RSS SESSION SIGN-IN SHEET

Pediatric Care I Echo Series
Pedestrian Injuries
August 17, 2017
Benjamin L. Eithun, MSN, CRNP, RN, CPNP-AC, CCRN, TCRN

RSS Global Objective(s): Assess pediatric trauma given the new skills and guidelines determined to be safe for children. Identify proper tool and standardized measurement practices to improve diagnosis and treatment of pediatric patients.

Policy on Disclosure

It is the policy of the University of Wisconsin School of Medicine and Public Health that anyone with a CME planning role for this activity (persons who may influence content) disclose all relevant financial relationships with commercial interests* in order to allow CME staff to identify and resolve any potential conflicts of interest. Disclosure of any planned discussions of unlabeled/unapproved uses of drugs or devices during each presentation is required. For this educational activity all conflicts of interest have been resolved and detailed disclosures are listed below:

<table>
<thead>
<tr>
<th>Name/Role</th>
<th>Financial Relationship Disclosures</th>
<th>Discussion of Unlabeled/Unapproved uses of drugs/devices in presentation?</th>
</tr>
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<tbody>
<tr>
<td>Jonathan Kohler, MD Presenter,</td>
<td>No relevant financial relationships to disclose</td>
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<td>Chair</td>
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<tr>
<td>Veronica Watson Coordinator</td>
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<tr>
<td>Randi Cartmill, Coordinator</td>
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<td>Danielle Hoping, OCPD Staff</td>
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<td>Benjamin Eithun, MSN, RN,</td>
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<td>Coordinator</td>
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<td>Mary Jean Erschen, Coordinator</td>
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My signature below verifies that I have attended this CME activity and have been fully disclosed (see reverse) of any real or apparent conflicts of interest that may have a direct bearing on the subject matter of this CME activity. This pertains to relationships with pharmaceutical companies, biomedical device manufacturers, or other corporations whose products or services are related to the subject matter of the presentation topic. This also pertains to relationships with the commercial supporter of this CME activity.

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Pediatric Pedestrian Injuries
Introductions

- Ben Eithun, MSN, CRNP, RN, CPNP-AC, CCRN, TCRN
  Pediatric Trauma Program Manager
  Pediatric Level 1 Trauma Center
  American Family Children’s Hospital
  Beithun@uwhealth.org
  608-212-9866
Disclosures

- I do not have any relationships with commercial interests to disclose.

- I do not intend to reference unlabeled or unapproved uses of drugs or products in my presentation.
Objectives

- To understand pediatric anatomic and physiologic factors relevant to pediatric trauma resuscitation, with specific attention to head, abdominal and thoracic trauma.
- To describe the treatment of pediatric pedestrian injuries.
## 10 Leading Causes of Death by Age Group, United States - 2013

<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
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<tr>
<td>1</td>
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<td>Congenital Anomalies 4,759</td>
<td>Unintentional Injury 1,316</td>
<td>Unintentional Injury 746</td>
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<td>Unintentional Injury 11,619</td>
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<td>Malignant Neoplasms 46,185</td>
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<td>Heart Disease 486,156</td>
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<td>Short Gestation 4,202</td>
<td>Congenital Anomalies 476</td>
<td>Malignant Neoplasms 447</td>
<td>Malignant Neoplasms 448</td>
<td>Suicide 4,678</td>
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<td>Heart Disease 35,167</td>
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<td>Maternal Pregnancy Comp. 1,595</td>
<td>Homicide 337</td>
<td>Congenital Anomalies 179</td>
<td>Suicide 386</td>
<td>Homicide 4,329</td>
<td>Homicide 4,236</td>
<td>Heart Disease 10,341</td>
<td>Unintentional Injury 20,357</td>
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<td>SIDS 1,563</td>
<td>Malignant Neoplasms 328</td>
<td>Homicide 125</td>
<td>Congenital Anomalies 161</td>
<td>Malignant Neoplasms 1,496</td>
<td>Malignant Neoplasms 3,673</td>
<td>Suicide 6,551</td>
<td>Liver Disease 8,785</td>
<td>Chronic Low. Respiratory Disease 15,942</td>
<td>Cerebrovascular 108,602</td>
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<td>Unintentional Injury 1,156</td>
<td>Heart Disease 169</td>
<td>Chronic Low. Respiratory Disease 75</td>
<td>Homicide 152</td>
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<td>Heart Disease 3,258</td>
<td>Homicide 2,581</td>
<td>Suicide 8,621</td>
<td>Diabetes Mellitus 13,061</td>
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<td>Placenta Cord. Membranes 953</td>
<td>Influenza &amp; Pneumonia 102</td>
<td>Heart Disease 100</td>
<td>Congenital Anomalies 362</td>
<td>Diabetes Mellitus 684</td>
<td>Liver Disease 2,491</td>
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<td>Respiratory Distress 522</td>
<td>Septicemia 53</td>
<td>Cerebrovascular 41</td>
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<td>Circulatory System Disease 458</td>
<td>Benign Neoplasms 47</td>
<td>Septicemia 35</td>
<td>Cerebrovascular 48</td>
<td>Complicated Pregnancy 178</td>
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<td>HIV 1,246</td>
<td>Septicemia 5,345</td>
<td>Septicemia 39,080</td>
<td>Nephritis 47,112</td>
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<td>Neonatal Hemorrhage 389</td>
<td>Perinatal Period 45</td>
<td>Benign Neoplasms 34</td>
<td>Benign Neoplasms 31</td>
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<td>HIV 2,378</td>
<td>Nephritis 4,947</td>
<td>Septicemia 28,815</td>
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Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.
INFANTS ARE NOT LITTLE ADULTS
Adult Pedestrian Crashes
Pediatric Pedestrian Injuries


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Bicycle Accidents
Anatomy - Head

- Soft cranium
- Open fontanelle
  - Close at 12-18 months
  - Estimate of fluid status/intracranial pressure
- Increased incidence of Brain Injury
Head Injuries
Anatomy - Spine

- Flexible ligaments
  - Angular momentum from large head
- Pseudo-subluxation
- SCIWORA
Anatomy - Chest

- Soft, flexible chest wall
- Weak intercostal muscles
- Tension pneumothorax due to mobile mediastinum
Anatomy- Chest Continued

- Trachea is narrow, short and more compressible
  – More susceptible to compression by hemopneumothorax

- Pulmonary Contusion are most common thoracic injury in pediatrics
Cardiac and Great Vessel injury

- Great vessel and cardiac injury are rare in children
  - However hemodynamic instability in the face of euvolemia should raise concern for myocardial contusion and/or mediastinal injury
Anatomy - Abdomen

- Thin abdominal wall
- Liver and spleen project farther below the costal margin
- Bladder is intra-abdominal
- Multiple injuries common (small target)