PROGRAM BRIEF

Patient Safety Tools: Improving Safety at the Point of Care

AHRQ's mission 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.

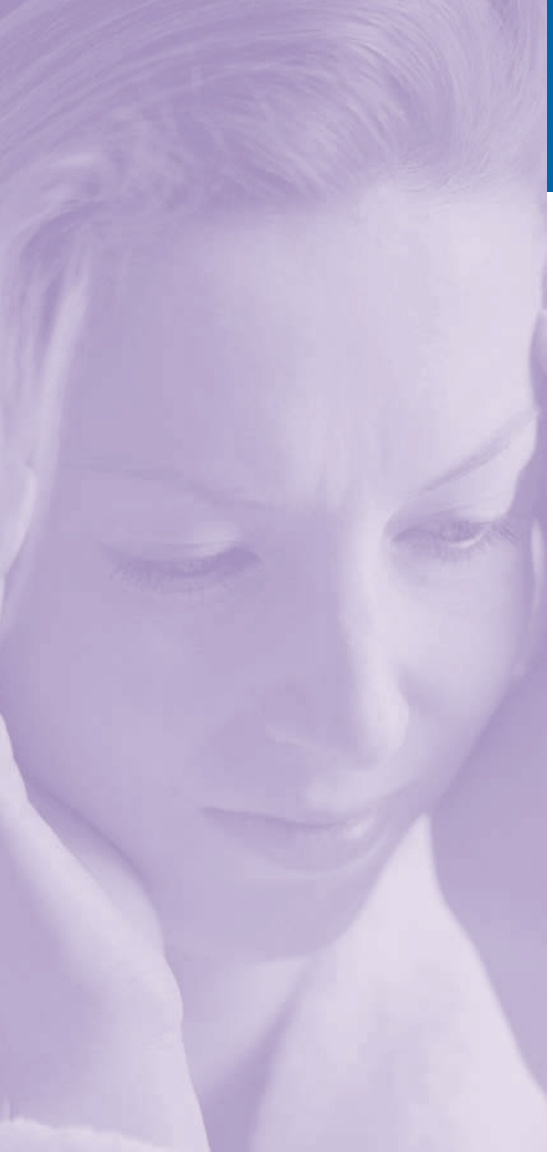
Introduction

In 2005, the Agency for Healthcare Research and Quality (AHRQ) awarded more than $9 million for 17 new grants under its Partnerships in Implementing Patient Safety (PIPS) grants program. These grants were in the form of 2-year cooperative agreements between the principal investigator and the Agency. The 17 PIPS projects focused on developing safe practice interventions that can be used in other settings of care and used by those who wish to adapt or adopt safe practice interventions to improve patient safety. These projects have produced a variety of interventions and "toolkits" that are designed to be implemented by multidisciplinary users in the field. They focus on documenting the impact of the safe practice intervention and the manner in which barriers to implementation and adoption were overcome.

The toolkits contain evidenced-based resources to assist:

- **Hospitals** by improving performance around some of the most common and serious patient safety problems faced by hospitals today.
- **Emergency departments** by improving patient flow, implementing a multidisciplinary simulation-based safety curriculum, and improving medication safety by implementing practice a formal emergency department pharmacist program.
- **Hospital care units** by employing applications of safe practices.
- **Outpatient facility settings** by addressing medication safety.
- **Consumer/patient care facilities** by educating consumers in medication safety and post-hospital care.

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov



The Projects

Improving Patient Flow in the Emergency Department
Principal Investigator: Twila Burdick, M.B.A.; Banner Health/Arizona State University, Phoenix, AZ
Grant No.: HS015921-01

Description: A patient flow process called "Door to Doc" improves the safety of care for patients in the emergency department by reducing the time patients wait to be seen by a physician. The toolkit contains the necessary resources for implementing operational changes, including the "Door to Doc" split flow process, interactive spreadsheets that use queuing to identify needed resources for the patient flow, multidisciplinary training aids and methods, and a plan designed for managing implementation and tools aimed at project management.

Toolkit Web site: http://www.bannerhealthinnovations.org/DoortoDoc/About+D2D.htm

Improving Patient Safety Through Enhanced Provider Communication
Principal Investigator: Kay Daugherty, Ph.D., R.N.; Denver Health and Hospital Authority, CO
Grant No.: HS015846-01

Description: This project focuses on improving the safety and effectiveness of communication between providers and among teams. A standardized situational briefing model is used as a guide to facilitate timely communication about changes in patient status based on need. The model is also used to implement daily patient-centered rounds by multidisciplinary teams and to conduct team huddles each shift to discuss patient care plans. In addition, the project uses other communication tools designed to help clinicians and health care professionals implement effective teamwork and communication strategies in their practice settings to improve patient safety. The toolkit includes a framework for specific communication strategies, educational materials, and evaluation and analysis tools.

Toolkit Web site:
http://www.safecoms.org

The Emergency Department Pharmacist as a Safety Measure in Emergency Medicine
Principal Investigator: Rollin (Terry) Fairbanks, M.D., M.S.; University of Rochester, NY
Grant No.: HS015921-01

Description: This project focuses on improving medication safety by implementing an emergency department pharmacist program. The toolkit facilitates implementing of similar programs in other hospital emergency departments. The toolkit includes a description of the formal, optimized role of the emergency department pharmacist; challenges and accompanying solutions to implementing emergency department pharmacist programs; and evidence to support the efficacy of such programs.

Toolkit Web site:
http://www.EmergencyPharmacist.org

Using Military Simulation to Improve Rural Obstetric Safety
Principal Investigator: Jeanne-Marie Guise, M.D., M.P.H.; Oregon Health & Science University, Portland, OR
Grant No.: HS015800-01

Description: This project brought together simulation technology and team performance training to improve obstetric care and promote safety for women and children, particularly in rural communities. Project leaders

developed and tested a standardized curriculum for simulated obstetric emergency response drills and safety. The toolkit includes standardized curriculum that consists of simulations and team debriefings, team training modules, two clinical didactics specific to obstetric emergencies, a labor and delivery safety attitudes survey, and a complete electronic obstetric charting tool.

Toolkit Web site:
https://www.obsafety.org/content/blogcategory/53/101

Testing the Re-Engineered Hospital Discharge
Principal Investigator: Brian Jack, M.D.; Boston Medical Center, MA
Grant No.: HS015905-01

Description: Built on previous AHRQ funding, this project re-engineers the process of discharging patients from a hospital back into the community to make the process safer. The discharge workflow was redesigned using a set of 11 discrete, mutually reinforcing components aimed at reducing postdischarge adverse events and subsequent rehospitalizations. Two features of the re-engineered process are a discharge advocate who works with patients throughout the process and the real-time production of a simple, easy-to-understand discharge plan. The toolkit includes a discharge manual and software program, a discharge advocate training manual and instructions, patient education materials, guidelines for medication reconciliation and for developing a discharge plan for patients, and instructions for telephone reinforcement of the discharge plan.

Toolkit Web site: http://www.bu.edu/fammed/projectred

Implementing a Program of Patient Safety in Small Rural Hospitals
Principal Investigator: Katherine Jones, P.T., Ph.D.; University of Nebraska Medical Center, Omaha, NE
Grant No.: HS015822-01

Description: This project provides tools to facilitate progress by small rural hospitals to engineer a culture of patient safety. One of the key components is systematic voluntary medication error reporting to enhance medication safety in Critical Access Hospitals, which are licensed for 25 or fewer beds. These hospitals often lack adequate resources to develop an internal infrastructure for reporting, collecting, and analyzing medication error data. Another key component of this project is a rural-adapted version of the AHRQ Hospital Survey on Patient Safety Culture (HSOPS). This version of the HSOPS collapses work area and job title categories in the demographic portion of the survey to allow smaller hospitals to validly analyze differences in safety cultures within their organizations. In addition, the toolkit provides rural relevant tools to address areas of safety culture in need of improvement. These tools are organized according to the four components of an informed, safe culture: reporting, just culture, teamwork and communication skills, and learning tools, such as root cause analysis. All tools are adapted to be effective in the context of a small rural hospital.

Toolkit Web site:
http://www.unmc.edu/rural/patient-safety

Implementing Reduced Work Hours to Improve Patient Safety
Principal Investigator: Christopher Landrigan, M.D., M.P.H.; Brigham and Women's Hospital, Boston, MA
Grant No.: HS015906-01

Description: Built on previous AHRQ funding, this project implements evidence-based work schedules to reduce residents' work hours for extended shifts to help prevent errors caused by lack of sleep and fatigue and to improve continuity of patient care. Toolkit resources include a ready-to-implement circadian-based work schedules and evidence-based guidelines for successful shift changes and safe handovers.

Toolkit Web site:
https://workhours.bwh.harvard.edu

Improving Medication Safety in Clinics for Patients 55 and Older
Principal Investigator: Kathryn Leonhardt, M.D.; Aurora Health Care, Milwaukee, WI
Grant No.: HS015915-01

Description: This project improves the safety of care and care processes in outpatient settings through a partnership model involving patients, health care providers, and the community. The project implements a patient safety partnership council that includes both providers and patients and uses focus groups, interviews, and other tools to facilitate patient-centered care, including medication safety for elderly patients. The toolkit includes a guide for developing and implementing an outpatient patient-provider council and a guide for improving medication list accuracy in the clinic setting.

Toolkit Web site:
http://patientsafety.org/page/109587

Improving Warfarin Management
Principal Investigator: James Levett, M.D.; Kirkwood Community College, Cedar Rapids, IA
Grant No.: HS015830-01

Description: This project applies ISO 9001 principles to establish a virtual community anticoagulation clinic. The

local community college, two hospitals, three physician practices, and quality engineers from the largest local employer group assisted in the development of a model of safe care delivery. The toolkit features tools for implementing a virtual anticoagulation clinic by other communities of providers, training materials on teaching ISO 9001 quality concepts, anticoagulation care guidelines, techniques for simplifying and controlling documents across multiple institutions and sites of care, guidelines for utilizing auditing corrective and preventive action plans to monitor clinical outcomes, and patient education materials.

Toolkit Web site:
http://www.crhealthcarealliance.org

Preventing Venous Thromboembolisms in the Hospital
Principal Investigator: Greg Maynard, M.D.; University of California, San Diego, CA
Grant No.: HS015826-01

Description: This project focuses on eliminating preventable hospital-acquired venous thromboembolism. The safe-practice intervention focuses on improved adherence to proven prophylactic methods that should substantially reduce venous thromboembolism in hospitalized patients. The project toolkit includes materials to assess venous thromboembolism risk at admission, a prophylaxis protocol that includes recommended options for patients at various risk levels, and software-based protocols that others can use to create and modify venous thromboembolism prophylaxis order sets based on their own evidence-based conclusions.

Toolkit Web site:
http://www.hospitalmedicine.org/ResourceRoomRedesign/RR_VTE/VTE_Home.cfm

Patient Multidisciplinary Training for Medication Reconciliation
Principal Investigator: Melinda J. Muller, M.D.; Legacy Health System, Portland, OR
Grant No.: HS015904-01

Description: This project implements a single, shared, updated, and reconciled medication and allergy list for patients across the continuum of inpatient and outpatient care. A central component of this intervention is the development of objective criteria for use in the hospital inpatient, primary care, or home health outpatient settings to trigger pharmacist review and involvement in taking the patient's medication history. The toolkit includes clinician training tools in medication reconciliation; medication and allergy lists for reconciliation; criteria for pharmacist consultation and review of medication history; patient education tools; and resources geared toward successful implementation, such as institutional review board forms and scripts for patient and staff focus groups.

Toolkit Web site:
http://www.legacyhealth.org/MedicalReconciliation

Reducing Discrepancies in Medication Histories and Orders at Handoffs
Principal Investigator: Gary Noskin, M.D.; Northwestern Memorial Hospital, Chicago, IL
Grant No.: HS015886-01

Description: This project implements a training intervention to improve medication history interviewing skills and offers a guide to creating a single medication history list within the medical record. The training focuses on identifying patient risk factors frequently responsible for inaccurate medication reconciliation, including limited English proficiency and low

health literacy, complex medication histories, or impaired cognitive status. The toolkit contains resources for both health care professionals and patients, including resources for measuring error and associated harm; guidelines on safe process design principles; evaluation, education, and training tools; and lessons learned on implementation and sustainability of medication reconciliation.

Toolkit Web site:
http://www.medrec.nmh.org/nmh/medrec/index.htm

A Simulation-Based Safety Curriculum in a Children's Hospital Emergency Department
Principal Investigator: Mary Patterson, M.D.; Cincinnati Children's Hospital Medical Center, OH
Grant No.: HS015841-01

Description: This project is aimed to decrease and mitigate the effects of medical errors in a pediatric emergency department through the implementation of a multidisciplinary, multiclinician, simulation-based safety curriculum that emphasized team behaviors. The project toolkit provides a simulation-based curriculum; a re-evaluation and reinforcement plan involving all emergency department personnel and house staff; an abbreviated teamwork training course for multidisciplinary and interdisciplinary trauma teams; instructional materials necessary to implement the 1.5-day safety course, including a training agenda; pre- and posttest knowledge questionnaires; lectures, including a section on crew resource management concepts and video presentations; and a link to a safety attitude and safety climate survey.
Contact: mary.patterson@cchmc.org

Improving Medication Adherence
Principal Investigator: Carl Sirio, M.D.; University of Pittsburgh, Pittsburgh, PA
Grant No.: HS015851-01

Description: This project implements a multimodal patient medication education intervention to improve safety hospital-wide by involving clinicians and patients during the hospital stay. Drawing on health behavior change theory, the intervention focuses on reducing 30-day hospital readmissions and on improving patient satisfaction and medication adherence. The toolkit promotes a generalizable and sustainable education program with tools and resources that promote structured medication education, administrative support and staff training, and established quality improvement techniques. The toolkit includes training CD-ROMs, pocket/wallet-sized cards to promote health behavior change guidelines, and classroom training materials.

Toolkit Web site:
http://www.ccm.upmc.edu/epitome

Reducing Central Line Bloodstream Infections and Ventilator-Associated Pneumonia
Principal Investigator: Theodore Speroff, Ph.D.; Vanderbilt University School of Medicine and HCA, Nashville, TN
Grant No.: HS015934-01

Description: This project coupled two interventions to improve critical care: reduction of catheter-related blood stream infections and ventilator-associated pneumonia. The project used a randomized controlled trial to compare the effectiveness of various strategies for implementing an improvement initiative. The toolkit includes educational materials, surveys for infection control and safety, information on collaborative improvement strategies, checklists to monitor the bundled processes of care, and guide and template worksheets for initiating a quality improvement team and maintaining continuous action plans.

Toolkit Web site:
http://www.hcapatientsafety.org/custompage.asp?guidcustomcontentid={30E376EA-1232-4B78-9AF3-95B6E565A847}

Improving Hospital Discharge Through Medication Reconciliation and Education
Principal Investigator: Mark Williams, M.D.; Emory University, Atlanta, GA
Grant No.: HS015882-01

Description: This project, built on previous AHRQ funding, implements a "discharge bundle" consisting of medication reconciliation, patient-centered hospital discharge education, and postdischarge continuity checks. This intervention improves the safety of patient discharges from the hospital by increasing patients' understanding of their illness and treatment and fostering continuity of care. The toolkit contains such resources as medication reconciliation forms, a checklist for discharge patient education, a checklist for a postdischarge continuity check, and suggestions for successful implementation.

Toolkit Web site:
http://www.hospitalmedicine.org/Content/NavigationMenu/QualityImprovement/QIClinicalTools/Quality_Improvement.htm

Interactive Venous Thromboembolism Safety Toolkit for Providers and Patients

Principal Investigator: Brenda Zierler, Ph.D., R.N.; University of Washington, Seattle, WA

Grant No.: HS015898-01

Description: This project implemented safe practice interventions for patients with venous thromboembolism. An interactive safety toolkit contains multiple evidence-based tools for providers and patients to improve the safety of the process for the diagnosis and treatment of venous thromboembolism, including patient education materials, prevention guidelines, screening and assessment materials, and treatment pathways.

Toolkit Web site:
http://vte.son.washington.edu

For Additional Information

For additional information on AHRQ-funded patient safety research and findings, please visit the AHRQ Web site at http://www.ahrq.gov, the PIPS grants and toolkits Web sites at http://www.ahrq.gov/qual/pips, or contact:

Eileen Hogan, M.P.H.
Project Co-leads -Patient Safety
AHRQ Center for Quality
Improvement and Patient Safety
540 Gaither Road
Rockville, MD 20850
Telephone: 301-427-1307
E-mail: Eileen.Hogan@ahrq.hhs.gov

Deborah Queenan, M.S.W.,
Project Co-leads -Patient Safety
AHRQ Center for Quality
Improvement and Patient Safety
540 Gaither Road
Rockville, MD 20850
Telephone: 301-427-1330
E-mail: Deborah.Queenan@ahrq.hhs.gov

www.ahrq.gov

AHRQ Pub. No. 08-P006
Revised April 2008