



Newly Published State of the Art Review on Care of Children with Minor Blunt Head Trauma

An important new review article published in *Pediatrics* in November, [Children with Minor Blunt Head Trauma Presenting to the Emergency Department](#), summarizes current evidence on the initial management of children with minor blunt head trauma. Minor blunt head trauma is a common reason for pediatric emergency department visits worldwide. While computed tomography (CT) scans are the diagnostic standard for clinically-important traumatic brain injuries (TBI), ionizing radiation exposure in children increases the risk for radiation-induced malignancies as adults. Validated TBI clinical prediction rules have worked well to safely reduce radiation exposure while identifying patients with clinically-important TBI. The authors recommend that systematic automation of the decision rules in conjunction with clinical judgement, patient observation and provided-parental dyad shared decision-making will best guide future practice in the care of these patients in all care settings.

Much of the work summarized in this article was conducted in the [PECARN network](#) over the last decade. PECARN, the Pediatric Emergency Care Applied Research Network is the first federally-funded pediatric emergency medicine research network in the United States. It is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS), the Emergency Medical Services for Children (EMSC) program through several grants.

New Policy Statement Published on Pediatric Readiness in EMS

Hot off the presses, the American Academy of Pediatrics (AAP) will simultaneously publish/early release online the joint policy statement titled “[Pediatric Readiness in Emergency Medical Services Systems](#)” with the American College of Emergency Physicians, Emergency Nurses Association, National Association of EMS Physicians, and National Association of Emergency Medical Technicians in *Pediatrics*, *Annals of Emergency Medicine*, and *Prehospital Emergency Care* on December 19: ([PEDIATRICS Volume 145 number 1; e20193307](#)). At the same time, [AAP only](#), will publish an accompanying, lengthier technical report by the same title: ([PEDIATRICS Volume 145 number 1; e20193308](#)).

Abstract “Ill and injured children have unique needs that can be magnified when the child’s ailment is serious or life-threatening. This is especially true in the out- of-hospital environment. Providing high-quality out-of-hospital care to children requires an emergency medical services (EMS) system infrastructure designed to support the care of pediatric patients. As in the emergency department setting, it is important that all EMS agencies have the appropriate resources, including physician oversight, trained and competent staff, education, policies, medications, equipment, and supplies, to provide effective emergency care for children. Resource availability across EMS agencies is variable, making it essential that EMS medical directors, administrators, and personnel collaborate with outpatient and hospital-based pediatric experts, especially those in emergency departments, to optimize prehospital emergency care for children. The principles in the policy statement “Pediatric Readiness in Emergency Medical Services Systems” and this accompanying technical report establish a foundation on which to build optimal pediatric care within EMS systems and serve as a resource for clinical and administrative EMS leaders.”

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Save the Dates! Bookmark and visit the EIC [Events page](#) for a list of upcoming events and activities pertinent to the EMSC community.

EMSC Town Halls Occur Quarterly: Block your calendar now!

- **2020 National Association of EMS Physicians Annual Meeting** – San Diego CA January 6-11, 2020. Registration is [open](#). Hotel reservations [must have been booked](#) by December 3, 2019.
- **Medical Directors Council Mid-Year Meeting** to be held in San Diego on January 8, 2020. Registration deadline is January 1. [Register here](#).
- **National EMS Advisory Council (NEMSAC)** 2020 meetings are tentatively planned for Jan. 14-16, 2020 (as well as April 14-16 and August 18-20, 2020) in Washington DC, with audioconferencing available. See [NEMSAC webpage](#) for more information. *Registration required for attendance.*
- **Quarterly EMSC Town Hall** originally scheduled for February 12, 2020 has been **rescheduled** for February 19, 2020 from 3-4:30pm ET. In general, please save the 3-4pm ET hour on the second Wednesday, every 3 months. Contact your project officer if you do not have calendar invitations.
- **2020 Annual EMS Today Conference** – Tampa FL, March 4-6, 2020. [Registration is now open](#).

Resources Available

Be sure to watch for items of interest to the EMSC Community including national projects, webinars, and opportunities to support EMS for Children on the [EIC Facebook page](#) and [Twitter](#). We use these channels to announce items on short notice.

Public Input Requested as NHTSA and AHRQ Kick Off Systematic Review of Prehospital Airway Management

[Find more information and provide feedback on the key questions here.](#)

Comment period open until December 20, 2019.

EMSCPulse welcomes articles about people, programs, and initiatives related to emergency medical services for children. Submit to EMSCInnovation@TexasChildrens.org

EMSC at the National Healthcare Coalition and Preparedness Conference

EMSC was prominently present at the National Healthcare Coalition and Preparedness Conference in early December in Houston, TX. Dr. Kate Remick, EIC Executive Lead delivered one of the keynote talks "Day-to-Day Pediatric Readiness: One Step Closer to Disaster Preparedness." Drs. Brent Kaziny and DeAnna Dahl Grove also spoke at the conference and led a pediatric workshop on the Pediatric Surge Annex.

Pictured to the right are: Katherine Schafer (New Mexico State Partnership Manager), Dr. Remick and Oscar Enriquez (Emergency Preparedness Coordinator at Dell Children's Medical Center and Subject Matter Expert for the Pediatric Readiness Quality Collaborative).



Recent News Piece on an Ambulance Designed for Children



Check out this October news piece on a special ambulance designed for Blank Children's Hospital in Iowa. The video and article describe a rig specifically equipped for pediatric transports in the Iowa Great Plains. Included in the design are an extra row of seats in the cab to carry family members to the facility so they can travel with the child receiving care. It provides a camera view of the activities in the patient care space. The truck is also equipped with large animal detection technology and protection for trips in poorly lit and scantily populated areas. It also has a special ceiling designed to distract children being transported allowing practitioners to calm them during transport. Video and text from Iowa station 13 WHOtv can be found [here](#).

National Resources

Lung Injury Deaths Associated with Use of E-cigarette or Vaping Products

As of November 13, 2019, 49 states have reported 2,172 e-cigarette, or vaping, product use–associated lung injury cases to the Centers for Disease Control and Prevention (CDC), including 42 associated deaths. Given that this situation is a public health emergency, EMSC stakeholders might find the following *Morbidity and Mortality Weekly Report* (MMWR) articles of interest:

- [Characteristics of Hospitalized and Nonhospitalized Patients in a Nationwide Outbreak of E-cigarette, or Vaping, Product Use–Associated Lung Injury — United States, November 2019](#)
- [Update: Interim Guidance for Health Care Providers for Managing Patients with Suspected E-cigarette, or Vaping, Product Use–Associated Lung Injury — United States, November 2019](#)

The American Academy of Pediatrics (AAP) also has [resources available on e-cigarettes](#).

Free Resources: Pediatric Environmental Health Specialty Units National Classroom

Environmental exposures can lead to or result from emergencies and natural disasters. The regional [Pediatric Environmental Health Specialty Units](#) (PEHSUs) are dedicated to increasing knowledge about environmental medicine among health professionals regarding children’s environmental health. The [PEHSU National Classroom](#) offers educational opportunities that include the ability to obtain continuing education for various audiences. Also see the AAP [Children and Disasters](#) website for content on specific disasters, including [floods](#), [hurricanes](#), and [wildfires](#).

NIOSH Virtual Tool Kit to Help First Responders Work Safely Around Illicit Drugs

NIOSH has released a [virtual tool kit](#) for First Responders on how to protect themselves to exposure illicit drugs. The tool kit includes short training videos and sharable infographics that cover protection when illicit drugs may be present and when they are present, what PPE to wear, and how to decontaminate themselves and their equipment. Other resources based on key points from NIOSH recommendations are also included in the virtual tool kit.

Updated Pediatric Disaster Topic Collection from ASPR TRACIE

In November, the Office of the Assistant Secretary for Preparedness and Response (HHS ASPR) updated their [Pediatric Disaster Topic Collection](#) from TRACIE (Technical Resources, Assistance Center, and Information Exchange). This Collection provides resources that can help healthcare facilities, healthcare coalitions, and other health and medical providers to consider the specialized care and resources needed for children prior to, during, and after an incident. Resources are categorized in topics that include Access and Functional Needs; Burns; Explosives and Mass Shootings; Family Reunification and Support; Healthcare Facility Evacuation/ Sheltering; and Hospital Surge Capacity and Immediate Bed Availability.

Resources for Emergency Planners

Emergencies and disasters can happen at any time, often without warning. Disaster planning, response, and recovery efforts must consider the unique needs and abilities of children, who make up roughly a quarter of the U.S. population. For example:

- **Children are positive influencers:** Children can effectively bring the message of preparedness home to their families.
- **Children can become leaders:** Participating in youth preparedness programs empowers children to become leaders at home and in their schools and communities

- **Children can be confident during an emergency:** Children who are prepared experience less anxiety and feel more confident during actual emergencies and disasters.

Youth preparedness and including youth in emergency management is an essential part of engaging the whole community. As you and your organization prepare for, respond to, and recover from disasters, use the resources on this page to explore how you can provide services that assist youth and families with children.

Check out [Ready.gov](#) for more!

Request for Information (RFI): NICHD Vision for Multisite Clinical Trials Infrastructure

NICHD recently published a **Request for Information (RFI): NICHD Vision for Multisite Clinical Trials Infrastructure (NOT-HD-19-041)**. The purpose is to solicit input from the public on its vision for supporting multisite clinical trials infrastructure. It is important for NICHD to receive input from the field. Input should be provided by **Friday, December 20, 2019**.

New Additions to the EMSC Innovations and Improvement Center Personnel

Prehospital Domain Co-Lead



Kathleen Adelgais, MD, MPH is a Professor of Pediatrics and Emergency Medicine at the University of Colorado School of Medicine and a Pediatric Emergency Medicine physician at Children's Hospital Colorado in Aurora, CO. She serves as the Principal Investigator and Project Director for the Colorado EMS for

Children State Partnership program, is the past-chair of the Pediatrics Committee for National Association EMS Physicians, and previously represented the American Academy of Pediatrics on the board of directors for Committee on the Accreditation EMS Programs. She also serves as the scientific advisor for the Aurora Fire Department EMS affiliate role in PEM-NEWS node within the Pediatric Emergency Care Applied Research Network (PECARN). Nationally, she represents the Pediatric Emergency Physician Sector on the National EMS Advisory Council. Dr. Adelgais has joined Rachael Alter as co-lead of the Prehospital Domain.

State Partnership Domain Project Manager

Dwayne K. Lopes, RRT, NPS joins the EIIC as an EMSC State Partnership Representative, providing technical support to

states on the West Coast and the Pacific Islands. Dwayne has 11 years experience as the Hawaii Emergency Medical Services for Children State Partnership Program Manager and 12 years serving as the Hawai'i State Department of Health, Emergency Medical Services & Injury Prevention Systems Branch, and Emergency Medical Services Program Specialist V position.



State Partnership Domain Project Manager

Tom Winkler, RN, MSN, is an EMSC State Partnership Representative, providing technical support to states on the East Coast. He obtained his Master of Science in Nursing from Johns Hopkins University and currently works as an Emergency Department RN at Johns Hopkins Bayview Medical Center in Baltimore, MD. Prior to nursing, he obtained his Bachelor's degree in Health Policy and Administration from Penn State University and served as the EMS for Children Program Manager for Pennsylvania from 2013 to 2017. He has worked in EMS since 2010 and continues to function as a prehospital provider.



EMSC in Scholarly Publications

Michelson, K. A. (2019). It's Time to Get Serious about Pediatric Readiness. *The Journal of pediatrics*.

<https://doi.org/10.1016/j.jpeds.2019.10.045>

Whitfill, T. M., Remick, K. E., Olson, L. M., Richards, R., Brown, K. M., Auerbach, M. A., & Gausche-Hill, M. (2019). Statewide pediatric facility recognition programs and their association with pediatric readiness in emergency departments in the United States. *The Journal of pediatrics*. <https://doi.org/10.1016/j.jpeds.2019.10.017>

Contact List Management and Holiday Greetings from NEDARC

All State Partnership Managers, please ensure your agency lists updated in the list management system by Dec 20. The survey launches Tuesday, January 7, 2020. Questions? Contact your [NEDARC TA liaison](#).

Check out this Holiday Greeting from NEDARC! <https://youtu.be/JErI-e2DBUM>

Update from the Trauma Domain

The EMSC Innovation and Improvement Center addresses the entire continuum of care for children. Acute inpatient rehabilitation is an important component of the trauma system. Our Trauma team has been working with a group of national experts in pediatric rehabilitation to clearly define processes for the initiation of rehabilitation therapies for children who have been hospitalized following a traumatic brain injury. This highly skilled group of pediatric experts is comprised of physical medicine and rehab physicians, trauma surgeons, a neuropsychiatrist and speech, physical and occupational therapists representing children's hospitals and pediatric rehabilitation programs across the country.

The first product of the workgroup's efforts was a poster entitled *Evidence for the Timing of Rehabilitation Services Following Pediatric Traumatic Brain Injury*. This work was presented by Dr. Christian Niedzwecki at the Pediatric Trauma Society's annual conference in San Diego, CA on November 15, 2019. (See next page for an image of the poster.)

Stay tuned for updates as more work is done to raise awareness and educate providers about the importance of rehabilitation services provided to children than will improve outcomes in pediatric trauma care.



ATTENTION!
PedsReady
QI Assessment
Temporary Closing

December 31, 2019

The PedsReady assessment will be closing as we update the assessment to align with the 2018 guidelines for "Pediatric Readiness in the Emergency Department."

June 2020

Please return June 2020 for the next national assessment. Participate in the largest initiative to improve the readiness of emergency departments to care for children in the United States.

For more information and resources to prepare for the 2020 assessment, visit:

PedsReady.org

Evidence For The Timing Of Rehabilitation Services Following Pediatric Traumatic Brain Injury

Christian Niedzwecki¹, Betsy Lewis¹, Stacy Suskauer², Molly Fuentes³, Kathryn DeMarco³, Jordan Huffman⁵, Jackie Gould⁵, Shari Wade⁶, Emily Hermes¹, Shadra Robison¹, Bindi Naik-Mathuria¹, Diana Fendya¹, Mary Fallat³

¹Baylor College of Medicine, Houston, TX; ²Kennedy Krieger Institute, Baltimore, MD; ³University of Louisville, Louisville, KY; ⁴Seattle Children's Hospital, Seattle, WA; ⁵The Shirley Ryan AbilityLab, Chicago, IL; ⁶Cincinnati Children's Hospital, Cincinnati, OH

Objective

- To develop an Evidence Based Guideline for the initiation of Rehabilitation Services after traumatic brain injury (TBI).

Background

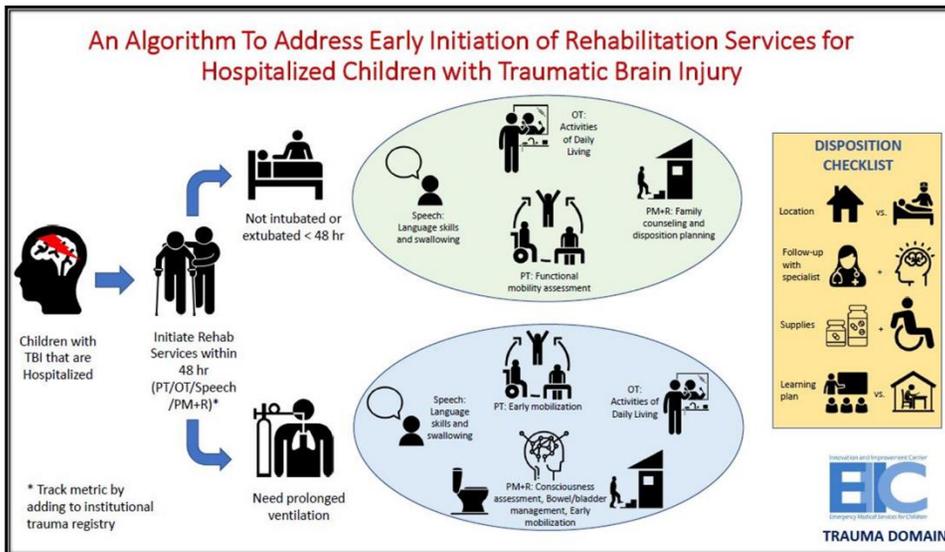
Evidence Based Guidelines:¹

Clinical practice guidelines:

- Include recommendations to optimize patient care informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options.
- Offer an evaluation of the quality of the relevant scientific literature and an assessment of the likely benefits and harms of a particular treatment.
- Enable healthcare providers to select the best care for a unique patient based on his or her preferences.

Pediatric Traumatic Brain Injury:

- EACH YEAR, Pediatric traumatic brain injury (TBI) results in:²
 - 2,300 deaths
 - 42,000 hospitalizations
 - 404,000 emergency department visits
 - 17,000 children with permanent disabilities
- Children who survive TBI may benefit from a comprehensive rehabilitation program.³
- Delay in initiation of a comprehensive rehabilitation program has been correlated with worse functional outcomes.⁴
- There is wide between-hospital variation in provision of PT or OT for children with TBI.⁵



Methods

- A comprehensive literature review was conducted for the PICO question.

"In children with severe TBI (Glasgow Coma Score <8), does early initiation of rehabilitation therapies improve outcomes?"

- PubMed and Cochrane were systematically searched from January 1990- December 2018 resulting in 1,061 titles and abstracts for review.

Results

355 studies pulled for full text review

- 5 pediatric studies found
- All descriptive in nature (show an impact of rehab on functional outcome)
- No comparison population
- The science is not there yet

Results cont.

Challenges with regard to definitively addressing the PICO question:

- Variability in severity classification
- Variability in timing of
 - Initiation of rehabilitation
 - Follow-up assessment
- Variability in age groupings
- Loss to follow up
- Influence of intervening variables in the natural environment
- Access to rehabilitation care including treatment variability during acute care phase
- Variability in outcome measures
- Ethical concerns
- Difficulty translating performance across different standardized tests
- Measurement of real-world functioning
- Developmental factors
- Age of the Rehabilitation discipline.

Conclusion

- Evidence does not currently exist for an evidence-based guideline for optimal timing of rehabilitation after TBI in children.
- This mandates support for the development of clinical trials to determine timing of effective interventions.
- Related evidence suggests that initiating rehabilitation within 3 days of acquired brain injury is not harmful in children.⁶

Future Directions

- The Emergency Medical Services for Children Innovation and Improvement Center (EICC) Trauma Domain has appointed a task force of subject matter experts to discuss opportunities to move forward. Disciplines include:
 - Physical Therapy
 - Occupational Therapy
 - Psychiatry (Physical Medicine and Rehabilitation)
 - Trauma Nursing
 - Trauma Surgery
- A visual abstract of our consensus designed algorithm (center).
- A recommended metric for children with traumatic brain injury necessitating hospitalization s consultation with rehabilitation services within 48 hours admission.

References

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What is FAN Mail? In each issue of the EMSC Pulse, you will find a “FAN Mail” section with information specific to our Family Advisory Network (FAN) members. Each issue will contain announcements, links to resources and highlights of the work being accomplished by the FAN members across the country.



Tips to Keep your Kids Safe and Healthy While Traveling

The holidays are upon us and for many that means traveling to visit family and friends. The American Academy of Pediatrics (AAP) provides these tips as precautions to be

sure your children will be safe and healthy.

1. Remember that the homes you visit may not be childproofed. Keep an eye out for danger spots like unlocked cabinets, unattended purses, accessible cleaning or laundry products, stairways, or hot radiators.
2. Keep a list with important phone numbers you or a babysitter are likely to need in case of an emergency. Include the police and fire department, your pediatrician and the national Poison Help Line, 1-800-222-1222. Laminating the list will prevent it from being torn or damaged by accidental spills.
3. Always make sure your child rides in an appropriate car seat, booster seat, or seat belt. In cold weather, children in car safety seats should wear thin layers with a blanket over the top of the harness straps if needed, not a thick coat or snowsuit.
4. Adults should buckle up too, and drivers should never be under the influence of alcohol or drugs.
5. Traveling, visiting family members, getting presents, shopping, and other holiday events can all increase your child's stress levels. Try to stick to your child's usual routines, including sleep schedules and timing of naps, to help you and your child enjoy the holidays and reduce stress.



For more information and questions to FAQ about flying with a baby for the first time [click here](#) for more tips from the AAP.

FAN Mail Celebrates its ONE YEAR Anniversary – And we want your Feedback!

The November 2019 edition of Pulse, marked the one year anniversary since we started including Family Advocate Network (FAN) specific content section of the EMSC Pulse. This section was meant to provide helpful tips and discussion about topics important to families and their advocates – and hopefully some fun stuff along the way too! To mark this one year anniversary, we would like to get YOUR feedback. Take a few minutes to complete this, [quick survey](#) and let us know what you think!



Family Advisory Network in Action! We'd like to see you!

If you have pictures or content you wish to share on EIIC social media, [email Cassidy Penn](#) at the EIIC