



Emergency Medical  
Services for Children

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# EMSCnews

## PROGRAM LEGISLATION

In the Korean and Vietnam wars, medical experience demonstrated that survival rates improved dramatically when patients were stabilized in the field and transported immediately to a well-equipped emergency facility. During the 1960s, civilian medical and surgical communities recognized the possibility of applying this principle to an emergency medical system (EMS).

In 1973, Congress passed the Emergency Medical Services Systems Act of 1973. Managed by the Health Resources and Services Administration (HRSA) within the U.S. Department of Health and Human Services (HHS), it provided funding for more comprehensive state and local government EMS systems. The formation of an EMS System improved outcomes of adult patients but not those of pediatric patients. In 1979, Calvin C.J. Sia, MD, then-president of the Hawaii Medical Association, requested that the members of the American Academy of Pediatrics (AAP) develop EMS programs designed to decrease disability and death in children. Dr. Sia was joined by José B. Lee, then-executive officer of the Hawaii Medical Association Emergency Medical Services Program in requesting that U.S. Senator Daniel K. Inouye introduce legislation to establish, implement and fund a national initiative designed to address emergency medical services for children systems development. Soon after, Senator Daniel Inouye (D-HI) responded to this request by introducing a legislative vehicle in the United States Senate. His staff assistant and chief of staff Patrick DeLeon's daughter was hospitalized with meningitis.

The girl's treatment demonstrated the shortcomings of an average emergency department when treating a critically ill child. Senators Orrin Hatch(R-UT) and Lowell Weicker (R-CT) also gave their support. In 1984, Congress enacted legislation (Public Law 98-555) authorizing the use of federal funds for emergency medical services for children (EMSC). By this law, administered through the HHS, HRSA, Maternal and Child Health Bureau (MCHB) the EMSC program obtained funds to improve the pediatric capabilities of existing emergency medical services systems. In 1985, Congress designated initial funding for the EMSC program and in 1986, the first federal grants were utilized in Alabama, California, New York, and Oregon.

### Our Purpose

The only federal program focused on the emergency care needs of children in prehospital and hospital systems, as mandated by the Emergency Medical Services for Children Program Reauthorization Act of 2019. The program's mission is to reduce child and youth disability and death due to severe illness or injury by increasing awareness among health professionals, provider and planners and the general public of the special (physiological and psychological) needs of children receiving emergency medical care. Long-term success is measured by assessing the quality of pediatric emergency care provided in the prehospital and hospital settings, and the integration of pediatric emergency care within the larger emergency medical service (EMS) system.

## REACHING EVERY STATE AND TERRITORY

The HRSA EMSC program provides funding to 58 State Partnership (SP) recipients in 58 states and jurisdictions to expand and improve emergency medical services for children in need of treatment for traumatic injuries and medical illnesses.

Since 2004, the EMSC SP program has been driving national efforts through defined performance measures (PM) that promote and evaluate the degree to which systems are in place to ensure optimal care of children in the emergency care setting. The current PMs focus on:

- EMS participation in NEMESIS data submission to promote improvement in pediatric prehospital care
- Pediatric emergency care coordination in EMS agencies
- Maintenance of pediatric-specific skills among EMS providers
- Systems to recognize hospitals capable of managing pediatric medical emergencies
- Systems to recognize hospitals capable of managing pediatric traumatic emergencies
- Presence of written inter-facility transfer guidelines
- Presence of written inter-facility transfer agreements
- Established permanence of EMS for Children in state/territory EMS systems
- Integration of EMS for Children priorities into state/territory statutes or regulations

Follow [this link](#) for full text of the performance measures.

## ENSURING FAMILIES ARE HEARD

Throughout 2020, the EMSC has continued to ensure that the family voice is a prominent part of all their outputs. The Family Advisory Network (FAN) is the EMSC connection to children and families in all 58 states and territories. In addition, an equity, diversity, and inclusion initiative has begun within the EMSC that will influence both internal and external grant stakeholders.

## INVESTING IN PEDIATRIC HEALTH OUTCOMES: TARGETED ISSUE GRANTS

The EMS for Children Targeted Issue (TI) grants support the development of innovative strategies to address pediatric emergency care needs in both the prehospital and emergency department settings. Best practices derived from these efforts improve pediatric health outcomes related to emergency care and are replicable nationwide. In 2019, the EMSC Program funded five Targeted Issues grants to address current gaps in pediatric emergency care and enhance existing programs that promote pediatric readiness in emergency care settings.

The majority of pediatric emergency department (ED) visits occur in community hospitals who see fewer than 15 pediatric patients each day. In addition, less than 10 percent of EMS patient encounters involve pediatric patients. As a result, many EDs and EMS agencies are challenged to have the resources, skills, and training to care for children.

Over the next four years, EMSC will invest 6.5 million dollars into projects that will demonstrate the link between ED and EMS system readiness improvements and improved pediatric clinical care and health outcomes. Two of the new grants focus on improving ED pediatric readiness and assessing how adoption of the Pediatric Readiness national guidelines is associated with changes in the quality of pediatric clinical care and pediatric health outcomes. Three grants assess the impact of the presence of a Pediatric Emergency Care Coordinator (or PECC), a designated individual or combination of individuals responsible for key coordination roles focused on improving pediatric patient care and management within a local EMS agency or ED. To learn more about each project, follow this [link](#) to the 2019-2022 Targeted Issues Grant Fact Sheet.

## CONDUCTING MULTICENTER RESEARCH IN PEDIATRIC EMERGENCY CARE (PECARN)

The Pediatric Emergency Care Applied Research Network (PECARN) includes seven Research Node Centers (RNCs) that work collaboratively with Hospital Emergency Department Affiliates (HEDAs) and EMS Affiliates to develop and submit research proposals. The larger PECARN cohort conducts PECARN-reviewed and approved research at their respective institutions. Each of the six hospital-based nodes includes three hospitals and one EMS-affiliated agency. The CHAMP (Charlotte, Houston, Milwaukee Prehospital) node has three EMS affiliated agencies. The seven nodes announced in 2019 are listed below including the two newest nodes (SPARC and WPEMR\*) that will be described in more detail below.

Great Lakes EMSC Research Network (GLEMSCRN), led by Principal Investigator (PI) Rachel Stanley, MD, MHSA at Nationwide Children's Hospital.

Hospitals of the Midwest Emergency Research Node (HOMERUN), led by PI Lynne Babcock MD, MSc located at Cincinnati Children's Hospital Medical Center.

Pediatric Emergency Medicine Northeast, West & South (PEM-NEWS), led by PI Peter Dayan MD, MSc at New York-Presbyterian Morgan Stanley Children's Hospital.

Pediatric Research in Injuries and Medical Emergencies (PRIME), led by PI Nathan Kuppermann MD, MPH and Daniel Nishijima, MD, MSc at University of California, Davis.

\*San Francisco-Oakland, Providence, Atlanta Research Collaborative (SPARC)

\*West/SW Pediatric Emergency Medicine Research (WPEMR)

Charlotte, Houston, Milwaukee Prehospital EMS Research Node Center (CHaMP E-RNC), led by PI Brooke Learner, PhD. This consortium brings together

these three EMS agencies with the six PECARN affiliated EMS agencies.

The San Francisco-Oakland, Providence, Atlanta Research Collaborative (SPARC) is composed of the academic pediatric research centers at Brown University, Emory University School of Medicine, and the University of California, San Francisco. They draw upon the rich clinical and academic resources of six children's hospitals, including Hasbro Children's Hospital (the Research Node Center), Children's Healthcare of Atlanta (Egleston, Hughes Spalding, and Scottish Rite Hospitals), and two UCSF Benioff Children's Hospitals (San Francisco and Oakland). Dr. Thomas Chun is the PI, with HEDA PIs Drs. Jacqueline Grubb-Phelan, Claudia Morris, Mark Zonfrillo, and Alameda County EMS as the affiliate agency.

The West/SW Pediatric Emergency Medicine Research (WPEMR) is composed of Seattle Children's, Children's Hospital of Los Angeles and the academic research center University of Texas Southwestern. Their mission is to leverage research and content expertise to foster partnerships and to design and implement high quality equitable research that improves health outcomes for children across the continuum of emergency care. Dr. Eileen Klein is the PI, with HEDA PIs Drs. Eileen Klein, Halim Hennes, and Todd Chang with Michael Sayre with Seattle Fire/Medic One EMS as the affiliate agency.

PECARN conducts high-priority, multi-institutional research on the prevention and management of acute illnesses and injuries in children and youth of all ages. A list of new studies undergoing enrollment can be found on the [PECARN website](#).

## INAUGURAL EMSC SCHOLARS AND FELLOWS: GROWING FUTURE EMSC LEADERS

Within the EMSC space, the EMSC Innovation and Improvement Center (EIIC) provides other EMSC grantees and the larger emergency care community with training, support and tools to improve pediatric readiness of emergency care systems across the continuum of care, curates evidenced-based pediatric emergency care resources, leverages quality improvement methodology to minimize morbidity and mortality in children, and utilizes a systems-based approach to align priorities and efforts across diverse organizations.

To grow future leaders within the EMSC space, the EIIC now offers two opportunities to engage early career clinicians and health systems trainees. All clinicians (i.e. emergency medical technicians, paramedics, nurse, advanced practice providers, physicians) and graduate students or early career faculty within related fields (e.g. health policy, healthcare administration, and public health) are encouraged to apply.

The EIIC is excited to announce the first cohort of five EMSC Scholars and ten EMSC Fellows. The Scholars program is designed to support early career (<5yrs post-training) clinicians and health-systems professionals to become future leaders in the EMSC space. During this 1-2 year program, EMSC Scholars will work alongside EIIC leaders to develop and implement a unique multidisciplinary project focused on a key area(s) of interest. The EMSC Fellows program is designed to support trainees and early career professionals with an opportunity to engage in EIIC-led efforts to better understand systems-based strategies for improvement. Fellows are invited to serve on national steering committees to better understand the work of EMSC stakeholders.

## PEDIATRIC TRAUMA

Traumatic injury is the leading cause of death in children in the United States. The critical goal of an inclusive national trauma system is to ensure that EVERY child receives high quality trauma care at the appropriate level trauma center in the shortest amount of time. Approximately 17 million children in the United States do not have access to a pediatric trauma center. Because most injured children are taken to adult trauma centers or hospital emergency departments that do not specialize in the care of children, the EMSC Innovation and Improvement Center (EIIC) continues to work diligently to prepare emergency care providers with the knowledge and skill to care for injured kids. This work is a result of strong collaboration and partnerships with national organizations including the American College of Surgeons Committee on Trauma (ACS-COT), Emergency Nurses Association and the American College of Emergency Physicians with the intent to expand collaboration with other trauma related national organizations soon.

The EMS for Children program is represented among lead organizations in the trauma community and those most highly vested in improving systems to support pediatric trauma care delivery. Together efforts are underway to promote the exchange of knowledge and information, the development of pediatric evidence-based guidelines, and the dissemination of pediatric trauma education.

## PEDIATRIC READINESS EVOLVES TO ADDRESS THE CONTINUUM OF PEDIATRIC EMERGENCY CARE NATIONALLY AND INTERNATIONALLY

The EMSC Program continues to support the National Pediatric Readiness Project (NPRP), a multi-phase quality improvement initiative to ensure that all U.S. emergency departments have the essential infrastructure in place to provide effective emergency care to children. For more information about NPRP, please visit:

<https://www.pedsready.org/> <https://www.pediatricreadiness.org.>

## PEDIATRICIANS, EMERGENCY PHYSICIANS AND NURSES UPDATE RECOMMENDATIONS TO ENSURE INJURED AND CRITICALLY ILL CHILDREN RECEIVE THE BEST EMERGENCY CARE

The American Academy of Pediatrics (AAP), the American College of Emergency Physicians (ACEP) and the Emergency Nurses Association (ENA) published an updated pediatric readiness joint policy statement, “Pediatric Readiness in the Emergency Department.”

The statement was simultaneously published in *Pediatrics*, *Annals of Emergency Medicine*, and *Journal of Emergency Nursing* in November 2018 and represents a revision of the 2009 policy statement. Key areas highlighted in the most recent statement include the importance of pediatric quality metrics, pediatric patient and medication safety, and new considerations for maintaining provider competencies. These are the critical domains that define pediatric readiness in an emergency department.

The statement ([available here](#)) emphasizes the importance of evidence-based guidelines and includes additional recommendations for mental health and disaster preparedness. A checklist is now available to support implementation of the recommendations. The National Pediatric Readiness Project was born out of this joint policy statement. Since then, studies have linked pediatric readiness to as much as a four-fold difference in mortality for critically ill or injured children.

## PREHOSPITAL BASED PEDIATRIC READINESS

Following the publication of a joint policy statement “Pediatric Readiness in Emergency Medical Services Systems,” the EMSC Program convened the Prehospital Pediatric Readiness Steering Committee, comprised of representatives from federal partners (HRSA/MCHB, NHTSA Office of EMS, Indian Health Services, ASPR Office of Emergency Management and Medical

Operations), EMSC State Partnership Programs (Program Managers and the Family Advisory Network), and 20 national professional organizations. The purpose of the Prehospital Pediatric Readiness Steering Committee is to ensure emergency care for all children by improving the pediatric emergency care outcomes and patient safety at the local, regional, and state levels within the prehospital environment.

The Prehospital Pediatric Readiness Project launched in 2019 with a focus on EMS agencies. The 2021 National Prehospital Pediatric Readiness Checklist, a tool developed to analyze if an EMS agency is ready to care

for children as recommended in the policy statement, is now available. Additionally, a larger PPRP Toolkit is in development to ensure that agencies have access to compiled resources related to each item on the Checklist. For more information about this program, please visit:

<https://emscimprovement.center/domains/prehospital-care/prehospital-pediatric-readiness/>.

## ED BASED PEDIATRIC READINESS

The ED-based NPRP launched in 2013 with a national assessment and is gearing up for a national re-assessment in 2021. Data from 4,149 hospitals (83% of all hospitals in the US) that participated in the 2013 National Pediatric Readiness Assessment helped identify four major opportunities to improve the delivery of pediatric care in emergency departments:

- Quality improvement plans integrating the needs of children were missing in 55% of responding facilities.
- Children are not being weighed in kilograms in 37% of responding participant EDs putting children at risk for medication errors.
- 53% of responding EDs lack disaster plans that include children

- Pediatric emergency care coordinators are missing frequently:
  - Physician coordinators are reported in only 47% of responding EDs
  - Nurse coordinators present in 59% of responding EDs

An updated NPRP checklist and toolkit can be found here:

<https://emscimprovement.center/domains/hospital-based-care/pediatric-readiness-project/readiness-toolkit/>

The success of the National (ED and Prehospital) Pediatric Readiness Project relies heavily on partnerships with national professional organizations and federal entities.

Pediatric readiness is no longer an initiative limited to emergency departments in the United States. Hospitals in Canada, Denmark, and Australia are also embarking on pediatric readiness projects. The EMSC Program has served as the lead in facilitating both national and international efforts. National professional organizations including the American Academy of Pediatrics, the American College of Emergency Physicians, the Emergency Nurse Association, the National Association of Emergency Medical Technicians, and the National Association of EMS Physicians have also been supporting initiatives, heightening awareness, and expanding tools and resources for pediatric readiness. Last, the Canadian group, Translating Emergency

## Quality Improvement

The EMSC program employs Quality improvement (QI) methodology as a foundational mechanism to translate evidence into emergency care practice. Using the Institute for Healthcare Improvement's Breakthrough Series model as the basis for our collaborative efforts, the EMS for Children Innovation and Improvement Center leads national QI collaboratives to improve outcomes for children in emergency situations. Our collaboratives are networks designed for shared learning based on evidence-derived content and known gaps in emergency care systems and processes. To facilitate rapid translation of research into clinical practice collaboratives are supported through varied learning modalities, coaching, project management, information technology, data management, and analytics. For more information on our QI approach, please see our ["Quality Improvement in Emergency Medical Services for Children"](#) white paper.

Knowledge for Kids (TREKK), has been collaborating with the EIIC-led Pediatric Readiness Quality Collaborative, taking lessons learned across borders to improve pediatric emergency care delivery in Canadian emergency departments.

## QUALITY IMPROVEMENT COLLABORATIVES

### Pediatric Facility Recognition Collaborative April 2016 – December 2017

**Mission:** Increase by 50% the number of states that developed an implementation plan to formally recognize EDs that are ready to stabilize and/or manage children with medical emergencies based on national guidelines for the care of children in emergency department (similar to a trauma or stroke designation).

**Reach/Impact:** Fourteen states participated in the collaborative. As of December 2017, six states developed a program and an additional two had developed implementation plans. Please see the [FRC White Paper](#) for more details.

To continue to support the development of pediatric medical recognition programs (PMRP), the EMSC program has developed the PMRP Community of Practice which consists of quarterly virtual meetings. As of December 2020, 17 states have formally recognized at least one emergency department through their program.

### Pediatric Readiness Quality Collaborative (PRQC) January 2018 – June 2020

**Mission:** Assist emergency departments to improve pediatric emergency care. Sites were provided resources, tools, quality improvement education, strategies, and metrics to drive improvement in four key areas:

- 1) Weighing all children in kilograms only
- 2) Recognition and triage of abnormal vital signs
- 3) Optimization of inter-facility transfer process,

- 4) Integration of pediatric considerations into disaster planning.

**Reach/Impact:** Over 350 hospital-based nurses and physicians from 146 hospitals across 17 states participated in the collaborative. By June 2020, 7,174 patient charts and 13 disaster exercises/drills entered into the data entry system.

### Prehospital Pediatric Emergency Care Coordinator Learning Collaborative (PECCLC) November 2018 – March 2019

**Mission:** The EMSC program is working to ensure that 90% of all EMS agencies have a pediatric emergency care coordinator (PECC) by 2026. This collaborative was designed to assist participants in developing replicable strategies to increase by 50% the number of local EMS agencies with a PECC.

**Reach/Impact:** Nine states participated in the collaborative. As of August 31, 2019, a total of 525 new PECCs, or 142% of the overall goal, were recruited.

The EMSC program continues to support the development of prehospital PECCs through the PECC Community of Practice. These quarterly, one-hour meetings are intended to promote shared learning and ongoing interactions.

### Pediatric Disaster Preparedness Quality Collaborative (PDPQC) July 2020 – December 2020

**Mission:** Drive the integration of pediatric considerations into hospital disaster preparedness and recovery planning. Participants worked through a series of 8 learning modules and 3 tabletop exercises over the course of the collaborative.

**Reach/Impact:** Eighty-five participants from 31 hospitals across 13 states, 1 U.S. territory (Puerto Rico) and 1 Canadian province (Ontario) are participating in the collaborative. After the close of the collaborative, the modules will be expanded and reformatted into self-

paced, online learning modules and will be further supported through a community of practice.

## Telehealth Collaborative

January 2021 – June 2021

**Mission:** Evaluate the impact of public health crises on children and youth with special health care needs (CYSHCN) and children with behavioral health emergencies, assess telehealth capacities, and provide guidance and support to improve access to emergency pediatric services particularly in rural, tribal, and territorial areas.

**Reach/Impact:** Eight states/territories were awarded supplemental funding to develop telehealth programs within their region to meet the needs of CYSHCN or those with behavioral health emergencies during public health crises. These efforts span the entire emergency care continuum to include both prehospital and hospital-based areas of focus.

## Pediatric Emergency Care Coordinator Workforce Development Collaborative (PWDC)

September 2021 – June 2022

**Mission:** Train at least 1000 prehospital- and hospital-based pediatric emergency care coordinators (PECCs) on the core domains of pediatric readiness. Participants, including nurses, physicians, and emergency medical technicians, will take a deep-dive into each domain of pediatric readiness to identify and implement improvement efforts at their site or agency level.

## DISASTER PREPAREDNESS AND RECOVERY

The EMSC Program aims to foster coordination and collaboration across various national pediatric preparedness initiatives by bringing together representatives from national, international and federal organizations. We have formed a comprehensive steering

committee whose mission is to promote coordination among multiple national pediatric preparedness efforts while utilizing quality improvement science to drive advancement of pediatric preparedness efforts at the local, regional and national levels.

Central to this work is a robust partnership with the Assistant Secretary for Preparedness and Response (ASPR) Pediatric Disaster Care Centers of Excellence. In September 2019, ASPR funded two the creation of two the Western Regional Alliance for Pediatric Emergency Management (WRAP-EM) at UCSF Benioff Children’s Hospital and the Easter Great Lakes Pediatric Consortium for Disaster Response (EGLPCDR) at University Hospitals Rainbow Babies and Children’s Hospital. The EMSC Program’s Disaster Committee includes representatives from both centers of excellence.

Over the next several years, the Pediatric Disaster Preparedness Toolkit will be updated in coordination with the ASPR Technical Resources, Assistance Center and Information Exchange (ASPR TRACIE) and Hospital Preparedness Program (HPP) funded healthcare coalitions to serve as a single robust resource for pediatric disaster planning. This will include a pediatric disaster assessment tool for use by state agencies, regional health care coalitions or individual hospitals and will incorporate pediatric disaster preparedness and recovery metrics to drive improvement efforts to ensure pediatric considerations are included in future annex developments.

<https://emscimprovement.center/domains/preparedness/>

## USING DATA TO IDENTIFY AREAS FOR IMPROVEMENT

The EMSC Data Center, based at the University of Utah, has two major functions. The first is to serve as the **National EMSC Data Analysis Resource**

Center (NEDARC) ([nedarc.org](http://nedarc.org)) to help EMSC program grantees develop their own capabilities to collect, analyze, and utilize EMSC performance measure and other healthcare data to improve the quality of pediatric care in state EMS, hospital, and trauma systems. NEDARC is the data coordinating center for the National Pediatric Readiness Project as well as for the EMSC Performance Measures. These data collection efforts are ongoing and have consistently yielded survey response rates of 50-80% nationally over the last decade, representing data from over 4,000 hospitals and nearly 10,000 EMS agencies regarding emergency system capacity to care for pediatric patients. The data collected is being used by EMSC program grantees, public health collaborators, and researchers across the country to identify and address gaps in care. Information collected by NEDARC serves as the main source of data for several publications describing and addressing these gaps, and is used to drive system improvements across the spectrum of pediatric emergency medical care. NEDARC also partners continuously with the EIIC on several other major projects, including the National Pediatric Readiness Quality Collaborative, where NEDARC designed and developed the database, procured data use agreements from participating hospital emergency departments, served as the data stewards, and is actively helping to write manuscripts summarizing results of this patient-level quality improvement effort involving over 130 hospitals across 17 states.

## KNOWLEDGE MANAGEMENT AND DISSMEMINATION

Thousands of high-quality published studies are used each year to help develop evidence-based guidelines to improve health outcomes through achievement of best practices across the continuum of pediatric emergency care. Unfortunately, on average, 17 years elapses between the publication of research findings and their implementation into clinical practice (Balas,

1998). Approximately 40% of ill or injured children do not receive evidence supported treatment, and as many as 20% receive treatment that is of limited benefit. Despite the long-standing awareness and recognition of gaps in pediatric care outcomes, healthcare disparities continue to persist in the care of medical illnesses, traumatic injuries, and behavioral/mental health.

One of the root causes of unequal implementation of best standards of practice in pediatric emergency medicine is lack of awareness of and access to pediatric-specific guidelines by providers who care for a larger number of adult patients, compared to children. To address this, pediatric specific resources should be easily available and intuitive to use at the point of service. Therefore, to ensure equal access to high quality pediatric content to all providers of pediatric emergency care, educational content should be developed, curated, and disseminated in fashion that is easy to follow, concise, and relevant to the intended target audiences.

In July 2020, EIIC 2.0 was supported by HRSA to expand its scope to include a knowledge management domain (KM). The KM domain aims to address the evidence to practice gap in pediatric emergency care. The domain consists of three sites working synergistically on 1) evidence synthesis that informs 2) content development (creation, curation, collation) for access through the EIIC web portal, including point of care clinical resources that are packaged into Knowledge management Early Access Program (KEAP) toolkits and 3) dissemination/ implementation of educational content and toolkits. The KM steering committee includes all EMSC programs (EMSC Data Center, PECARN, TI, SP, FAN) and partner organizations (AAP, ENA, ACEP, EMSC Data Center, ACS). The group has identified target audiences, prioritized health conditions for further content development, and selected the best strategies for effective dissemination. The initial list of ten priority conditions includes *pediatric sepsis, asthma, seizure, mental health, pain and anxiety management, child abuse, traumatic brain injury, multisystem trauma, cardiac arrest and diabetes.*

During the first six months of the grant period (July through December 2020), the KM domain implemented the first KEAP on the topic of status epilepticus that involved a voluntary group of over 200 individuals who provided beta testing of the content offerings and provided feedback to guide the iterative improvement.

In December of 2020, the KM domain launched PEAK: Status Epilepticus -

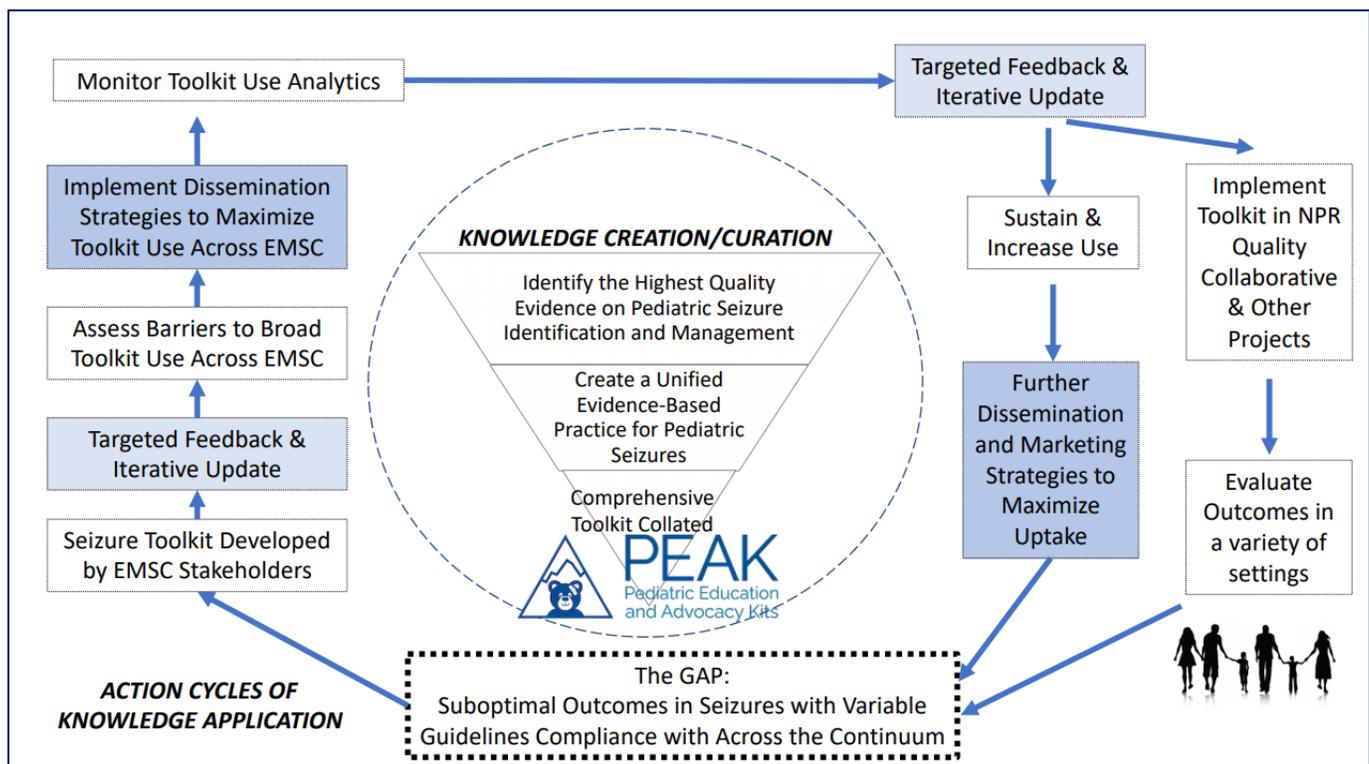
<https://emscimprovement.center/education-and-resources/peak/peak-status-epilepticus/>

PEAK (Pediatric Education and Advocacy Kit) includes diverse set of content offerings related to status epilepticus (podcasts, simulations, infographics, videos, interactive modules). PEAK has been developed using the Knowledge to Action Framework (figure). Peak has been accessed by over 1900 individuals in its first month. KM will develop at least two toolkits per year over the grant period (July 2020 - June 2024). The next topic area will be mental health and KM has begun the building of PEAKs for the agitated pediatric patient and suicide screening.

Over the next four years PEAK and other activities will facilitate the KM domain aims 1) to ensure that at least

80% of EMSC national stakeholders access high-quality resources/guidance that accelerates translation of clinical evidence into practice 2) Ensure that at least 15 % of the nation’s EMS professionals have accessed the central repository of evidence-based resources, including professionals in rural settings and 3) Ensure that at least 1,000 prehospital and hospital professionals report improved knowledge of best practices after participating in continuing education courses. The KM domain aims to is continuously working to improve the “brand” of EMSC and EIIC. The group has guided the development of a new bear logo and implemented a social media strategy across EIIC. For example, in December, the EIIC Twitter account (@emscimprovement) had 47400 impressions, 25 page views and now has over 1050 followers. Similar increased engagement has been noted on EIIC Facebook (@EMSC Innovation and Improvement Center), LinkedIn (@EMSC Innovation and Improvement Center), and Instagram (@emscic) accounts as well.

Balas EA. From Appropriate Care to Evidence-Based Medicine. *Pediatr Ann.* 1998;27(9):581-584



## RESEARCH UPDATE

### PECARN PUBLICATIONS

- [Sex Without Contraceptives in a Multicenter Study of Adolescent Emergency Department Patients](#) Acad Emerg Med. 2020 Apr;27(4):283-290. PMID: 31596987
- [Radiographic Pneumonia in Febrile Infants 60 Days of Age and Younger](#) Pediatr Emerg Care. 2020 Jul 18. PMID: 32701869
- [Time to Positive Blood and Cerebrospinal Fluid Cultures in Febrile Infants ≤60 Days of Age](#) Hosp Pediatr. 2020 Sep;10(9):719-727. PMID:32868377
- [Racial and Ethnic Disparities in the Delayed Diagnosis of Appendicitis Among Children](#) Acad Emerg Med. 2020 Sep 29. Online ahead of print. PMID:32991770
- [Racial/Ethnic Differences in Emergency Department Pain Management of Children with Fractures](#) Pediatrics. 2020 May;145(5):e20193370. PMID:32312910
- [Frequency and Risk Factors of Acute Kidney Injury During Diabetic Ketoacidosis in Children and Association With Neurocognitive Outcomes](#) JAMA Netw Open. 2020 Dec 1;3(12):e2025481. PMID: 33275152
- [Hypertension during Diabetic Ketoacidosis in Children.](#) J Pediatr. 2020. Aug;223:156-163.e5. PMID: 32387716
- [Factors Associated with Non-Adherence in an Emergency Department Based Multicenter Randomized Clinical Trial of a Probiotic in Children with Acute Gastroenteritis](#) J Pediatr Gastroenterol Nutr. 2021 Jan 1;72(1):24-28. PMID: 32804911
- [Provider-Level and Hospital-Level Factors and Process Measures of Quality Care Delivered in Pediatric Emergency Departments](#) Acad Pediatr. May-Jun 2020;20(4):524-531. PMID: 31760173
- [Opioid Prescription Patterns at Emergency Department Discharge for Children with Fractures](#) Pain Med. 2020 Sep 1;21(9):1947-1954. PMID: 32022894
- [Intravenous Magnesium in Asthma Pharmacotherapy: Variability in Use in the PECARN Registry](#) J Pediatr. 2020 May;220:165-174.e2. PMID: 32147221
- [A Multiyear Cross-sectional Study of Guideline Adherence for the Timeliness of Opioid Administration in Children With Sickle Cell Pain Crisis](#) Ann Emerg Med.. 2020 Sep;76(3S):S6-S11. PMID: 32928464
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- [Efficacy of levetiracetam, fosphenytoin, and valproate for established status epilepticus by age group \(ESETT\): a double-blind, responsive-adaptive, randomised controlled trial.](#) Lancet. 2020 Apr 11;395(10231):1217-1224. PMID: 32203691

- [Five Profiles of Adolescents at Elevated Risk for Suicide Attempts: Differences in Mental Health Service Use](#) J Am Acad Child Adolesc Psychiatry. 2020 Sep;59(9):1058-1068.e5 PMID: 31830523
- [Predicting 3-month risk for adolescent suicide attempts among pediatric emergency department patients](#) J Child Psychol Psychiatry. 2019 Oct;60(10):1055-1064. PMID: 31328282
- [The EMS Pediatric Emergency Care Coordinator Role Description](#) Spring 2020.
- [Contraception Provision in the Emergency Department](#) J Womens Health (Larchmt). 29, 5, 2020.
- [The Probiotic Conundrum: Regulatory Confusion, Conflicting Studies, and Safety Concerns](#) JAMA, 323, 9, 2020.
- [A Research Agenda for Emergency Medicine–based Adolescent Sexual and Reproductive Health](#) Acad Emerg Med, 26, 12, 2019.
- [Randomized Trial of Three Anticonvulsant Medications for Status Epilepticus](#) NEJM, 381, 22, 2019.
- [Methodology and demographics of a brief adolescent alcohol screen validation study](#) Pediatr Emerg Care, 35, 11. PMID: 29112110
- [Cognitive Function Following Diabetic Ketoacidosis in Children With New-Onset or Previously Diagnosed Type 1 Diabetes](#) DKA FLUID Study Group Diabetes Care, 43. 2020
- [Predicting severe pneumonia in the emergency department: a global study of the Pediatric Emergency Research Networks \(PERN\)—study protocol](#) BMJ Open, 10, 12
- [Prehospital Factors Associated With Cervical Spine Injury in Pediatric Blunt Trauma Patients](#) Acad Emerg Med. 2020
- [International Practice Patterns of Antibiotic Therapy and Laboratory Testing in Bronchiolitis ; PEDIATRIC EMERGENCY RESEARCH NETWORKS \(PERN\).](#) Pediatrics, 146, 2. 2020
- [Development and Internal Validation of a Prediction Model to Risk Stratify Children With Suspected Community-Acquired Pneumonia](#) Clinical Infectious Diseases, 2020
- [Characteristics of Neighborhoods Where Emergency Medical Services Encounter Children at Risk for Maltreatment](#) Prehospital Emergency Care, 23, 2019
- [Suicide risk among gender and sexual minority college students: The roles of victimization, discrimination, connectedness, and identity affirmation](#) Journal of Psychiatric Research, 121, 0, 2020
- [Emergency Call Characteristics and EMS Dispatcher Protocol Adherence for Possible Anaphylaxis](#) Prehospital Emergency Care, 23, 5, 2019
- [Prehospital management of pediatric asthma patients in a large emergency medical services system](#) Pediatric Pulmonology, 55, 1, 2019
- [Variation in Prehospital Protocols for Pediatric Seizure Within the United States](#) Pediatric Emergency Care, 2020
- [A Call for Collaboration: Knowledge Dissemination to Improve the Emergency Care of Children](#) Society for Academic Emergency Medicine, 27, 6, 2020

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