Pediatric Trauma and the Pediatric Trauma Society: Our time has come.

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Mentors
My personal reasons for trying to advance pediatric trauma...
And I couldn’t do any of this without...
A brief (and biased) history of pediatric trauma...

- Antiquity: Kids get injured
- Middle ages: Kids get injured
- Renaissance: Kids get injured
- 20th century: Kids get injured, and when they do, they should be treated like adults
- BUT, things are starting to change
Radical concept in the management of the injured spleen

• Aronson DZ, Pediatrics, 1977
  – Non-operative management of 6 patients with splenic injury

  – Review of 5 year experience of 63 children with splenic injuries initially treated nonoperatively
  – 19 required blood transfusion
  – 18 had some operative procedure (15 splenectomies)
  – 7 deaths (6 from head injury)
  – “We believe that where adequate facilities exist nonoperative treatment of splenic injuries is both safe and effective”
Evidence-based guidelines...

  - APSA Trauma Committee study
  - 856 children treated at 32 centers
  - Guidelines proposed for “safe and optimal utilization of resources in routine cases”

  - Prospective application of guidelines to 312 children at 16 centers
  - Significant reduction in ICU stay, hospital stay, follow-up imaging, and length of activity restriction without adverse sequelae

  - Abbreviated protocol in the management of blunt spleen and liver injury
The new paradigm...

• Non-operative management is the NORM
  – Debates on details of nonoperative management but NOT the concept
• BUT A WORD OF CAUTION...ADULTS ARE NOT JUST BIG KIDS!!!
  – Currently, about 70% of adults are successfully managed nonoperatively (compared to >90% of children)
  – Peitzman AB, Surg Infect, 2009...”Nonoperative management of blunt abdominal trauma: have we gone too far?”
  – “Safe nonoperative management requires adherence to cardinal surgical principles, examination and re-examination of the patient, and fastidious clinical judgment.”
Trauma Centers

- American College of Surgeons forms Committee on Fractures in 1922
- Development of Trauma Centers
  - Verification of trauma centers
  - Trauma centers save lives (MacKenzie, NEJM, 2006)
- Pediatric Trauma Centers developed in parallel
  - Large portions of the population still do not have access to a pediatric trauma center
  - Lower pediatric injury mortality rates in states with higher level pediatric trauma centers (Notrica, JoT, 2012)
Current state..

- Nonoperative management demonstrated that injured kids are fundamentally DIFFERENT from injured adults.
- Maturation of pediatric trauma systems highlighted the differences in process and outcome between children treated at pediatric vs. adult facilities.
Institute of Medicine report

• Emergency Care for Children, 2006
  – Identified a “crisis” in the emergency care of children with equipment, facility, and personal issues
Traumatic Brain Injury

• Leading cause of death in kids
• Over 3000 deaths in children less than 14 years
• Over 3 million kids suffer concussions
• What are the best therapies?
Pediatric Neurotrauma guidelines (severe TBI)

- Initial guidelines published in 2003 (adult guidelines published in 2000), and revised guidelines were published in 2012
- Evidence based review of the literature and development of consensus recommendations
  - Identified the overwhelming lack of EVIDENCE supporting much of the recommendations..NO CLASS ONE RECOMMENDATIONS!!!
  - Research agenda developed
What about mild TBI (concussions)...

From the headlines

Former Chicago Bears Star Jim McMahon Opens Up About Dementia, Suicidal Thoughts

Latest NFL Concussion Lawsuit Details Are Released

Sidney Crosby: out for over a year secondary to concussion

Junior Seau Diagnosed With Disease Caused by Hits to Head: Exclusive
Zach Lystedt

- Talented youth athlete
- Tackled twice in an 8th grade football game
- Second impact syndrome with severe TBI
- Family formed a coalition (including the Seattle Seahawks)
- First concussion law enacted in Washington State, effective July 2009
So now

• All 50 states have youth concussion legislation
More from the headlines

How CT Scans Have Raised Kids' Risk For Future Cancer
June 11, 2013 11:34 AM ET

How Much Do CT Scans Increase the Risk of Cancer?
Jun 18, 2013

Kids' CT scans raise fears of cancer risk as use soars
Updated 12/12/2011 9:30 AM
CT scans

• Disproportional amount of radiation exposure
  – 15% procedures
  – 75% radiation dose
• Indications and numbers of scans increasing dramatically
  – 11% of all CT scans performed on children
  – Estimated 7 million scans/year
• CT scanning can be performed using a wide range of techniques with variable radiation exposure
PTSF Pediatric Committee Imaging Statement (circa 2008)

• Avoid protocolized scanning (pan scans)
• Use dose minimization strategies
• Defer imaging if a child is to be transferred, unless the accepting institution requests it
• Pediatric trauma centers should avoid rescanning children unless absolutely necessary
NIH: Pediatric trauma and critical injury branch (2013)

- Supports research and research training in pediatric trauma, injury, and critical illness throughout the continuum of care
- Some activities include:
  - Consortium for research on pediatric trauma and injury (R24)
  - Support of the collaborative pediatric critical care research network
  - Pediatric critical care and trauma scientist development program (K12)

Valorie Maholmes; maholmev@mail.nih.gov
At the American College of Surgeons

- Risk adjusted benchmarking program developed under the leadership of Avery Nathans.
- Need for a pediatric product quickly apparent (thanks to the work of Mike Nance)
- Went “live” Jan 2014
- In the current report, 33 centers (25 Level 1, 6 level 2, 2 “unknown”) contributed data; potentially 40 more sites are in the pipeline
Pediatric involvement in traditionally “adult” trauma organizations

- EAST
  - Ad Hoc pediatric committee
  - Sunrise sessions
- AAST
  - Ad Hoc pediatric committee (soon to be standing committee)
  - Lunch sessions, preconference session
  - Web-based grand rounds
- STN
  - Pediatric SIG
Leadership

• Pediatric Surgery
  – Mary Fallat, President-Elect, APSA

• Pediatric Surgery Nursing
  – Chris McKenna, President, APSNA
Injury Prevention

• Founded by Barbara Barlow, pediatric surgeon in Harlem

• Use local data to identify what is important in the community, develop an intervention, and evaluate it.

• Hospital based program replicated in 42 trauma centers throughout the US

Safe Children =
  Safe Activities +
  Safe Environments +
  Safety Education +
  Positive Role Models +
  Community Involvement
Regional Pediatric Trauma Symposiums
Pediatric Trauma Society
• **Mission**: Improving pediatric trauma outcomes

• **Vision**: To be a global leader in the field of pediatric trauma through optimal care guidelines, education, research, and advocacy

• An inclusive organization open to all those dedicated to the care of injured children
A brief history...

• Inaugural meeting Naples, FL 2011 (under the sponsorship of EAST)
• Incorporated in 2012
• Current Membership 663
  – MD, DO, PhD: 306
  – RN/Program Managers: 305
  – EMS Professionals: 51
• Membership represents 47 states, DC, and 8 countries
Childress Summit of the Pediatric Trauma Society

- April 22-24, 2013, Graylyn Conference Center, Winston Salem, North Carolina
- Joint venture of the Childress Institute and PTS
- Hosted by Wayne Meredith, MD
Summit Goals

• Define the current state of pediatric trauma
• Development an ideal future state
• Methodology:
  – Facilitated discussions
  – Individual teams
    • Systems
    • Traumatic Brain Injury
    • Resuscitation (prehospital, emergency care, critical care)
  – Plenary sessions
Participants

• Stakeholders from throughout the spectrum of pediatric trauma care
  – NIH (Valerie Maholmes, PhD, Chief, Pediatric Trauma and Illness Branch)
  – Trauma Systems
  – Pediatric Emergency Medicine
  – Pediatric Critical Care
  – Neurosurgery
  – General Pediatric Trauma
  – Child abuse
  – Rehabilitation
  – Methodology
  – NTSA, EMSC
  – Injury Prevention
  – Nurses, physicians, PhDs, social work
Recommendations:

• Create a comprehensive set of pediatric-specific outcome measures, including TBI
• Create a virtual pediatric trauma center
• Create a pediatric trauma toolkit including educational tools and clinical guidelines
• Place a greater emphasis on the family during and after hospitalization
• Translate lessons learned in the military medical system regarding pediatric noncombatants into civilian trauma care.
• Create a pediatric TBI consortium
• Educate stakeholders about how guidelines can improve processes and outcomes
Other outcomes...

- Recognition of pediatric trauma as an independent discipline with unique concerns.
- RFA for pediatric trauma-related research grant (Fred Rivera: Development of the Pediatric Trauma Assessment and Management Database)
- Continued partnership between the Childress Institute and PTS
EAST Partnership

• Cooperative relationship with the Pediatric Trauma Committee
• Opportunity to co-sponsor educational sessions
• Last year: Sunrise Session 8: *To Scan or Not to Scan: That is the Question*, presented by Bob Letton; this year co-sponsoring an injury prevention session
• Co-authored pediatric blunt abdominal trauma guideline with the Guidelines Committee
• Access to on-line CME
Active committees

• Research: Rita Burke
• Guidelines: John Petty
• Education: Diane Hochstuhl
• Membership: Lynn Haas, Kathy Haley
• Newsletter: Lee Ann Wurster
• NEW this year: IT to be lead by Garrett Free

WE WANT YOU TO GET INVOLVED!!!!
Journal of Trauma

- Official publication vehicle of major trauma organizations including AAST, EAST, Western Trauma, Trauma Association of Canada, Australian and New Zealand Association for the Surgery of Trauma

- PTS is now an affiliated organization
  - Proceedings of the Annual Meeting will be published in the Journal (after peer-review)

Special thanks to Jennifer Crebs and Gene Moore for making this happen!!
Official recognition by the ACS Committee of Trauma

• Level I and II Trauma Medical Director (TMD)...membership and participation in regional and national trauma organizations is required...

• Membership in PTS will meet criteria for a national organization for pediatric TMD (CD 5-8)
• 256 registrants; 35 states, 8 countries
• 50 podium presentations
• 14 poster presentations
• Panels, invited speakers, networking
With success, come expectations

• Second annual meeting planning starts today (well, maybe tomorrow!!)
• Continue to spread the word: ED, CCM, orthopedics, neurosurgery, anesthesia, etc
• Need to harness the energy of this meeting to continue our multi-disciplinary efforts to improve the outcome of injured children
THANK YOU FOR MAKING PTS A REALITY
Childress Symposium of the Pediatric Trauma Society