FACT SHEET

Patient Safety Challenge Grants

Agency for Healthcare Research and Quality

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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 Agency for Healthcare Research and Quality (AHRQ) has long been a leader in the support of research into patient safety and medical errors. Studies indicate annual hospital fatalities due to medical errors are the eighth leading cause of death in the United States—greater than the death toll from motor vehicle accidents, breast cancer, or AIDS. The Agency funded much of the seminal research in the field undertaken before publication of the Institute of Medicine's 1999 report, *To Err is Human: Building a Safer Health System*.

During the past 3 years, AHRQ has invested $165 million in patient safety research. The Agency currently manages a patient safety research portfolio of more than 100 projects, driven by user needs. Most of these projects include a practical risk assessment and threat identification component.

In fiscal year 2004, AHRQ awarded nearly $4 million in Patient Safety Challenge Grants to support 13 new practice implementation projects. The grants are the first of their kind, and represent a challenge on the part of the Agency to the health care community and the ability of organizations to develop new solutions to clinical scenarios in which medical errors could cause grievous harm or loss of life. The tools and procedures emerging from these projects advance the translation of research into clinical practice and support the Agency's commitment to a medical culture grounded in safety and quality.

This is also the first group of AHRQ patient safety grants to employ a shared-cost financing component. AHRQ will fund up to 50 percent of each project and the challenge grant recipients, in turn, are required to secure additional funding for the balance of their project costs. Shared-cost funding enables AHRQ to support a greater number of worthy research projects, while at the same time giving investigators a greater stake in the outcome of their work.

In some cases, however, the recipients have secured enough additional support to cover most of the cost of their work. A best-practice implementation project awarded to Johns Hopkins University in Baltimore, MD, is slated to receive up to $10 million in incentives from Blue Cross and Blue Shield of Michigan, as well as funding from participating Michigan hospital teams

U.S. Department of Health and Human Services
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and the Michigan Health & Hospital Association.

Six of the challenge grants involve strategies for assessing risks to those receiving medical treatment in a variety of health care settings. These projects are based on threat identification and evaluation methods developed originally for use in other industries with a low tolerance for error, such as aviation and nuclear power. The remaining seven grants focus on the process of introducing clinical practices proven by a body of evidence to eliminate or reduce known patient safety hazards.

The new research implementation projects are described below, divided into the two Patient Safety Challenge Grant categories.

Risk Assessment and Reduction Grants

Re-engineering the Hospital Discharge Process. This project will analyze the individual components of the hospital discharge process, and will measure the medical errors related to each component. The analysis then will be used to re-engineer the discharge process through development of computerized discharge tools that are linked to the hospital's information systems and designed to address latent and active mistakes that lead to rehospitalizations. Principal Investigator: Brian Jack, Boston University Medical Center; Grant No. HS14289.

Risk and Recovery in Complex Environments: Labor and Delivery. Researchers will collect and analyze data from field observations and hospital sources to better evaluate hospital system factors that contribute to variations in obstetric care and expose mother and child to risk of injury. These statistical findings will be used to develop treatment guidelines for improving patient safety by reducing the potential for adverse outcomes. Principal Investigator: Marlene B. Goldman, Beth Israel Deaconess Medical Center; Grant No. HS14376.

Risk Analysis of the Pediatric Chemotherapy Process. Investigators will identify the risks associated with each step of the chemotherapy medication process, and the potential for medication errors in the treatment of children. These findings will be employed in a clinical oncology setting, together with a computerized physician-order-entry system (CPOE), to devise and test strategies for decreasing the incidence of children's medication errors. Principal Investigator: Jerry Shenap, St. Jude Children's Research Hospital; Grant No. HS14295.

Risk Models to Improve Long-term Care Medication Safety. This project partners the Oregon Department of Human Services and a network of long-term residential care facilities to better assess factors that increase the risk of wrong-drug, wrong-dose, and wrong-patient medication errors. Separate risk assessment models will be developed for nursing homes and for assisted-living facilities. The models will take into consideration environmental and staffing factors specific to each setting. Principal Investigator: Grant K. Higginson, Oregon Department of Human Services; Grant No. HS14259.

PRA–Chicago Transplant Insight Study. Researchers will use probabilistic risk assessment (PRA) techniques to reduce the risks associated with organ donor/recipient mismatches

while determining how this tool may be employed in other patient safety scenarios. PRA modeling has proven useful in understanding other complex work systems, such as nuclear power plants, and in this instance will be supported by extensive observations of organ transplant work. Principal Investigator: Richard I. Cook, University of Chicago; Grant No. HS14261.

Real-time Assessment of Risk Factors in Medication Errors. Investigators will use a handheld electronic device to assess medication risk factors (wrong-patient, wrong-medication, or wrong-dosage) as they occur while sampling the types of medication errors involving different individuals in different hospital settings. Observations of recurring and preventable medication errors will become the foundation of institution-specific intervention plans. Principal Investigator: Timothy Dresselhaus, Veterans Medical Research Foundation; Grant No. HS14283.

Project Implementation Grants

Medication Error Reduction: Technologies and Human Factors. This project will evaluate the use of so-called smart intravenous (IV) pumps, with predefined medication dose limits and integrated bar code technology, as a defense against IV medication errors. The smart IV technology will be introduced in a large university hospital setting and user data gathered by a variety of means will be used to evaluate the technology in the larger context of patient safety. Principal Investigator: Pascale Carayon, University of Wisconsin-Madison; Grant No. HS14253.

The PeaceHealth Community-wide Electronic Shared Medication List and Care Plan. Project developers will design and implement an Internet-based master list, featuring physician-prescribed medications and treatment histories for each PeaceHealth patient in the region. Privacy-protected patient information will be available constantly online and through traditional means to the patients and their doctors, along with participating hospitals, nursing homes, and other health care providers. Principal Investigator: Ronald D. Stock, Sacred Heart Medical Center Foundation; Grant No. HS14315.

Improving Drug Safety: Linking Lab and Pharmacy Data. Researchers will conduct randomized, controlled trials of an electronic alert system that is designed to detect prescription drug errors at the point of distribution. Three distinct groups of patients and 19 pharmacies will participate in the trials, which are designed to evaluate the usefulness of a device that intercepts medication errors after a prescription has been written and before a pharmacist can dispense the drug. Principal Investigator: David J. Magid, Kaiser Foundation Research Institute; Grant No. HS14249.

Statewide Efforts to Improve Care in Intensive Care Units. Authorities with Johns Hopkins University will partner with the Michigan Health & Hospital Association in the development of an Intensive Care Unit (ICU) safety program designed to reduce patient mortality. The Comprehensive Unit-based Safety Program includes a revised safety reporting system, improved ICU communication and staffing, increased attention to bloodstream infection prevention, and improved care for patients on ventilators. Principal

Investigator: Peter J. Pronovost, Johns Hopkins University; Grant No. HS14246.

Toward A Safety Culture: Reducing Nosocomial Infections. This project seeks to create a safer hospital environment through the use of continual treatment monitoring, analyses, improved education, and greater infection awareness. New evidence-based safety practices will be put into place in the operating rooms and intensive care units at nine Cincinnati-area hospitals as a means to reduce medical errors and hospital-acquired infections. Principal Investigator: Marta L. Render, Cincinnati Foundation for Biomedical Research and Education; Grant No. HS14237.

Blood Product Transfusions and Safe Practices Implementation. Researchers will evaluate an organizational system that uses wireless scanner technology and barcodes to improve the tracking of blood samples collected for lab testing and blood bank products administered to patients. Nurses and technicians will scan barcodes attached to blood products and worn by patients. Mismatches will be noted immediately, thereby reducing transfusion-related safety risks. Principal Investigator: Loreen A. Herwaldt, University of Iowa; Grant No. HS14312.

Technology to Improve Medication Safety in Nursing Homes. This study will explore the potential impact of an emerging bedside technology, the One-Touch eMAR System, and the Quality Improvement Program for Missouri's Long-Term Care Facilities (QIPMO), in a nursing home setting. Baseline measurements of medication safety practices, error rates, and adverse drug events will be compared with those following the introduction of the eMAR safety technology and the QIPMO guidelines. Findings will be used to draft revised treatment protocols. Principal Investigator: Jill R. Scott, University of Missouri-Columbia; Grant No. HS14281.

For More Information:

For additional information on AHRQ projects aimed at improving patient safety and reducing medical errors, please visit the corresponding section of the Agency's Web site http://www.ahrq.gov/qual/errorsix.htm. or contact:

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