

# FACT SHEET

## Research on Child and Adolescent Health: New Starts Fiscal Year 2011

The mission of AHRQ is to improve the quality, safety, efficiency, and effectiveness of health care by:

- Using evidence to improve health care.
- Improving health care outcomes through research.
- Transforming research into practice.

The mission of the Agency for Healthcare Research and Quality is to improve the safety, quality, efficiency, and effectiveness of health care for all Americans. Children are one of AHRQ's designated priority populations. To help achieve the Agency's mission for children, AHRQ supports extramural research grants and contracts, research training, conference grants, and intramural activities.

This fact sheet provides information on extramural activities related to children's health that were initiated during fiscal year 2011. Each summary includes the title of the project, the name and, where applicable, the affiliation of the principal investigator, AHRQ project number, project dates, and a brief summary.

Please see the last page of this fact sheet to learn how you can get more information about AHRQ's activities related to children's health and health care.

### Research Grants and Cooperative Agreements

#### Research Grants

**Acceleration to Expertise: Simulation as a Tool to Improve the Recognition of Sepsis.** Gary L. Geis, MD, Principal Investigator; Children's Hospital Medical Center, Cincinnati, OH. AHRQ grant HS20455; project period April 1, 2011-March 31, 2014. Sepsis is associated with significant morbidity and mortality in both children and adults, and the incidence of sepsis appears to be increasing. Outcomes from sepsis in critically ill children and adults can be improved with early recognition, yet subtle signs and nonspecific symptoms mean that sepsis is a diagnostic challenge for novice clinicians. The central hypothesis for this project is that simulation-based training can accelerate the development of expertise needed by novice clinicians to quickly and accurately recognize sepsis. To test this hypothesis, the researchers will (1) use cognitive task



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analysis to identify the behaviors that distinguish expert clinicians in the recognition of sepsis at the bedside and (2) use that information to develop and implement simulation-based training that will provide novice clinicians with the tools they need to rapidly attain clinical expertise.

**Electronic Surveillance for Wound Infections After Ambulatory Pediatric Surgery.** Susan E. Coffin, MD, MPH, Principal Investigator; Children's Hospital of Philadelphia, Philadelphia, PA. AHRQ grant HS20921; project period September 30, 2011-September 29, 2016. Surgical site infection (SSI) is the second most commonly reported health care-associated infection in children, as well as adults. Little is known about the epidemiology of SSIs that occur following surgery, and there are few data to support the prevailing assumption that outpatient surgery is associated with a low risk of SSI. The electronic health record (EHR) holds promise as a tool for efficient and targeted SSI surveillance. The goals of this project are to (1) define the incidence of and risk factors for SSI after ambulatory pediatric surgery, (2) determine the data elements to be included in an EHR to efficiently identify SSIs in pediatric postsurgical patients, and (3) create and validate an EHR-embedded workstation that will facilitate efficient and effective SSI surveillance following ambulatory pediatric surgery.

**Improving Adolescent Primary Care Through an Interactive Behavioral Health Model.** Elizabeth Ozer, PhD, Principal Investigator; University of California at San Francisco, San Francisco, CA. AHRQ grant HS20997; project period September 1, 2011-August 31, 2013. Health information

technology with clinical decision support has tremendous potential to improve health care quality and subsequent behavioral health outcomes for adolescents. The goals of this project are to (1) develop a computerized behavioral/emotional health module that would be acceptable to diverse teenagers (aged 12-18 years) and the clinicians who care for them in primary care settings; (2) pilot test the module in adolescent primary care, assessing clinician, adolescent, and system outcomes; (3) test the effects of the module on the screening of adolescents by primary care providers for risky health behaviors and emotional distress; (4) assess whether use of the module is related to changes in the adolescents' knowledge and health; and (5) assess the new system's impact on practice operations.

**Improving Pediatric Resuscitation: A Simulation Program for the Community Emergency Department.** Linda L. Brown, MD, Principal Investigator; Rhode Island Hospital, Providence, RI. AHRQ grant HS20286; project period April 1, 2011-March 31, 2014. Pediatric emergencies with critical consequences are an infrequent occurrence in community emergency departments (CEDs), and as with any rare, high-acuity event, there is an elevated risk of error, failure in medical decisionmaking, and other adverse events. Medical teams in CEDs seldom get an opportunity to practice pediatric resuscitation, yet they are expected and required to perform at the highest level when a severely ill or injured child comes through their doors. The focus of this project is to assess the ability of training using high-fidelity, in situ medical simulation to improve the resuscitation of pediatric patients in CEDs. The researchers will (1) use in

situ medical simulation and expert debriefing to conduct a statewide needs analysis of CEDs during pediatric resuscitations; (2) identify latent safety hazards and observable errors encountered during the care of simulated ill and injured children in CEDs; (3) implement a statewide, simulation-enhanced evidence-based and data-driven educational intervention; and (4) evaluate the effectiveness and sustainability of the training through ongoing assessments and review of actual patient care.

### **Improving Post-Hospital Transitions and Ambulatory Care for Children with Asthma.**

Flory L. Nkoy, MD, MS, MPH, Principal Investigator; University of Utah, Salt Lake City, UT. AHRQ grant HS18678; project period April 1, 2011-March 31, 2014. Children hospitalized for asthma are at increased risk for subsequent emergency department visits and hospital admissions. This project will examine the use of health information technology (health IT) applications to improve post-hospital care transitions and doctor-patient communication for children with asthma. The researchers will develop and implement two health IT applications to change the way asthma care is delivered, from an approach centered on acute care and intermittent physician visits, to one in which health IT is used to enable continuous communication between patients and care providers for asthma care decisionmaking. The goal of the project is to ensure effective care transitions and continuity of care for children with asthma after hospital discharge and to reduce readmissions.

### **Symptom Monitoring and Reporting System for Pediatric Chronic Illness.**

Jin-Shei Lai, PhD, Principal Investigator; Northwestern University at Chicago, Chicago, IL. AHRQ grant HS19071; project period March 1, 2011-February 28, 2013. Efforts to manage symptoms experienced by children with chronic illness have not kept pace with advances in treatment, and there are various barriers to timely symptom management that exist at the patient, clinician, and system levels. This project will examine the use of a patient-oriented, technology-based, symptom monitoring system – the Symptom Monitoring and Reporting System in Pediatric Populations (SyMon-Peds) – to focus on a single symptom, fatigue in children undergoing treatment for cancer. The study will involve 100 cancer patients aged 7-17 and one parent each who will complete an 8-week intervention to assess the feasibility of implementing the SyMon-Peds system in pediatric oncology clinics. The study will evaluate its acceptability to parents of children with cancer and the children's clinicians, as well as parents' satisfaction with the system and its efficacy in managing fatigue. The researchers also will measure fatigue-related distress, perceived barriers to fatigue management, and health protective behaviors to identify possible mediators of the effectiveness of this novel health IT intervention.

### **Utilizing Health Information Technology to Improve Health Care Quality: Implementation of a Computerized Cognitive Behavior Therapy Protocol for Childhood Anxiety.**

Eric A. Storch, PhD, MS, Principal Investigator; University of South Florida, Tampa, FL. AHRQ grant HS18665; project period September 30,

2011-September 29, 2014. Childhood anxiety disorders are quite common and associated with significant psychosocial impairment and distress. Cognitive behavioral therapy (CBT) is a first-line treatment for anxiety disorders in youth, but dissemination of CBT to community settings has been very limited. This project involves a two-phase trial to examine the feasibility and efficacy of implementing a patient-centered intervention for childhood anxiety disorders in three South Florida community mental health centers. In the first phase, the researchers will conduct an open trial of computerized CBT involving 18 youth ages 7 to 13 years to examine feasibility issues. In the second phase, the researchers will recruit 110 youth to measure the efficacy of the protocol in front-line settings. Primary outcome measures will include change in anxiety symptom severity, response rates, and remission rates.

### **Cooperative Agreements**

#### **AHRQ-CMS Pediatric Quality Measures Program Centers of Excellence**

In early 2009, Congress passed the Children's Health Insurance Program Reauthorization Act (CHIPRA, Public Law 111-3), which presents an unprecedented opportunity to measure and improve health care quality and outcomes for the Nation's children, including the almost 40 million children enrolled in Medicaid and/or the Children's Health Insurance Program (CHIP). Since the law was passed, AHRQ and the Centers for Medicare & Medicaid Services (CMS) have been working together to implement selected provisions of the legislation related to children's health care quality. The law called first for the identification of an initial set of core

measures to be used to assess voluntarily the state of children's health care quality across and within State Medicaid and CHIP programs and then for establishment of the CHIPRA Pediatric Quality Measures Program (PQMP) to improve and strengthen the initial core set of measures and develop new measures as needed.

In fiscal year 2011, with CHIPRA funds from CMS, AHRQ funded seven cooperative agreement grants to establish and support the CHIPRA PQMP Centers of Excellence (COEs). Each of these programs comprises multiple entities with diverse talents and expertise that can be applied to investigate and find solutions to some of the most pressing issues in child health quality measurement. In addition, AHRQ and CMS awarded a contract (290-2011-00004-C) to RTI International, Research Triangle Park, NC, for the CHIPRA Coordinating and Technical Assistance Center to assist AHRQ, CMS, and the COEs in developing and improving measures of children's health care quality. For more information on the CHIPRA work underway, visit [www.ahrq.gov/CHIPRA](http://www.ahrq.gov/CHIPRA).

**AHRQ-CMS PQMP Center of Excellence on Quality of Care Measures for Children with Complex Needs.** Rita Mangione-Smith, MD, MPH, Principal Investigator; Seattle Children's Hospital, Seattle, WA. AHRQ grant HS20506; project period March 1, 2011-February 28, 2015. This COE is developing tools to identify children with special health care needs and to identify social complexity for care coordination and measures of care coordination in the context of the medical home, transitions between care settings, mental health care quality in the emergency department and hospital,

and avoidable mental health admissions to emergency departments and hospitals.

**AHRQ-CMS PQMP Children's Hospital Boston Center of Excellence for Quality Measurement.** Mark A. Schuster, MD, PhD, Principal Investigator; Children's Hospital Boston, Boston, MA. AHRQ grant HS20513; project period March 1, 2011-February 28, 2015. This COE is focusing on development of a measure of child inpatient experiences of care, hospital readmission measures, and measures of the quality of transitions between child-focused and adult-focused care settings and providers; access to disability support services; and the development of a global tool to measure patient safety across pediatric care settings.

**AHRQ-CMS PQMP Mount Sinai Collaboration for Advancing Pediatric Quality Measures.** Lawrence C. Kleinman, MD, MPH, Principal Investigator; Mount Sinai School of Medicine, New York, NY. AHRQ grant HS20518; project period March 1, 2011-February 28, 2015. This COE is working on measures of asthma emergency department visits, availability of high-risk obstetric care, temperature on admission to the neonatal intensive care unit, and general medical reconciliation, as well as medical reconciliation for patients receiving mental health care. Another focus is measures of the quality of followup of pediatric patients after a mental health hospitalization.

**AHRQ-CMS PQMP National Collaborative for Innovation in Quality Measurement.** Sarah H. Scholle, MPH, DrPH, Principal Investigator; National Committee for Quality Assurance, Washington, DC. AHRQ grant HS20503; project period

March 1, 2011-February 28, 2015. Topics of measure development at this COE include content of well-child and well-adolescent care, depression screening and followup for adolescents, and a youth-reported survey. The COE is also working on measures of screening for alcohol and substance use; diagnosis, treatment, and followup for alcohol and substance use; measures for children in child welfare, including care coordination for socially complex children without chronic conditions; and quality of psychotropic use, including antipsychotic use.

**AHRQ-CMS PQMP Pediatric Measurement Center of Excellence.** Ramesh C. Sachdeva, MD, PhD, MBA, Principal Investigator; Medical College of Wisconsin, Milwaukee, WI. AHRQ grant HS20498; project period March 1, 2011-February 28, 2015. This COE is working on measures of the quality of developmental screening and followup. Other topics underway include a measure to assess the continuum of care and measures relevant to the quality of pediatric intensive care, dental treatment, the content of prenatal care and ADHD diagnosis and followup.

**AHRQ-CMS PQMP Pediatric Quality Measurement Center and Testing Laboratory.** Jeffrey H. Silber, MD, PhD, Principal Investigator; Children's Hospital of Philadelphia, Philadelphia, PA. AHRQ grant HS20508; project period March 1, 2011-February 28, 2015. This COE is currently working on a measure of the quality of care for otitis media with effusion, specifically a measure to assess avoidance of systematic antimicrobial use. Other topics address patient-reported outcomes, including functional assessment; neonatal intensive care unit readmissions, outcomes, and cost; and episode of care/quality-cost measures.

### **AHRQ-CMS PQMP Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC).**

Gary L. Freed, MD, MPH, Principal Investigator; University of Michigan at Ann Arbor, Ann Arbor, MI. AHRQ grant HS20516; project period March 1, 2011-February 28, 2015. This COE is focusing on quality of care measures for sickle cell disease care, body mass index followup and treatment, seizures and headaches (imaging), respiratory conditions, septicemia, and the availability of health care services other than high-risk obstetrics.

### **Dissertation Grants**

#### **The Effect of Risk and Side Effect Communication on Asthma Medication Adherence.**

Christopher M. Gillette, Principal Investigator; University of North Carolina at Chapel Hill, Chapel Hill, NC. AHRQ grant HS20534; project period July 1, 2011-April 30, 2012. Asthma is the most common chronic disease affecting U.S. children, and for those with persistent symptoms, optimal symptom control depends on children taking daily asthma control medication. However, children's adherence to asthma control medication is consistently reported as poor. This doctoral candidate will perform a secondary data analysis of survey and clinic visit audiotapes that were collected in five rural general pediatric practices from 2006 through 2009, including 35 pediatricians and 296 patients with persistent asthma symptoms. The goal is to determine how general pediatricians, who treat most children for their persistent asthma symptoms, communicate about the risks and side effects of asthma control medications. The ultimate goal is to improve doctor-

patient-caregiver communication about the benefits, risks, and side effects associated with asthma control medications and thereby improve medication adherence.

#### **Exploring the Adaptive and Interpretive Dynamics of Implementation in Infection Prevention.**

Julia E. Szymczak, Principal Investigator; University of Pennsylvania, Philadelphia, PA. AHRQ grant HS20760; project period July 15, 2011-October 14, 2012. The gap between what should be done to prevent health care-associated infections (HAIs) and what is actually done is a critical barrier to improvement in infection prevention. Little is known about the dynamics of implementation in infection prevention or the challenges faced by health care institutions in getting their workers to consistently follow measures designed to prevent HAIs. This doctoral candidate will explore the experiences of one hospital as it implements an organization-wide infection prevention initiative. The goal is to identify barriers and facilitators to successful organizational change.

#### **Implementation of Electronic Medical Records for Documentation: Implications for Efficiency and Safety of Work Flow in Labor and Delivery.**

Kathleen Pine, Principal Investigator; University of California at Irvine, Irvine, CA. AHRQ grant HS20753; project period July 6, 2011-September 30, 2012. Electronic medical record (EMR) documentation systems are expected to increase the quality, safety, effectiveness, and efficiency of health care delivery through improvements in legibility and organization of patient information, communication among providers, and creation of a centralized registry of patient information that can be built

and accessed by multiple providers and clinics. Currently, however, these potential benefits remain largely unrealized. This doctoral candidate will examine the impact of EMR implementation on the work processes and information flow in an inpatient labor and delivery unit. Findings from this research will result in a set of guidelines and considerations for effective EMR implementation processes that help hospitals and providers to reengineer current work systems and documentation routines around the new system.

#### **Nurses' Information Needs While Caring for Hospitalized Children.**

Tiffany Kelley, Principal Investigator; Duke University, Durham, NC. AHRQ grant HS21075; project period September 1, 2011-May 31, 2012. There is scant empirical information to describe how, why, and for what purpose nurses use paper-based nursing documentation to collect and communicate information about patients in addition to other verbal, written, and electronic forms of communication. Such information is needed in order to effectively evaluate the use of electronic nursing information on improvements in the safety and quality of care provided to hospitalized patients. This doctoral candidate will use a descriptive mixed-methods multiple case study design to investigate two cases, each of which represents an inpatient pediatric unit at Duke University Hospital, where a switch was made from paper-based nursing documentation to electronic nursing documentation in April 2011. Findings from this study will be used to create standards for nursing documentation, enhance and refine the design of electronic nursing

documentation systems, and identify hardware devices that integrate with nursing workflow to maximize the collection and communication of patient information in hospital settings.

### **A Qualitative Description of a Pilot Project to Improve Access to Care in one Dental Health Professional**

**Shortage Area.** Sarah E. Raskin, Principal Investigator; University of Arizona, Tucson, AZ. AHRQ grant HS19117; project period July 6, 2011-September 30, 2012. Residents of rural central Appalachia bear a disproportionate burden of oral disease. Reports document adult loss of most or all teeth, and dental decay in children in the region is at seven times the rate of the rest of the Nation. In February 2009, a pilot project was begun allowing public health dental hygienists to provide basic services in the region. This doctoral candidate will evaluate the project and document the experiences of adult patients, parents of child patients, dental hygienists, and the dentists who supervised them remotely, as well as the experiences of patients and providers who chose not to participate. A set of recommendations will be developed for how subsequent iterations of the project could be improved to deliver better oral care to one AHRQ priority population, low-income rural residents.

## **Conference Grants**

### **Developing a Research Agenda for an Adolescent-Centered Model of**

**Primary Care.** Harriette Fox, MSS, Principal Investigator; National Alliance to Advance Adolescent Health, Washington, DC. AHRQ grant HS19251; project period September 1, 2011-August 31, 2012. This project provides support for an invitational conference to foster development of a research agenda focused on design and

implementation of a patient-centered primary care model that addresses the unique needs of adolescents for behavioral, reproductive, and physical health care, as well as early intervention and preventive health care services. The conference agenda will focus on three primary topics: (1) enhancing clinical preventive services to reduce risk and identify conditions early; (2) integrating physical, behavioral, and reproductive health care; and (3) increasing outreach, engagement, and self-care management for adolescents.

### **Pediatric Quality Improvement Methods, Research, and Evaluation**

**Conference.** David A. Link, MD, Principal Investigator; Academic Pediatric Association, McLean, VA. AHRQ grant HS20567; project period March 1, 2011-February 29, 2012. This project provided support for a 1-day conference on health services research design and methodology for pediatric quality improvement held in April 2011 in conjunction with the Pediatric Academic Societies annual meeting. Despite the recognized need for quality improvement in pediatric care, there are gaps in the application of rigorous research methodologies for understanding whether current innovations are truly effective in improving care. The purpose of this meeting was to disseminate and advance state-of-the-art research methods for health care quality improvement research focused on children and adolescents.

### **Society for Pediatric Sedation Consensus Meeting: Defining Quality in Pediatric Sedation.**

J. Michael Connors, MD, Principal Investigator; Society for Pediatric Sedation, Richmond, VA. AHRQ grant HS20729; project period September 30, 2011-September 29, 2012. This project

provides support for an expert meeting of multidisciplinary sedation providers to begin the process of defining quality as it relates to the field of pediatric sedation. The objective of the meeting is to produce for dissemination: (1) definitions of the Institute of Medicine's six aims of quality as they relate to pediatric sedation; (2) recommendations on how quality can be measured within the field of pediatric sedation; (3) an assessment of established protocols and practices related to pediatric sedation needed to establish quality benchmarks; and (4) recommended research and educational priorities for the field to advance the work in defining and measuring quality within pediatric sedation.

## **AHRQ's Effective Health Care Program**

Through its Effective Health Care program, AHRQ funds researchers through research centers and academic organizations to work together with the Agency to produce effectiveness and comparative effectiveness research for clinicians, consumers, and policymakers.

Comparative effectiveness research is designed to inform health care decisions by providing evidence on the effectiveness, benefits, and harms of different treatment options. The evidence is synthesized from research studies that compare drugs, medical devices, tests, surgeries, or ways to deliver health care. More information about AHRQ's Effective Health Care Program is available at [www.effectivehealthcare.ahrq.gov](http://www.effectivehealthcare.ahrq.gov).

The following initiatives related to child health were started by the Effective Health Care Program in FY 2011.

**Interventions Addressing Child Exposure to Trauma: Part 1, Child Maltreatment; and Part 2, Trauma Other than Child Maltreatment and Violence.** Part 1 will focus on the comparative effectiveness of interventions that address child exposure to familial trauma in the form of maltreatment, including post-traumatic stress disorder as an outcome of interest. Part 2 will focus on the comparative effectiveness of interventions—including pharmacotherapy and psychotherapy, as well as complementary and behavioral therapies and systems interventions—that address child exposure to traumatic experiences other than maltreatment, including terrorism, war, refugee status, natural disasters, fire, motor vehicle and other accidents, medical trauma, community or school violence, parent separation or divorce, dating violence, and death of a loved one.

**Future Research Needs for First- and Second-Generation Antipsychotics for Children and Young Adults.** RTI International-University of North Carolina Evidence-based Practice Center, AHRQ Contract 290-2007-10056. The purpose of this project was to identify and prioritize the evidence gaps and future research needs regarding the benefits and harms of first- and second-generation antipsychotics for the treatment of various psychiatric and behavioral conditions in individuals 24 years of age or younger. A draft of the report was published February 20, 2012, and comments were accepted until March 19, 2012.

**Comparative Effectiveness of Treatments for Otitis Media with Effusion.** This review of treatment strategies for otitis media with effusion (OME) will address the following unresolved questions: Who benefits

from treatment? Who benefits from watchful waiting and who does not? What are the harms associated with the various OME treatments and strategies? Do various surgical techniques differ in their ability to treat OME?

**Comparative Effectiveness of Childhood Obesity Prevention Programs.** This review will compare the effectiveness of obesity intervention programs for children and adolescents conducted in the United States and other developed countries.

**Interventions for Adolescents and Young Adults with Autism Spectrum Disorders.** This review will examine interventions, outcomes, and access to care for adolescents and young adults aged 13 to 30 with an autism spectrum disorder, which includes autistic disorder, Asperger syndrome, and pervasive developmental disorder—not otherwise specified.

**Future Research Needs – Interventions for Adolescents and Young Adults with Autism Spectrum Disorders.** The purpose of this project will be to identify and prioritize the evidence gaps and future research needs for treatment of adolescents and young adults with autism spectrum disorders.

## Interagency Agreement

**Centers for Disease Control and Prevention.** Interagency Agreement between AHRQ and CDC's National Center for Health Statistics. Interagency Agreement 11-HS09-4006-CPCB. This IAA provides funds to support the work of the Federal Interagency Forum on Child and Family Statistics. The purpose of the Forum is to foster collaboration among Federal agencies that produce or use statistical data on children and families. The Forum produces the annual report *America's Children: Key*

*National Indicators of Well-Being*, available at [www.childstats.gov](http://www.childstats.gov). AHRQ is represented on the Forum's Executive Committee.

## For More Information

AHRQ's World Wide Web site (<http://www.ahrq.gov>) provides information on the Agency's children's health services research agenda and funding opportunities. In addition, AHRQ also offers a child and adolescent health email update service to which users may subscribe (go to <https://subscriptions.ahrq.gov> and follow the prompts).

Go to <http://www.ahrq.gov/research/childr11.htm> to download additional copies of this fact sheet.

Further details on AHRQ's programs and priorities in child health services research are available from:

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AHRQ Pub. No. 12-P007-EF

May 2012