



## Health Resources and Services Administration's Emergency Medical Services for Children Targeted Issues Grant Fact Sheet 2019-2022

In 2019, the Health Resources and Services Administration (HRSA), Emergency Medical Services for Children (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 departments (EDs) visits occur in community hospitals who see fewer than 15 pediatric patients each day.<sup>1</sup> In addition, less than 10 percent of prehospital emergency medical services (EMS) patient encounters involve pediatric patients.<sup>2</sup> 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 will 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 will 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. The grants and their objectives are summarized below.

**CONNECTICUT – Yale University.** Pediatric Emergency Care Coordination in EMS Agencies: Measuring the Influence, Magnifying the Improvement (Principal Investigator: Mark X. Cicero, MD).

Pediatric Emergency Care Coordinators (PECCs) are believed to have a positive effect on pediatric prehospital care by ensuring training, education, and resources that establish standards and encourage guideline adherence in EMS agencies. However, many aspects of PECC training and evaluation, as well as the effects of PECCs on health outcomes and EMS agencies, remain unstudied. This project's goal is to assess the impact of PECC designation on the quality of clinical care, on patient and family-centered outcomes, and to determine the best methods for establishing PECCs among EMS agencies. The project is being conducted in three states: Connecticut, Rhode Island and Colorado. The project objectives include: (1) an assessment of

PECCs' effect on EMS pediatric care and health outcomes; (2) establishing the best methods for assigning PECCs and for execution of their role in EMS agencies; and (3) characterizing the activities and outcomes of an effective PECC and development of an evaluation process to measure effectiveness of a PECC on EMS agencies. Health outcomes to be assessed include ED and hospital lengths of stay, adherence to EMS protocols including medication administration, ED disposition, and response to therapy.

**LOUISIANA – Louisiana Department of Health, Office of Public Health.** Pediatric Care Coordination in EMS Agencies – Improving Child Health Outcomes in Louisiana (Principal Investigators: Toni Gross, MD, MPH and Gail Gibson, RN, MSN, FABC).

This project will improve system readiness in Louisiana's emergency healthcare system by creating a statewide consortium of PECCs in EMS agencies. Establishing this statewide system of collaboration will provide resources, support networks, education, training, and personnel development that will ultimately improve pediatric emergency care across Louisiana. Data from multiple EMS agencies collectively serving over 35,000 pediatric patients annually will be linked to hospital ED data to determine how the presence of PECCs in the pre-hospital setting affects pediatric patient health outcomes. The objectives are to: (1) develop a statewide system of PECCs that will provide education, training, and resources regarding pediatric emergency care and equipment to EMS agencies; (2) establish and maintain partnerships that work toward improved prehospital pediatric emergency care provided by EMS agencies; (3) increase prehospital pediatric guideline adherence in order to decrease medication errors and improve initiation of appropriate treatment in a prehospital setting; and (4) collect and share data from EMS agencies regarding the results and effectiveness of the PECC program and communicate findings to EMSC stakeholders. Health outcomes to be assessed include mortality, discharge from hospital into a skilled nursing or rehabilitation facility, hospital length of stay, and return of spontaneous circulation in out-of-hospital cardiac arrest.

<sup>1</sup> Gausche-Hill M, Ely M, Schmuhl P, et.al. A National Assessment of Pediatric Readiness of Emergency Departments. JAMA Pediatrics. 2015;169(6):527-534.

<sup>2</sup> Data source: National Emergency Medical Services Information System (NEMSIS).

**NORTH CAROLINA – University of North Carolina at Chapel Hill.** System Readiness Improvements through the EMS Pediatric Emergency Care Coordinators Program (*Principal Investigator: Jane Brice, MD, MPH*).

Due to high personnel turnover and inexperience in pediatric emergency care among EMS workers, it can be difficult to ensure that new medical guidelines are fully implemented in a timely manner. The goal of this project is to expand upon and improve an existing program and establish a sustainable, affordable, and replicable program comprised of prehospital PECCs supported by a rich system of resources and accountability tools. The objectives are to: (1) standardize the role and position description of a PECC and implement PECCs in specified rural areas of North Carolina; (2) institute an online PECC Hub that will provide educational resources and training for both PECCs and EMS providers, including access to Performance Adherence Reports (PARs); (3) broaden the current PAR program by implementing PARs and educational courses which include additional nationally-recommended prehospital performance measures; and (4) use a mixed methods design to evaluate successful facets of the PECC program, as well as any limitations or adverse outcomes. The focus is on assessing impact on several areas of prehospital care, including but not limited to seizure, altered mental status, cardiac arrest, health care equipment and special needs, and behavioral health.

**OREGON – Oregon Health and Science University.** A Multi-State Evaluation of Emergency Department Pediatric Readiness: Guideline Update and Association with Quality, Outcomes, and Cost (*Principal Investigator: Craig D. Newgard, MD, MPH*).

The National Pediatric Readiness Project (NPRP) launched in 2012 to ensure ideal pediatric emergency care by implementing standardized guidelines for EDs and measuring their improvement. However, the ability of EDs to adopt and implement these guidelines, the impact on health outcomes, and the associated costs have not yet been evaluated. To address this gap, the investigators will evaluate two multistate cohorts of children presenting to EDs combined with national survey data to evaluate the impact of ED Pediatric Readiness in 13 states (1,504 EDs) and (separately) trauma systems in 44 states (639 trauma centers). The project will focus on two high-risk subgroups within these cohorts that are likely to be particularly sensitive to ED readiness: seriously injured children (Injury Severity Score  $\geq 16$ ) and critically ill non-injured children. The objectives of this project are to: (1) measure pediatric emergency care guideline uptake and the associated health outcomes of children over an 8-year period; (2) assess the improvements in pediatric health outcomes that would result from children receiving emergency care at high-readiness EDs within 30 minutes from their homes; and (3) determine costs associated with various levels of readiness for both hospitals and patients. Health outcomes to be assessed include mortality, preventable complications, and costs for both patients and hospitals.

**TEXAS – Dell Medical School at the University of Texas at Austin.** Developing a National Pediatric Readiness Project Quality Improvement Data Registry (*Principal Investigator: Katherine Remick, MD*).

The majority (83%) of children seek care in non-pediatric specialty emergency departments (ED). On average EDs see less than 15 pediatric patients a day and less than 50% report a quality improvement (QI) process for pediatric patients. Results from the National Pediatric Readiness Project (NPRP) demonstrated over 80% of US EDs want to provide quality pediatric care. Facilities are poised for engagement, but no Quality Improvement (QI) data registry exists to assess processes of care and adherence to evidence-based clinical care. The investigators will address these gaps by developing a data registry system and using this tool to evaluate and improve pediatric readiness efforts. Health outcomes will be assessed by using two common clinical conditions to measure the effectiveness of QI efforts relating to pediatric readiness. The project objectives are to: (1) establish standardized indicators for clinical care processes and conditions that positively influence pediatric health outcomes; (2) build a data registry system that allows for data collection and communication of benchmarks for non-pediatric EDs and QI interventions; (3) Evaluate the effects of pediatric readiness interventions on health outcomes; and (4) Develop a system that encourages participation in pediatric readiness QI processes and determine methods of long-term sustainability for the registry project.

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