aspirated foreign bodies) by the
Department of Otolaryngology at The Children's Hospital at Westmead between January 2003 and November
2011 were reviewed. Specific data on population, intervention, covariates and outcomes were recorded and
analysed. Results: A total of 104 patients undergoing 277 procedures were included. 211 (76%) of the
procedures were endoscopic, remaining 66 (24%) open. Patients undergoing open surgery were more likely to
have significant co-morbidity, prior intubation, require ICU admission or tracheostomy and have a longer
hospital stay. 57 (54.8%) patients were successfully treated with a single procedure (48 endoscopic and 9 open).
Of the endoscopic patients requiring further surgery, 16 were managed with multiple endoscopic procedures,
whilst 12 underwent subsequent open procedures. Open surgery was performed on 66 patients, 63.6% (42/66) of
all open procedures required further endoscopic intervention and 45.2% (19/42) of these avoided further open
surgery. Conclusions: Both open and endoscopic surgery have a role in laryngotracheal stenosis, and many
patients benefit from a combination of both. Ultimately the decision depends on experience of the treating team,
social considerations, and institutional capabilities. A multi-centre prospective data collection would be a useful
tool to further investigate optimal management approach.
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