Disparities in the Acute Care of Children in the United States

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Research Center on Child Health Disparities
Webinar Series
February 4, 2016
Faculty Disclosure

• In the past 12 months, I have not had a significant financial interest or other relationship with the manufacturer(s) of the products or provider(s) of the services that will be discussed in my presentation.

• This presentation will not include discussion of pharmaceuticals or devices that have not been approved by the FDA.
Objectives

• Discuss the disparities in the epidemiology of pediatric trauma and the impact of health disparities on care of the injured child;

• *Describe the potential sources of, and the levels at which, disparities are produced in the acute care delivery system;*

• *Summarize existing intervention opportunities to improve equity for the emergency care of children in the U.S.*
Presentation Outline

- Acute Care Delivery System
  - Institute of Medicine Report

- Intervention Opportunities
  - National Pediatric Readiness Project
Definition

• **Disparities** should be defined not simply as a difference but as an inequitable difference that is potentially systematic and avoidable.
Local, “high touch” community participatory efforts not-with-standing, at the macro level, little measurable change has occurred.

Leveraging the ACA to focus efforts on eliminating systemic inequities in quality of care.
Levels at Which Disparities Are Produced

- Social & Physical Environmental Exposures and Opportunities
- Access to Health Care
- Quality of Health Care

Health Outcome

Health Care

Jones Camara P. *Phylon* 2002;50:7-22
Potential Sources of Disparities in Care Delivery

**Patient**
- Patient preferences
- Refusal of treatment
- Adherence
- Biological differences
- Health literacy

**Clinician**
- Communication skill
- Discrimination
- Knowledge & attitudes

**Health System Factors**
- Access, Financing, Structure of care
- Cultural and linguistic barriers
Coverage Does Not Equal Access

- Despite high levels of insurance coverage, many barriers keep children from receiving primary and specialty health care in community-based settings.

- Uneven distribution of primary and specialty care providers significantly impede access to care.

- Many children rely on the Emergency Department for care and are treated for conditions that could otherwise be prevented (ambulatory care sensitive).
Asthma in the District of Columbia: Tale of Two Cities

Primary Care Access

Poverty

Teach et al. *Pediatrics* 2006;117:S78
Disparities in the Acute Care of Children in the US

• Acute Care Delivery System
  ➢ Institute of Medicine Report

• Intervention
  ➢ National Pediatric Readiness Project
THE SHAME OF EMERGENCY MEDICINE

KIDS AT RISK

IS YOUR HOSPITAL GOOD ENOUGH?
WHAT PARENTS NEED TO KNOW

Seven-year-old Elaina Barrett suffered respiratory distress following emergency brain surgery. Improper monitoring by doctors and nurses left her with severe brain damage. An only child, she lived at home for seven years before she died.

COVER STORY

The shame of emergency care for kids

Most hospitals and rescue squads aren’t really prepared to deal with children’s medical crises.
• “If there is one word to describe pediatric emergency care in 2006 it is **uneven**”

- *Growing Pains*, pg. 33
Pediatric Report ‘sound bite’

• “Only six percent of the nation’s emergency departments are fully supplied to care for children”.

• The average emergency department has about 80 percent of the recommended pediatric supplies, [i.e. 130 pieces of equipment]

  ➢ Middleton KR, Burt CW. Advance Data 2006; no. 367
  ➢ Schappert SM, Bhuiya F. Natl Health Stat 2012; 47
Access to Acute Care

• 92% of children in the emergency care system are seen in non-children’s hospitals

• Only 2-3% of seriously injured children are initially treated at a pediatric trauma center

• 75% of emergency departments see < 20 kids/day

• 50% of emergency departments see <10 kids/day

Gausche-Hill M. Pediatrics 2007; 120:1229-37
Establishing a Floor of Readiness, i.e. “Peds Ready”

Joint Policy Statement—Guidelines for Care of Children in the Emergency Department

abstract

Children who require emergency care have unique needs, especially when emergencies are serious or life-threatening. The majority of ill and injured children are brought to community hospital emergency departments (EDs) by virtue of their geography within communities. Similarly, emergency medical services (EMS) agencies provide the bulk of out of hospital emergency care to children. It is imperative, therefore, that all hospital EDs have the appropriate resources (medications, equipment, policies, and education) and staff to provide effective emergency care for children. This statement outlines resources necessary to ensure that hospital EDs stand ready to care for children of all ages, from neonates to adolescents. These

*Pediatrics* 2009;124:1233-43; reaffirmed 2012
IOM: Improving the Quality of Care for Children

- Studies addressing the efficacy, safety, and health outcomes of medications used for infants, children, in order to improve patient safety.

- Hospitals and EMS systems must implement evidence-based approaches to reduce errors in emergency and trauma care for children.
• Evidence Based Guidelines for Prehospital Practice: A Process Whose Time Has Come

• The Development of Evidence-based Prehospital Protocols Using a GRADE-based Methodology

• An Evidence-Based Guideline for Pediatric Prehospital Seizure Management Using GRADE Methodology

• An Evidence-Based Guideline For the Air Medical Transportation of Prehospital Trauma Patients

• An Evidence-Based Guideline for Prehospital Analgesia in Trauma

• The Implementation and Evaluation of an Evidence-based Statewide Prehospital Pain Management Protocol
A 5-year-old child chokes on a small rubber ball, and is rushed to your emergency department in respiratory arrest...

Is your facility ready to provide appropriate pediatric care?

The National Pediatric Readiness Project
http://www.PediatricReadiness.org
Disparities in the Acute Care of Children in the US

• Acute Care Delivery System
  ➢ Institute of Medicine Report

• Intervention
  ➢ National Pediatric Readiness Project
A National Assessment of Pediatric Readiness of Emergency Departments

Marianne Gausche-Hill, MD; Michael Ely, MHRM; Patricia Schmuhl, BA; Russell Telford, MA; Katherine E. Remick, MD; Elizabeth A. Edgerton, MD, MPH; Lenora M. Olson, PhD, MA

ORIGINAL INVESTIGATION

IMPORTANCE Previous assessments of readiness of emergency departments (EDs) have not been comprehensive and have shown relatively poor pediatric readiness, with a reported weighted pediatric readiness score (WPRS) of 55.

OBJECTIVES To assess US EDs for pediatric readiness based on compliance with the 2009 guidelines for care of children in EDs; to evaluate the effect of physician/nurse pediatric emergency care coordinators (PECCs) on pediatric readiness; and to identify gaps for future quality initiatives by a national coalition.

DESIGN, SETTING, AND PARTICIPANTS Web-based assessment of US EDs (excluding specialty hospitals and hospitals without an ED open 24 hours per day, 7 days per week) for pediatric readiness. All 5017 ED nurse managers were sent a 55-question web-based assessment. Assessments were administered from January 1 through August 23, 2013. Data were analyzed from September 12, 2013, through January 11, 2015.

MAIN OUTCOMES AND MEASURES A modified Delphi process generated a WPRS. An adjusted WPRS was calculated excluding the points received for the presence of physician and nurse PECCs.

RESULTS Of the 5017 EDs contacted, 4149 (82.7%) responded, representing 24 million annual pediatric ED visits. Among the EDs entered in the analysis, 69.4% had low or medium pediatric volume and treated less than 14 children per day. The median WPRS was 68.9 (interquartile range [IQR] 56.1-83.6). The median WPRS increased by pediatric patient volume, from 61.4 (IQR, 49.5-73.6) for low-pediatric-volume EDs compared with 89.8 (IQR, 74.7-97.2) for high-pediatric-volume EDs (P < .001). The median percentage of recommended pediatric equipment available was 91% (IQR, 81%-98%). The presence of physician and nurse PECCs was associated with a higher adjusted median WPRS (82.2 [IQR, 69.7-92.5]) compared with no PECC (66.5 [IQR, 56.0-76.9]) across all pediatric volume categories (P < .001). The presence of PECCs increased the likelihood of having all the recommended components, including a pediatric quality improvement process (adjusted relative risk, 4.11 [95% CI, 3.37-5.02]). Barriers to guideline implementation were reported by 80.8% of responding EDs.

CONCLUSIONS AND RELEVANCE These data demonstrate improvement in pediatric readiness of EDs compared with previous reports. The physician and nurse PECCs play an important role in pediatric readiness of EDs, and their presence is associated with improved compliance with published guidelines. Barriers to implementation of guidelines may be targeted for future initiatives by a national coalition whose goal is to ensure day-to-day pediatric readiness of our nation’s EDs.
Web-based Assessment Tool

• 55 questions

• Weighted “Pediatric Readiness” score generated

• Perfect Score = 100

• 6 Major Domains:
  ➢ Coordination (19 pts)
    ➢ Staffing (10 pts)
    ➢ QI/PI (7 pts)
    ➢ Safety (14 pts)
    ➢ Policies (17 pts)
    ➢ Equipment (33 points)
Response Rate

• 4149 of 5019 hospital EDs

• 82.7%

• 24 million annual pediatric emergency visits
## National Pediatric Readiness: Principal Outcome

<table>
<thead>
<tr>
<th>WPRS Median (IQR)</th>
<th>All Hospitals</th>
<th>Low</th>
<th>Medium</th>
<th>Medium High</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68.9 (56.1, 83.6)</td>
<td>61.4 (49.5, 73.6)</td>
<td>69.3 (57.9, 81.8)</td>
<td>74.6 (60.9, 87.9)</td>
<td>89.8 (74.7, 97.2)</td>
</tr>
</tbody>
</table>

- **Low** pediatric volume (<1800 pediatric visits)
- **Medium** volume (1800-4999 visits)
- **Medium high** volume (5000-9999 visits)
- **High** volume (10,000+ visits)
Median Pediatric Readiness Scores

- All Hospitals: 69
- Low Volume (< 5 children/day): 61
- Medium Volume (5-14 children/day): 69
- Medium-High Volume (15-27 children/day): 75
- High Volume (>27 children/day): 90
Scores by State
Emergency Departments Approved for Pediatrics

- **EDAP** – Jurisdictional facility recognition program that defines readiness criteria for the optimal care of children in an emergency department.

### Basic Statistics from Completed Assessments

<table>
<thead>
<tr>
<th>Annual ED Pediatric Patient Volume</th>
<th>Hospitals w/EDs</th>
<th>Average Score</th>
<th>Median Score</th>
<th>Minimum Score</th>
<th>Maximum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating EDAPs</td>
<td>399</td>
<td>81.6</td>
<td>87.0</td>
<td>30.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
### Table: Median Adjusted WPRS by Volume and Presence of PECC

<table>
<thead>
<tr>
<th></th>
<th>No PECC</th>
<th>Nurse PECC Only</th>
<th>Physician PECC Only</th>
<th>Both</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Hospitals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median [Q1, Q3]</td>
<td>66.5 [56.0, 76.9]</td>
<td>69.7 [58.9, 80.9]</td>
<td>75.3 [64.4, 85.6]</td>
<td>82.2 [69.7, 92.5]</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Low Volume</td>
<td>60.6 [51.0, 71.9]</td>
<td>63.2 [54.1, 73.6]</td>
<td>66.6 [55.0, 80.2]</td>
<td>70.6 [59.7, 81.0]</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Medium Volume</td>
<td>69.2 [60.5, 77.5]</td>
<td>73.8 [64.4, 83.4]</td>
<td>76.5 [70.4, 82.4]</td>
<td>81.4 [70.7, 90.4]</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Medium High Volume</td>
<td>71.4 [62.1, 80.0]</td>
<td>78.1 [69.2, 84.4]</td>
<td>81.3 [71.0, 88.3]</td>
<td>86.0 [76.7, 93.3]</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>High Volume</td>
<td>74.3 [63.5, 80.7]</td>
<td>82.4 [71.9, 89.7]</td>
<td>77.4 [68.7, 88.1]</td>
<td>93.8 [86.7, 98.3]</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
The Continuing Evolution of Pediatric Emergency Care

Evaline A. Alessandrini, MD, MSCE; Joseph L. Wright, MD, MPH

Every day, approximately 80,000 children seek emergency care in US emergency departments (EDs), and 20% of all children in the United States will have at least 1 ED visit each year. Yet the needs of children historically have received little attention in the emergency medical services system. Emergency medical services are a relatively new component of our national health care system, and, recently, increased attention has been given to the unique needs of children during emergencies, as well as to the documentation of significant variation in the quality of care. As a result, resources through the Emergency Medical Services for Children need for an accountable, coordinated, and regionalized approach to overcome obstacles and ensure the delivery of high-quality care. Children are particularly subject to problems in the emergency care system. Specific conclusions drawn from the pediatric component of the IOM report (“Emergency Care for Children: Growing Pains”) include the following: (1) although children make up 27% of all ED visits, only 6% of EDs have all of the necessary supplies for pediatric emergencies, and (2) most children receive emergency care in general (not children’s) hospitals, which are less likely to have specific pediatric expertise, equipment, and policies in place for the care of children. Professional organizations such as the American Academy of Pediatrics, the American College of Emergency
Pediatric Readiness

• “The tipping point is that magic moment when an idea, trend, or social behavior crosses a threshold, tips, and spreads like wildfire”
Future Opportunities: Disaster Preparedness

➢ 2003 – 76% of hospital emergency departments reported addressing the specific needs of children in their institutional disaster planning.

➢ 2014 – Only 47% reported the same
Future Opportunities: Implicit Bias in the ED

Racial Disparities in Pain Management of Children With Appendicitis in Emergency Departments

Monika K. Goyal, MD, MSCE; Nathan Kuppermann, MD, MPH; Sean D. Cleary, PhD, MPH; Stephen J. Teach, MD, MPH; James M. Chamberlain, MD

JAMA Peds. Nov 2015;169:996

- 1 million children; no differences in rates of analgesia administration
- Black children received opioids significantly less frequently than white children
A rising tide floats all boats; if we can get it right for kids in the acute care system, we can get it right for everyone.