



Ensuring Pediatric Readiness for All Emergency Departments

National Pediatric Readiness Project

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Innovation and Improvement Center



Emergency Medical Services for Children

IMPLICATIONS OF PEDIATRIC READINESS IN THE EMERGENCY DEPARTMENT

This publication describes the history of the National Pediatric Readiness Project (NPRP), the progress made to date, and the need for continued efforts to improve pediatric health care services within the nation's emergency departments.

Every day, 80,000 children will seek care in a U.S. emergency department (ED).¹ The great majority of these visits (69.4%) will occur in community EDs that see fewer than 15 pediatric patients per day. The 2006 Institute of Medicine Report, *Growing Pains*, revealed that although children constitute about 25% of all ED visits nationwide, most general EDs and EMS agencies do not require specialized pediatric training for clinical staff. Additionally the report revealed that most EDs do not have the full scope of pediatric equipment, medications, and supplies for children, and that there is a paucity of research on best practices, clinical outcomes, and patient safety. If there is one word to describe the state of pediatric emergency care in 2006, it is "uneven".

Lack of pediatric readiness in U.S. EDs puts the nation's most valuable resource, children, at risk when both immediate care and expertise are needed the most. Voids in pediatric readiness contribute to inequalities and inconsistencies in the delivery of pediatric emergency care as described in the 2006 Institute of Medicine report and other publications.^{2,3,4}



The Emergency Medical Services for Children (EMSC) Program

In 1984, Congress signed into law the federal Emergency Medical Services for Children (EMSC) Program, with the primary goal to assure appropriate and effective pediatric emergency care across the nation. The EMSC Program is administered by the Health Resources and Services Administration (HRSA) within the U.S. Department of Health and Human Services (HHS). It is the only federal program focused on the emergency care needs of America's children. Whether in times of a disaster or an everyday emergency, the EMSC Program supports every ED in every state and U.S. territory to provide the right care, in the right place, at the right time for each and every child.

Over its 33 years of existence, the EMSC Program has focused on supporting and ensuring Emergency Medical Services (EMS) systems, hospital EDs, and the entire continuum of medical care incorporate the needs of children.



Pediatric Readiness is the day-to-day capability of an ED to meet the immediate needs of an ill or injured child.

EMSC AND ITS NATIONAL PARTNERS: ESTABLISHING GUIDELINES FOR CARE OF CHILDREN IN THE EMERGENCY DEPARTMENT

Guidelines for Care of Children in the Emergency Department



Administrative oversight of pediatric emergency care including the identification of Pediatric Emergency Care Coordinators (PECCs)



Quality Improvement programs that include pediatric patients



Professional pediatric competencies of health care workers in the ED



Pediatric patient safety measures



Support services (laboratory, radiology) needed to facilitate care of children



Policies and procedures that include children



Equipment, medications, and supplies for children

The federal EMSC Program serves as the coordinating entity among federal agencies and professional organizations in the pediatric emergency community. Among many influential agencies and organizations, this community includes: EMSC Grantees and families, the American Academy of Pediatrics (AAP), the American College of Emergency Physicians (ACEP), and the Emergency Nurses Association (ENA). Together, these partners have worked collectively on numerous pediatric emergency initiatives, including standing up the National Pediatric Readiness Project and developing evidence-based recommendations and resources for improving the emergency care of children.

In 2009, an updated joint policy statement was released from AAP, ACEP, and ENA titled, “Guidelines for Care of Children in the Emergency Department.”⁵ Twenty-two national professional organizations endorsed the guidelines and agreed to support efforts to better address the needs of children seeking emergency/trauma care.

Widespread adoption of the guidelines by states and EDs would ensure children receive the right care, at the right place, at the right time regardless of where they live in America.⁶ The “Guidelines for Care of Children in Emergency Departments” established a baseline of pediatric readiness in this country and the framework upon which quality care improvement for children needs to be built.⁷

In critical moments of medical and traumatic emergencies, the delivery of optimal healthcare can mean the difference between life and death.

INSTITUTIONALIZING GUIDELINES: THE NATIONAL PEDIATRIC READINESS PROJECT

Beginning in 2011, the EMSC community embarked on an aggressive Quality Improvement (QI) campaign, the NPRP, to address the gaps noted in the 2006 IOM report and earlier surveys.^{2,3,4} The EMSC Program reconvened experts in pediatric emergency care and an ambitious plan was outlined for the NPRP, which would build upon the 2009 joint guidelines.

Purpose of the National Pediatric Readiness Project (NPRP)

- 1 To establish a composite baseline of the nation's capacity to provide care to children in the ED.
- 2 To create a foundation for EDs to engage in an ongoing Quality Improvement (QI) process that includes implementing the Guidelines for the Care of Children in the ED (2009 national guidelines).
- 3 To establish a benchmark that measures an ED's improvement over time.^{6,8}

Plans included a national assessment of America's EDs to determine progress in pediatric readiness, identify existing gaps, provide the baseline for QI programs in hospital EDs around the country, develop national collaboratives to address common and critical gaps, and identify best practices.

Baseline Data: Setting the Benchmark

More than 4100 hospitals, or 82% of the nation's EDs, participated in the 2013 NPRP assessment. Upon completion of the assessment, each ED received a Weighted Pediatric Readiness Score (WPRS) and gap analysis. The WPRS represents the ability of an ED to meet the immediate needs of a critically ill child



based on the 2009 Guidelines. The median WPRS for participating facilities was 68.9 on a 100-point scale. Although this score is a marked improvement from the earlier study of pediatric readiness conducted in 2003, when the score was found to be 55, there is still much work to be done.^{6,9}

Common gaps identified included:

- Lack of pediatric emergency medical/nursing care coordinators or champions in the ED
- Lack of inter-facility transfer guidelines and agreements for children
- Failure to measure pediatric weights solely in kilograms (patient safety measure)
- Lack of QI processes with pediatric-specific metrics
- Lack of disaster plans that included pediatric-specific needs⁶

The findings also showed that while approximately 83% of pediatric emergencies were treated at local community hospitals or non-children's hospital EDs; lower volume, general EDs were less likely to have the essential resources needed for children.

Disseminating the Findings: Publications and Presentations

The benchmarking data for America's EDs from the 2013 assessment of the NPRP has codified the efforts in the publication of 3 manuscripts in peer-reviewed journals and 2 additional publications accepted for future publication.

- National Assessment of Pediatric Readiness of Emergency Departments, *Journal of the American Medical Association Pediatrics*.⁶
- Pediatric Readiness and Facility Verification, *Annals of Emergency Medicine*.⁸
- Pediatric Readiness in Indian Health Service and Tribal Emergency Departments: Results from the National Pediatric Readiness Project, *The Journal of Emergency Nursing*.¹¹

Numerous presentations at national and state professional meetings have also been delivered. Additionally, formal presentations by HRSA and NPRP representatives were held with The Joint Commission and its members in May 2016 and with the American Hospital Association (AHA) and its members in June 2016.

Deficits in pediatric readiness, the importance of pediatric readiness, as well as implications for improving pediatric emergency care, have been emphasized in each of these presentations. As a result of presentations with The Joint Commission, key elements of pediatric readiness are being explored and considered for adoption in hospital ED verification standards.



implications on the improvement of the day-to-day readiness of EDs to care for children.⁶

Pediatric Readiness Toolkit

To assist EDs in addressing some of the identified gaps, the EMSC Program collaborated with national partners to develop an extensive web-based Pediatric Readiness Toolkit that includes evidence-based policies and procedures, checklists, and additional resources to assist EDs needing additional support in achieving pediatric readiness. In addition, three specific EMSC sponsored webinars were created in 2015 with hundreds of viewers for each:

- Is your ED Ready for Children? Pediatric Emergency Care Coordinators Lead the Way to Readiness!
- National Pediatric Readiness Project: Preparing the ED to Provide Psychosocial Support to Children and Families in a Disaster.
- Next Steps in Quality Improvement: Measuring Your ED Readiness Improvement – Peds Ready Assessment Portal Now Open. <https://www.pedsready.org/>

Resources to Support Implementation of Pediatric Readiness

The EMSC Program and its partners have developed a number of resources and tools (highlighted below) to support the implementation of the NPRP across the nation. The process by which multiple professional organizations and federal agencies have worked together demonstrates the power of engagement by a national coalition that has significant public health

All three webinars are now archived and available at: <https://emscimprovement.center/projects/pediatricreadiness/WhatsNewPediatricReadiness14/pedsreadywebinars>.

Inter-facility Transfer Toolkit for the Pediatric Patient

In collaboration with ENA and the Society of Trauma Nurses (STN) the “Inter-facility Transfer Tool kit for the Pediatric Patient” was developed. This toolkit is a resource for facilities needing assistance in developing inter-facility transfer agreements and guidelines that integrate the needs of children and families as a requirement of being pediatric ready. It has been downloaded and viewed over 1500 times. The toolkit may be found at: <https://emscimprovement.center/resources/publications/interfacility-transfer-tool-kit/>.

Checklist of Essential Pediatric Domains and Considerations for Every Hospital’s Disaster Preparedness Policies

Finally, the EMSC Program collaborated with a panel of experts to develop a *Checklist of Essential Pediatric Domains and Considerations for Every Hospital’s Disaster Preparedness Policies* available at: https://emscimprovement.center/media/emsc/files/pdf/emsc_resources/checklist_ped_domains/Checklist_HospitalDisasterPrepared2125.pdf?la=en.



Transforming Pediatric Emergency Care Through Quality Improvement

QI initiatives include opportunities to reassess progress as a result of implemented changes. In 2016, the EMSC Program funded the EMS for Children Innovation and Improvement Center (EIIIC) based at Baylor College of Medicine/Texas Children’s Hospital. Working in partnership with the federal EMSC Program and associated resource center—the National EMSC Data Analysis Resource Center (NEDARC)—the EIIIC focuses on accelerating improvements in quality of care and outcomes for children needing emergency care through integration of QI science into EMSC Program activities. The EIIIC sponsors national QI collaboratives that strive to improve outcomes in pediatric care, and ultimately to reduce morbidity and mortality for children requiring urgent or emergent health care services in their communities or states. QI collaboratives allow teams to learn from one another, test changes to improve outcomes, and use their collective experience and data to understand, implement, and disseminate best practices for common adoption. The EMSC QI collaboratives align with the Institute for Healthcare Improvement’s Breakthrough Series collaborative model¹⁰ and with the priorities of the EMSC Program.

Since the initial launch of the 2013 national assessment, the EMSC Program allows any hospital to access its web-based pediatric readiness portal. NEDARC developed the portal to provide an easy-to-use NPRP assessment with a friendly welcome page, and easy navigation to the survey through use of drop down menus. Most importantly, the portal creates a unique ID for each respondent so that site-specific progress can be tracked over time. Participating in reassessment provides an opportunity for all EDs to measure incremental changes and define next steps for improving their pediatric readiness. EDs may take the assessment as many times as they like to monitor progress in pediatric readiness. Individual gap reports are available for sites reassessing their progress. Since November 2015, more than 1,500 hospitals have participated in the reassessment.

Another method to promote pediatric readiness is through the development of statewide pediatric facility recognition programs. Similar to stroke and trauma centers, pediatric facility recognition programs have been used to identify those EDs that maintain a certain level of pediatric readiness as defined by the 2009 guidelines. When such programs exist, EMS agencies may preferentially transport pediatric patients to pediatric verified EDs.

Beginning in early 2016, 14 State EMSC Programs joined a QI collaborative under the direction of the EMSC Program’s EIIC. This QI collaborative is focused on developing statewide programs to support and

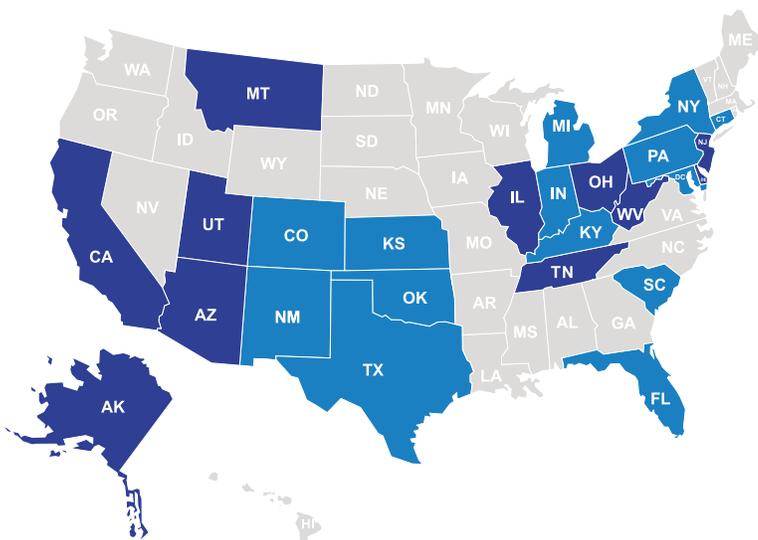
recognize pediatric-ready EDs. Pediatric facility recognition programs support EDs to become pediatric ready by providing tools, resources, and recognition for local efforts. With only 6 months remaining of the 18-month collaborative, all 14 participating states have made great progress toward implementing such programs including garnering statewide stakeholder support, identifying criteria for recognition, establishing best practices to support EDs, and developing implementation plans.

Eleven additional state EMSC Programs have successfully implemented a process to verify or recognize pediatric-ready EDs. Such programs have garnered support from family advisory networks by ensuring that EDs have the ability to meet the needs of critically ill or injured children, thereby decreasing the inequalities of pediatric emergency care as described in the 2006 IOM report, *Growing Pains*. A table depicting states and territories with pediatric facility recognition programs in place and those working on development of similar programs, via the EIIC’s Facility Recognition Collaborative are listed below. A few states are preparing to launch a pediatric medical recognition program in their state and have developed tools such as a “pathways to success” for hospital EDs to ensure ongoing support to help facilities improve systems and processes to be more prepared for children.

Demonstrating the Impact of the NPRP: State Highlights

CA A study examining the NPRP data in California found that pediatric readiness verification programs, PECCs, and QI plans that include children were each **independently associated with higher WPRS**.⁸

AZ A recent study out of Arizona provides further evidence of the impact of pediatric facility recognition programs. This study demonstrated a **reduction in pediatric deaths in hospitals with a pediatric facility verification program**.¹²



States with Pediatric Readiness Facility Recognition Programs in Place

Alaska	Illinois	Tennessee
Arizona	Montana	Utah
California	New Jersey	West Virginia
Delaware	Ohio	

States Participating in the Collaborative to develop a Pediatric Readiness Facility Recognition Program

Colorado	Indiana	New York
Connecticut	Kansas	Oklahoma
District of Columbia	Kentucky	Pennsylvania
Florida	Michigan	South Carolina
	New Mexico	Texas

In June 2017, the EMSC Program’s EIC announced a second Pediatric Readiness Quality Collaborative (PRQC). Beginning in January 2018, 20 teams representing approximately 200 hospitals will be invited to participate in the collaborative. Using a train-the-trainer model, trainers from comprehensive medical centers and children’s hospitals will work closely with pediatric champions from 8-12 lower volume, affiliate EDs to implement local pediatric QI programs. The collaborative will focus on key interventions based on common gaps identified in the 2013 national assessment, including: measuring and recording pediatric patient weights in kilograms only (patient safety); recognition and notification of abnormal pediatric vital signs;

development of patient and family-centered interfacility transfer guidelines; and integrating pediatric-specific needs into disaster planning. All participants will be supported through education, resources, and data collection tools to implement local and regional QI processes targeting pediatric readiness. Participants will explore factors impacting pediatric readiness achievement while learning strategies and best practices for improvement from one another.

National QI collaboratives are relatively new to health care; they facilitate rapid adoption of evidence-based guidelines that results in short-term transformation of healthcare for patients.

MOVING THE NPRP FORWARD: A NATIONAL EFFORT

The linkage of pediatric readiness to the reduction of pediatric morbidity and mortality, combined with knowledge of the specific gaps and needs identified in hospital EDs during Phase 1 of the NPRP, has garnered continual support from national professional organizations and federal entities alike. Each of the EMSC partnering organizations (AAP, ACEP, and ENA) has identified specific activities to further support pediatric readiness efforts. Projects include:

AAP Committee on Pediatric Emergency Medicine (COPEM); Disaster Preparedness Advisory Council (DPAC); and Section on Emergency Medicine (SOEM)

- Review and update the 2009 “Guidelines for Care of Children in the ED”
- Develop a new policy statement on “Pediatric Prehospital Readiness”
- Link state EMSC Programs to the AAP disaster network
- Update pediatric readiness resources and toolkit
- Develop education incentives for member participation

American College of Emergency Physicians (ACEP)

- Develop pediatric-specific learning modules for emergency physicians
- Identify pediatric quality metrics
- Review and update pediatric readiness resources and guidelines in collaboration with AAP and ENA
- Incentivize member participation in pediatric readiness efforts

Emergency Nurses Association (ENA)

- Link states working on pediatric readiness QI projects and EIC-sponsored collaboratives to local nurse champions
- Revise the pediatric readiness guidelines in collaboration with AAP and ACEP
- Develop best practices for increasing awareness of pediatric readiness
- Develop an annual award to recognize nurse leaders in pediatric readiness efforts

CONCLUSION

With 33 years of experiential knowledge and action, the EMSC Program will continue to diligently work to improve access to high quality pediatric emergency services for all ill and injured children and their families. The NPRP has expanded the nation's capacity to meet the emergency care needs of all children regardless of location and proximity to a specialized care center. States that have already fostered pediatric readiness recognition programs, as recommended by the IOM report, *Growing Pains*, are beginning to demonstrate the Program's mission of reducing pediatric morbidity and mortality due to illness and injury. The EMSC Program and the NPRP are critical to ensuring quality emergency

care for all the nation's children. Whether in times of a disaster or an everyday emergency, the EMSC Program supports every ED in every state, U.S. territory, and freely associated state to provide the right care, in the right place, at the right time for each and every child.



**Join the
National
Pediatric
Readiness
Project!**

Take the Peds Ready Assessment to measure your emergency department's readiness and register for the next quality improvement collaborative when the call comes open again!

Visit <https://emscimprovement.center/projects/pediatricreadiness/about/> to learn more.

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