



Health Resources and Services Administration's Emergency Medical Services for Children Targeted Issue Grants, 2013

This year, the Health Resources and Services Administration (HRSA), Emergency Medical Services for Children (EMSC) Program funded six grants focusing solely on pediatric pre-hospital research. This represents one of the largest investments, \$5.4 million over three years, in pediatric prehospital research. Multiple research agendas, to include the *Gap Analysis of EMS Related Research* report to the Federal Interagency Committee on Emergency Medical Services, noted that prehospital research has failed to keep pace with the research of other medical disciplines. This coupled with the small number of pediatric EMS patient encounters as compared to adults emphasized the critical need to further contribute to the field of prehospital pediatric care. These newly-funded projects will either demonstrate the ability of EMS systems to conduct pediatric research or seek to improve the quality of care by increasing the base of pediatric prehospital research.

NEW HAMPSHIRE - Geisel School of Medicine and Dartmouth-Hitchcock Medical Center. *Innovating and Improving Prehospital Pediatric Care in Rural New Hampshire and Vermont: The Center for Rural Emergency Services and Trauma (CREST) Network for EMS Providers (Principal Investigator: Scott Rodi, MD).* Emergency medical service (EMS) providers face many challenges in the delivery of pediatric prehospital care. Moreover, the infrequency of pediatric prehospital encounters makes it difficult for EMS providers to maintain the necessary knowledge and skills to care for pediatric patients. These challenges are exacerbated by a shortage of educational opportunities and medical direction often realized in the rural setting. The goal of this project is to improve care for pediatric prehospital patients in rural Northern New England through increasing the comfort, knowledge, skills, and competency of EMS providers. Objectives include to: (1) develop a regional EMS organization (CREST for EMS), (2) develop and implement a translational toolkit designed to improve knowledge/skills, (3) facilitate communication between prehospital and hospital providers, and (4) develop and implement a competency toolkit.

NEW YORK - Hofstra North Shore-LIJ School of Medicine at Hofstra University. *Prehospital Oral Steroids for the Treatment of Status Asthmaticus in Children (POSTSAC) Study (Principal Investigator: Robert Silverman, MD, MS).* EMS personnel are currently limited to nebulizer treatments among pediatric asthmatics with acute exacerbations. In addition, children who present to the emergency department (ED) frequently encounter up to two hour wait times before supplemental steroids that may hasten recovery are administered. Allowing EMS personnel to administer steroids in the prehospital setting may prevent possible health consequences for the child, including increased hospital admissions and prolonged ED visits. The goals of this project are to: (1) determine if prehospital administration of oral steroids by paramedics to pediatric patients with moderate to severe asthma exacerbations decreases time spent in the ED and the need for hospitalization and (2) determine if advanced life support (ALS) providers can successfully administer oral steroids (prednisolone) to children with moderate-to-severe asthma. Objectives include to: evaluate the efficacy of oral steroid administration and the ability of ALS units to administer oral steroids by examining: (1) prehospital treatment intervals and success of administration, (2) time spent receiving ED asthma treatments, and (3) the need for hospital admission or admission to the intensive care unit.

KENTUCKY- University of Louisville Research Foundation. *Compassionate Options for Pediatric EMS (COPE) (Principal Investigator: Mary Fallat, MD).* EMS providers are often the first line to console grieving parents who have lost a child because of a traumatic event or illness outside the hospital. Moreover, the initial encounter with grieving parents of pediatric fatalities is overwhelming to EMS providers because they feel inadequately prepared to handle the incident which has resulted in EMS providers leaving the profession. The goal of this project is to develop a systems approach to out-of-hospital (OOH) pediatric death that equips EMS providers with the knowledge, tools and skill set needed

to manage emotional and psychological effects for the grieving families they encounter as well as for themselves. Objectives include to: (1) understand and characterize a plan to improve EMS services in the management of OOH pediatric deaths, (2) create the first iteration of the COPE mobile app for management of OOH pediatric death by first responders, (3) study EMS use of the COPE mobile app in a validated simulations program with feedback from EMS and parents, and (4) field test the COPE mobile app toward dissemination of the EMS tool.

INDIANA – Indiana University. Treat the Street: Prehospital Pediatric Asthma Intervention Model to Improve Child Health Outcomes (*Principal Investigator: Andrew Stevens, MD*).

Significant gaps in care following an ED visit or hospital discharge are illustrated by repetitive ED visits among children with asthma. In addition, in-home asthma assessments have been successful in reducing repetitive ED visits or ED recidivism rates. Typically, in-home assessments are conducted by a public health nurse. However, the capacity for the public health system to absorb a large number of referrals is limited. Specialty trained community paramedics are EMS professionals that help improve health outcomes by providing clinical preventive services, acute care, and post-acute care. Therefore, community paramedics are ideal candidates to conduct the in-home assessments. The goal of this project is to utilize a novel pediatric community paramedicine program to: (1) address identified gaps in pediatric asthma care, (2) reduce ED recidivism rates for children, (3) improve pediatric health outcomes, and (4) enhance paramedic provider roles in the delivery of patient care. Objectives include to: (1) utilize EMS services to rapidly incorporate evidence-based public health prevention strategies within the existing network of care, (2) utilize a community paramedicine model to ensure that the right care is available to patients at the right time and at the right venue, (3) develop and deploy a workforce of specially specialty trained out-of-hospital care providers to implement various prevention and intervention strategies, (4) conduct research, analyze data, and disseminate results regarding impact of the pediatric community paramedicine model on ED recidivism rates and enhanced paramedic scope of practice, and (5) recommend reimbursement strategies for bundled community paramedicine services provided by EMS.

TEXAS – Baylor College of Medicine and Texas Children’s Hospital. Pediatric Evidence-Based Guidelines Assessment of EMS System Utilization in States (*Principal Investigator:*

Manish Shah, MD). Reducing the variation in practice is an integral component of providing quality health care. Moreover, the standardization of prehospital interventions has been linked to an overall improvement in health outcomes. Prehospital care is usually standardized within an EMS system through the use of guidelines or protocols, also known as

offline medical direction. However, medical protocols vary from one EMS agency to another, making standardization of care across EMS agencies challenging. The goal of this project is to improve the evidence base for pediatric prehospital care utilizing the National Prehospital Evidence-Based Guideline (EBG) Model Process. Objectives include to: (1) develop four pediatric-relevant EBGs using the National Prehospital EBG Model Process, (2) implement two of the four pediatric-relevant, prehospital EBGs in the Houston Fire Department system, to demonstrate effectiveness of care and (3) implement two locally-tested (in Houston), pediatric-relevant prehospital EBGs through the New England Council on EMS, in order to evaluate EMS system-level and selected patient-level prehospital outcomes utilizing data available from the National EMS Information Systems database.

WISCONSIN – Medical College of Wisconsin. Development of the Charlotte, Houston and Milwaukee Prehospital (CHaMP) Research Node (*Principal Investigator: Brooke Lerner, PhD*).

EMS is a relatively new specialty and limited research exists on how to improve care in the prehospital setting. The scarcity in available EMS research is even greater for pediatric populations. Additionally, the ability to gather statistically significant data through sufficient sample sizes is difficult due to the relatively low number of pediatric EMS encounters across the country. The goal of this project is to develop an EMS Research Node Center (E-RNC) that will work in cooperation with the Pediatric Emergency Care Applied Research Network (PECARN)* to conduct innovative and significant prehospital pediatric research. Objectives include to: (1) establish the infrastructure for an E-RNC called CHaMP (Charlotte, Houston, and Milwaukee Prehospital) which will include three EMS Affiliates (EMSA); (2) contribute to the science of prehospital pediatric care through the submission of specific research concepts to PECARN; (3) complete a pilot project within the project period that demonstrates the ability of the EMSAs to collect data; and (4) obtain funding for a specific large-scale project.

** PECARN serves approximately 1.2 million children annually and consists of 18 emergency departments across the country and a central data coordinating center. The EMSC Program funds PECARN’s infrastructure. Research investigators secure outside funding to complete research initiatives.*

For more information about Targeted Issue grants or the EMSC Program in general, contact the EMSC National Resource Center (NRC) at:

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