



Health Resources and Services Administration's Emergency Medical Services for Children (HRSA/EMSC) Targeted Issue Grants, 2010

Targeted Issue (TI) grants address specific needs or concerns of national significance in pediatric emergency care. Projects often result in a new product or resource or demonstrate the effectiveness of a model system component or service of value to the nation. Objectives for all funded projects must meet a demonstrated need. Methodologies and strategies for achievement of objectives must be realistic, appropriate, and scientifically sound. Projects must also contain an evaluation plan that includes measurable outcomes and clearly defined time frames for project attainment.

TI grant awards range up to \$300,000 per year for up to three years. The newly funded TI grants are:

CALIFORNIA – UC Davis School of Medicine. *Utility of Abdominal Ultrasound during Emergency Department Evaluation of Children with Blunt Trauma (Primary Investigator: James Holmes, MD, MPH).* Intra-abdominal injury is a frequent problem for injured children. While abdominal computed tomography (CT) scanning remains the preferred method of diagnosing intra-abdominal injuries, potential side effects are documented. *Project Goal:* To conduct a randomized control trial studying the initial evaluation strategy with use of abdominal ultrasound versus without the use of abdominal ultrasound of children with blunt abdominal injury. *Objectives:* To compare the following variables in those that randomize to abdominal ultrasound versus those that do not: (1) rate of abdominal CT scanning; (2) time to emergency department disposition; (3) the rate of delayed/missed diagnosis of intra-abdominal injury; and (4) cost.

CONNECTICUT – Yale University. *Small Victims, Big Challenges: Refining Pediatric Disaster Triage Algorithms and Education in the Prehospital Setting (Primary Investigator: Mark Cicero, MD).* During disasters paramedics are likely to triage children and, despite existing triage algorithms, some prehospital providers are more likely to use clinical judgment, than rely on a triage algorithm. *Project Goal:* To develop a pediatric disaster triage curriculum for prehospital professionals while comparing the efficacy of existing pediatric disaster triage strategies. *Objectives:* To: (1) develop and validate pediatric disaster training (PDT) learner evaluation tools; (2) measure triage and simulated patient outcomes of Smart, JumpStart, and clinical judgment PDT strategies; and (3) measure efficacy of curriculum in conveying sustainable PDT knowledge and skills over time.

DISTRICT OF COLUMBIA – Children's National Medical Center. *Reducing Errors in Pediatric Trauma Resuscitation Using a Checklist (Primary Investigator: Randall Burd, MD, PhD).* Trauma is the leading cause of

death and acquired disability in children and adolescents. Pediatric trauma resuscitation is an intense event in most emergency departments, and prone to possible errors. *Project Goal:* To design and evaluate a checklist that reduces errors that occur during pediatric trauma resuscitation and to disseminate to providers who care for injured children. *Objectives:* To: (1) design a checklist that reduces errors in simulated pediatric trauma resuscitations; (2) evaluate the impact of the checklist on error occurrence in actual pediatric trauma resuscitations; and (3) develop and disseminate a toolkit (Trauma-Check!) for implementing checklists in pediatric trauma resuscitation at other hospitals.

ILLINOIS – Loyola University, School of Medicine. *Pediatric Facility Recognition/Categorization: Models of Best Practice, Implementation and Evaluation (Primary Co-investigators: Mark Cichon, MD, and Evelyn Lyons, RN, MPH).* In 2005, the EMSC Program developed performance measures that focused on increasing the percent of hospitals recognized through statewide, territorial, or regional standardized systems that are able to stabilize and/or manage pediatric medical and traumatic emergencies. *Project Goal:* To develop processes and resources to assist states in implementing and assessing the effectiveness of facility recognition programs, i.e. pediatric trauma and pediatric medical recognition. *Objectives:* To: (1) conduct a comparative analysis of facility recognition/categorization criteria, related guidelines, and other hospital designation models, i.e. trauma, perinatal; (2) develop a facility recognition categorization implementation toolkit; (3) assess the feasibility of various outcomes and process measures for recognition programs; and (4) apply the measures to evaluate the effectiveness of existing recognition programs.

MASSACHUSETTS – Brigham & Women's Hospital/Harvard Medical School.* *ExSTRA: Evidence-Based Screening for Siblings and Contacts of Abused Children (Primary Investigator: Daniel Lindberg, MD).* Research shows that each year nearly as many children die in the U.S. as a result of abuse and neglect as are killed by road traffic collisions. Increased screenings can detect abuse earlier, however, experts disagree on which type of screening would be most useful to detect abuse in siblings or contacts of abused children. *Project Goal:* To determine the utility of a routine screening protocol for contacts of abused children. *Objectives:* To: (1) determine the rate of abusive injuries in siblings and contacts of abused children; (2) identify factors predicting the presence of abusive injuries; and (3) establish a mature, robust research network capable of completing future, priority research in children with concern for physical abuse.

MICHIGAN – University of Michigan, Ann Arbor.* Progesterone for Traumatic Brain Injury in Children: Planning a Safety and Efficacy Trial (*Primary Investigator: Rachel Stanley, MD*). Traumatic brain injury (TBI) is the leading cause of morbidity from trauma and one of the leading causes of death in children. Currently, no effective pediatric treatment exists. Previous studies have shown that the use of progesterone is not only safe in adults with TBI, but offers substantial neuroprotective effects. *Project Goal:* To develop a plan for a future multi-site study of the safety and efficacy of progesterone use in the treatment of children with TBI. *Objectives:* To: (1) coordinate and organize an executive planning committee that will prepare a protocol for a safe and efficacy trial of progesterone in the treatment of children with TBI; (2) to pilot inclusion/exclusion criteria in a prospective feasibility study in participating centers; and (3) to conduct a meeting of emergency department (ED) and neurocritical care investigators from participating sites to standardize care and to identify consensus elements of the protocol.

NORTH CAROLINA – University of North Carolina at Chapel Hill. EMS and Pediatric Trauma: A North Carolina Population-based Performance Improvement Intervention and Evaluation Using Multiple-linked Healthcare Databases (*Primary Investigator: Janice Brice, MD*). Seriously injured pediatric patients are rare and pediatric specialty care is not available to adequately care for all pediatric trauma locally resulting in a frequent need for interfacility EMS transport to a higher level of care. EMS professionals have limited opportunity to exercise their assessment and patient care skills making knowledge and skill retention a concern. *Project Goal:* To evaluate the effectiveness and functionality of the North Carolina trauma system in the delivery of pediatric emergency care. *Objectives:* To: (1) identify and describe health care disparities of injured children in North Carolina's EMS via utilization of an EMS Outcomes Data System; (2) develop, implement, and evaluate a web-based EMS performance improvement (PI) and education tool that focuses on appropriate triage and destination decisions for children needing emergency care; (3) evaluate and describe pediatric emergency care disparity changes one year post the educational intervention; and (4) disseminate nationally the education and PI tools.

North Carolina – Wake Forest University. Evaluation of a Pediatric Emergency Care Recognition Program on Care of Injured Children (*Primary Investigator: J. Wayne Meredith, MD*). Injuries are the leading cause of death and disability for children with most children being cared for in general emergency departments and non-pediatric trauma centers. While there is support for categorization of emergency departments according to their capabilities to care for ill or injured children, states have been slow to adopt that recommendation for various reasons. *Project Goal:* To analyze the care injured children receive in states with/without a Pediatric Emergency Care Facility Recognition Program (PECFR). *Objectives:* To: (1) conduct structured data collection to compare pre- and post-PECFR categorization in addition to trauma center designation on the care of injured children; and (2) describe PECFR and trauma systems overlap, convergence, and/or parallel co-existence.

TEXAS – Texas Children's Hospital. Integrating Evidence-Based Pediatric Prehospital Protocols into Practice (*Primary Investigator: Manish Shah, MD*). Both the Institute of Medicine and EMS research agendas identify a need for the development, implementation, and validation of evidence-based pediatric prehospital protocols. *Project Goals:* To establish and evaluate a process for the development of evidence-based pediatric prehospital protocols. *Objectives:* To: (1) develop evidence-based pediatric prehospital protocols; (2) implement a pediatric prehospital protocol in targeted EMS systems; (3) to evaluate the impact of a pediatric prehospital protocol by tracking structural process and outcomes measures after implementation in multiple EMS systems; and (4) to define an implementation model for the integration of evidence-based pediatric protocols into state EMS systems where mandated protocols are not required.

**Note that the project period for these grants are two years (09/01/2010 to 8/31/2012).*

For more information about Targeted Issue grants or the EMSC Program in general, contact the EMSC National Resource Center's (NRC) Diana Fendya, MSN(R), RN, Targeted Issue outreach coordinator, at (202) 476-6891; dfendya@cnmc.org or visit the NRC website at <http://www.childrensnational.org/emsc>.

For fiscal year 2010, the following TI grants received continuation funding:

CONNECTICUT – Connecticut Children's Medical Center. Efficacy of Driving Simulator Training for Novice Teen Drivers (*Principal Investigator: Brendan Campbell, MD, MPH*). To determine whether driving simulator training implemented in public high schools affects police reported motor vehicle crash rates and motor vehicle-related infractions and offenses for 16- and 17- year old novice drivers.

MASSACHUSETTS – Children's Hospital Boston Center for Biopreparedness. REUNITE: A Novel Imaging System for Children Separated During Disaster (*Principal Investigator: Sarita Chung, MD*). To develop and evaluate REUNITE, which will (1) provide digital imaging, indexing, archiving, and retrieval for pediatric survivors of disasters; and (2) emulate features for digital reconstruction of children with facial trauma.

MICHIGAN – Kalamazoo Center for Medical Studies at Michigan State University. Michigan Pediatric Errors and Excellence Discovery with Simulation (*Principal Investigator: Richard Lammers, MD*). To (1) develop and conduct a series of comprehensive, realistic pediatric clinical simulations for use by EMS personnel in a model mobile simulation laboratory for the purpose of discovering performance errors and identifying exemplary individual and team performance using root cause analysis methodology.

WASHINGTON, DC – Children's Research Institute at Children's National Medical Center. Family Presence During Pediatric Trauma Team Activation: Measuring the Effects of a Multidisciplinary Approach to Patient-Family-Centered Care (*Principal Investigator: Karen O'Connell, MD*). To study the effects of family presence on the timeliness and effectiveness of care during pediatric trauma evaluation/resuscitation, as well as determining families' and providers' attitudes and beliefs after experiencing family presence.