Pediatric Critical Care Telemedicine

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Financial Disclosures
Conflicts of Interest

“I have no financial relationships with a commercial entity producing healthcare-related products and/or services relevant to the content I am presenting.”
Why

PICUs and Pediatric Intensivists are scarce resources
In the US we train about 125 Pediatric Intensivists per year

Regionalization of Pediatric Critical Care services
  • Improves care and outcome
  • Improves efficiency of care
  • Leads to disparities in access
Why

Critically ill children presenting to EDs without pediatric expertise receive poorer quality care

*Ped Emerg Care* 2001;17:170
*JAMA* 2005 294:2611
*J Pediatr* 2008;153:783
*Pediatr* 2012;130:83
Why

EDs without pediatric expertise may not be adequately equipped to care for pediatric emergencies

_Pediatr_ 2007;120:229

_Pediatr Emerg Care_ 2007;23:94

_Pediatr Emerg Care_ 2007;23:681
EDs without pediatric expertise with a relative lack of equipment, infrastructure, and experienced personnel can result in delayed/incorrect diagnoses, suboptimal therapies, imperfect medical management.

- *JAMA* 1992;268:1708
- *J Pediatr* 2008;153:783
Why

Outcomes for critically ill/injured pediatric patients are better when they are cared for by pediatric intensivists, in tertiary care pediatric intensive care units, and Level 1 trauma centers

*Pediatr* 2000;102:289
*Ped Crit Care Med* 2005;5:5
Starting a program

Visit each institution personally

- ED Director
- Nurse Manager
- MD stakeholders
- Information Services
- Public Relations
Billing

VT has a new law allowing billing for telemedicine
Documentation issues
Electronic Health Record issues
Bundling issues
Legal stuff

Out-of-state consults
Do you need a license?
Do you need formal privileges in all hospitals?
UC Davis Children’s Hospital &
Telemedicine for Children Presenting to Rural Emergency Departments

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<table>
<thead>
<tr>
<th>Confirmed Existing Programs - Interviewed</th>
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<tr>
<td>University of California, Davis</td>
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<tr>
<td>Boston Children’s Hospital</td>
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<td>Vermont Children’s Hospital at Fletcher Allen Health Care</td>
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<td>University of Arkansas</td>
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<td>Oregon Health and Science University</td>
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<td>University of New Mexico</td>
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<tr>
<td>Massachusetts General</td>
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<td>Eastern Maine Medical Center in Bangor</td>
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<td>Children’s Hospital of Orange County</td>
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Telemedicine in the ED

- Examples of specialty consultations
  - Tele-radiology
  - Tele-stroke
  - Tele-Emergency Care
    - University of Mississippi
    - April 19, 2012
    - EM Physician to NPs in Emergency Departments
  - Other specialty consultations
UC Davis Pediatric ED Telemedicine Network
- 1-2 in-house PICU attendings 24/7
- Four telemedicine stations in PICU with at-home backup
- Seamless integration with standard referral process (800-UCD4KID)
Research Outcomes

Lessons Learned

- Integrate into existing P&Ps
- Remote ED Physician “in charge”
- Test Calls!!
- Working with other providers to keep more children hospitalized in community
Thank You