

Patient Safety Tools: Improving Safety at the Point of Care

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.

Introduction

In 2005, the Agency for Healthcare Research and Quality (AHRQ) awarded more than \$9 million for 17 new projects under its Partnerships in Implementing Patient Safety (PIPS) grants program. The PIPS projects focus on implementing safe practice interventions that can be used by those who wish to adapt and/or adopt the interventions to improve patient safety in diverse settings. A particular focus of these projects is on documenting the impact of the interventions and overcoming the barriers and challenges to implementation. The PIPS projects have produced tools and toolkits designed to be used at the point of patient care.

The toolkits contain evidenced-based resources to assist:

- Critical access hospitals, clinics, and home care settings by educating clinicians, patients, and family members about medication safety, including medication reconciliation.
 - Clinicians in the care of specific conditions, such as venous thromboembolism (VTE).
 - Hospitals with the redesign of care delivery such as improving patient flow and working conditions for clinicians such as sleep and fatigue.
- Hospitals by improving care delivery around some of the most common and serious patient safety problems, such as communication, transitions in care, and discharge.

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: By implementing a patient flow process called “Door to Doc,” this project improves the safety of care for patients in the emergency department by reducing the time patients wait to be seen and by



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expediting admission to the most appropriate hospital unit. The toolkit contains the necessary resources for implementing operational changes including: strategies for “Door to Doc” redesign principles; multidisciplinary training aids and methods; a plan designed for managing implementation; and tools aimed at project management and patient safety culture.

Toolkit Web Site:

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 or 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:

www.safecom.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:

www.emergencypharmacist.org/index.html

Using Military Simulation to Improve Rural Obstetric Safety

Principal Investigator: Jean-Marie Guise, M.D.; Oregon Health & Science University, Portland, OR

Grant No.: HS015800-01

Description: This project brings 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: the 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:

www.obsafety.org/cts/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 in order to make the process safer. The discharge workflow was redesigned using a set of 10 discrete, mutually reinforcing components that aim to reduce post-discharge 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:

www.bu.edu/fammed/projectred/

Implementing a Program of Patient Safety in Small Rural Hospitals

Principal Investigator: Katherine Jones, Ph.D.; University of Nebraska Medical Center, Omaha, NE

Grant No.: HS015822-01

Description: This project provides processes and tools to facilitate activities and progress by small rural hospitals to improve patient safety. One of the key components is voluntary medication error reporting to enhance safety in critical access hospitals that lack adequate resources to develop an internal infrastructure for reporting, collecting, and analyzing data. Other key components of this project are communication and safety culture tools and education processes that were implemented in rural hospitals. The toolkit provides resources to identify and implement evidence-based safe medication practices including: tips and tricks for submitting data to the MEDMARXsm reporting system; medication error reporting forms and

feedback reports; staff training modules; and a structured communication tool.

Toolkit Web Site:

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 help reduce work hours for extended shifts for residents to help prevent errors caused by lack of sleep and fatigue, and to improve continuity of patient care. Toolkit resources include: 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 how-to guide for developing and implementing an outpatient patient-provider council and a how-to guide for improving medication list accuracy in the clinic setting.

Toolkit Web Site:

www.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 anticoagulation clinic for two hospitals and two physician practices, which resulted in the development of a model for developing safe care delivery systems. 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.

For More Information:
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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:

www.hospitalmedicine.org/AM/Template.cfm?Section=Home&Template=/CM/HTMLDisplay.cfm&ContentID=6312

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:

www.legacyhealth.org/body.cfm?id=1878&oTopID=08

Reducing Discrepancies in Medication Orders at Handoffs

Principal Investigator: Gary Noskin, M.D.; Northwestern University, Evanston, 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:

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 aims 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 emphasizes 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 post-test 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.

For More Information:

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Improving Medication Adherence

Principal Investigator: Carl Sirio, M.D.; University of Pittsburgh, PA

Grant No.: HS015851-01

Description: This project implements a multi-modal 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.

For More Information:

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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 couples two interventions to improve critical care: reduction of catheter-related blood stream infections and ventilator-associated pneumonia. The project uses 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:

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 post-discharge 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; and a checklist for a post-discharge continuity check as well as suggestions for successful implementation.

Toolkit Web Site:

www.hospitalmedicine.org/Content/NavigaionMenu/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 implements 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 More Information

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

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