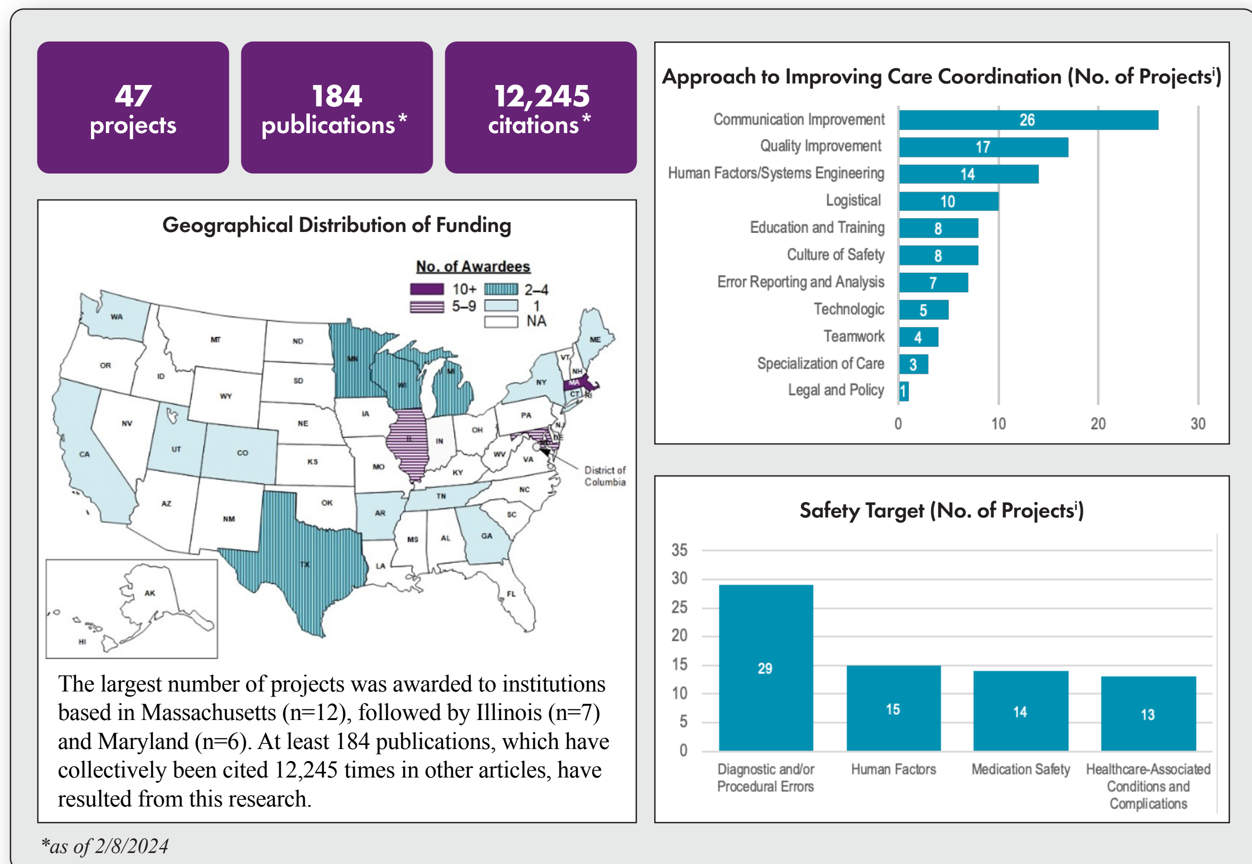
AHRQ-Funded Patient Safety Project Highlights

Improving Patient Safety by Enhancing Care Coordination

Overview

Care coordination is defined as the process of organizing patient care activities and sharing information among all individuals concerned with a patient's care to achieve safe and effective care. Since 2000, AHRQ has supported 47 patient safety projects related to enhancing care coordination. This publication summarizes AHRQ's investments in this promising pathway toward safer care, including examples of project findings, output, and impact of this work. Details about each AHRQ-supported project are available in the Appendix.

Scope of AHRQ Investments



[i] The total number of projects is greater than 47 as some projects used more than one approach to improving safety or had more than one safety target.

Agency for Healthcare Research and Quality

PATIENT SAFETY

The most prevalent approach to improving care coordination was communication interventions (n=26, 55%), followed by quality improvement strategies (n=17, 36%). The safety improvement target for 29 of the projects (62%) was diagnostic and/or procedural errors, followed by human factors (e.g., distractions) (n=15, 32%), medication safety (n=14, 30%), and healthcare-associated conditions and complications (e.g., infections, falls) (n=13, 28%).

Examples of Project Findings

Most projects included in this collection of work were initiated after 2007. Many have focused on improving care coordination for patients transitioning from one care setting (often a hospital) to another, such as during hospital discharge or handoffs between care providers. AHRQ-funded work related to care coordination has influenced patient safety research and quality improvement by generating new knowledge; developing, implementing, and evaluating care coordination tools, toolkits, and programs; and disseminating research findings to new audiences.

Examples of these projects and summaries of their results are described below and organized by research themes identified in this collection of work.

Improvements in Handoff Communication

Some care coordination projects focused on improving handoff communication among providers and aimed to test promising models in new settings or populations. For example:

- The I-PASS handoff bundle,[ii] which uses structured computerized handoff tools and quality improvement tools, was shown to decrease handoff-related adverse events (e.g., minor harm, major harm) by 42 percent across provider types and settings.
- The Handoff CEX (Clinical Evaluation Exercise) training instrument was shown to be effective in assessing handoff quality among inpatient physicians in real time.
- The ECHO-CT (Extension for Community Healthcare Outcomes-Care Transitions) is a novel video-conferencing program. It uses a multidisciplinary case-based model to connect hospital-based physicians, social workers, and pharmacists with post-acute care providers to enhance communication and improve care transitions of older patients discharged to skilled nursing facilities (SNFs). ECHO-CT was implemented in a large network of SNFs and resulted in fewer readmissions, lower healthcare costs, and shorter lengths of stay.

Improvements in Discharge and Reduction in Readmission Rates

AHRQ funded several projects that focused on improving the discharge process and reducing preventable hospital readmission rates. For example:

- Use of the Re-Engineered Discharge (RED) process—a 12-step intervention—was shown to reduce preventable hospital readmissions and emergency room visits by 30 percent compared with usual care.
- Readmission risk predictive models using transactional health information exchange data were developed, tested, and shown to detect potentially preventable readmissions.
- The Early Screen for Discharge Planning decision support tool, originally developed for use in an urban academic medical center, was tested in a rural community hospital; findings were consistent with those in the urban setting. Evidence gained from this study contributes to improvement in the quality and consistency of discharge planning decisions and services in community settings.
- Another project found that health systems with higher teamwork levels had significantly lower rates of emergency department visit readmission and mortality, as well as lower episode costs.

[ii] I-PASS is a mnemonic that stands for illness severity, patient summary, action list, situation awareness and contingency plans, and synthesis by receiver.

Quality Improvements in Various Healthcare Settings

A number of projects explored quality improvement strategies that address care coordination and patient outcomes in a variety of healthcare settings. For example:

- A comprehensive bundle of standardized delirium care practices for use in intensive care units (ICUs) was shown to achieve greater improvements in reducing incidence of delirium in ICUs than multifaceted care approaches.
- A new decision support screening tool for providers in ambulatory care settings was developed to minimize opportunities for bypassing safety screens and can predict patient anesthesia needs.
- One project identified key components for a re-engineered visit (REV) process—a primary care counterpart to AHRQ's RED process—to help inform future research to develop, test, and implement the framework.
- Another project used a Situation-Background-Assessment-Recommendation communication tool for physicians and nurses to improve the quality of warfarin management in nursing homes. The approach had statistically significant improvements in therapeutic warfarin levels and a non-statistically significant reduction in adverse events.

Impacts

AHRQ-funded care coordination projects have aimed to improve patient safety during care transitions across a range of healthcare settings (e.g., emergency department, inpatient setting, nursing home). Collectively, the 47 AHRQ-funded projects have resulted in:

- Creation of a broad collection of tools and toolkits that help healthcare professionals implement evidence-based care coordination protocols into clinical care,
- An increased knowledge base about sociotechnical risk factors for poor care coordination outcomes, and
- Identification of research gaps and areas for continued development in the field of care coordination.

The developed resources and project results of this body of AHRQ-funded work have helped to provide:

- Safer processes during patient care transitions (e.g., across settings, within or between care teams/providers) and at discharge,
- Decreased preventable hospital readmission rates and adverse events (e.g., falls, medication errors), and
- Improved patient outcomes (e.g., satisfaction, increased time in medication therapeutic range, decreased length of stay).

To learn more about each of the projects included in the synthesis, view the companion Appendix that follows.

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Appendix

Care Coordination Project Summary

This appendix briefly describes AHRQ-funded projects related to care coordination. Projects are organized chronologically first by state, then by original date of funding. The grants listed below are linked to the NIH RePORTER, an electronic tool that allows users to search a repository of federally funded research projects and access publications resulting from such funding.

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
	ARKANSAS	
Perla Vargas **Arkansas Children's Hospital Research Institute** Little Rock, Arkansas	U18 HS11062 [Grant] **Developing an Asthma Management Model for Head Start Children** 2000-2004 $1,188,199	**Purpose:** To develop a pediatric asthma management model for children enrolled in the Head Start program using evidence-based asthma management paradigms. **Key Findings/Impact:** A final report was not available, but three resulting publications concluded that aeroallergens were commonly detected in Pulaski County, Arkansas, Head Start center classrooms. Children with asthma enrolled in a Head Start program had significant environmental tobacco smoke exposure, were highly atopic and symptomatic, and did not receive appropriate medication treatment. In addition, having an increased body mass index was associated with more asthma morbidity in the Head Start asthmatic patients studied. **Publications:** 3
	CALIFORNIA	
Stephanie Taylor **RAND Corporation** Santa Monica, California	290-06-00017-7 [Contract] **Refine, Develop, and Conduct Formative Evaluation of High-Impact Training Modules for Front-Line Nursing Home Personnel To Improve Patient Safety** 2009-2011 $374,864	**Purpose:** To collect and examine existing patient safety educational and training materials; assess their relevance for high-impact areas in the nursing home setting; and refine, develop, and conduct formative evaluations of developed instructional modules for frontline personnel in the nursing home setting. **Key Findings/Impact:** This contract resulted in the development of a nursing home frontline staff training curriculum consisting of three training modules and an instructor guide. The modules provide training on detecting changes in residents' conditions, communicating change in condition, and preventing and managing falls. The collection of resources is available on the AHRQ website. **Publications (Products):** 1

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
		COLORADO
Marisha Burden **University of Colorado** Denver, Colorado	R03 HS27231 [Grant] **Inpatient Provider Rounding Prioritization of Patients Ready for Discharge** 2020-2021 $100,000 Final Report	**Purpose:** Hospitals around the country face bottlenecks and capacity issues. When hospitals successfully manage the high capacity, access increases for patients who need this higher level of care and expertise. This study aimed to add to the evidence to support or negate the practice of prioritizing discharges. No randomized studies to date have addressed these issues. **Key Findings/Impact:** In this randomized controlled trial, prioritizing patients ready for discharge first compared with usual practice improved discharge order time but did not improve hospital length of stay. The significance of these findings is that commonly used tactics such as prioritizing discharges first without the context and understanding that clinicians also must balance sick patients and the practical aspects of care may disrupt workflows. In this study, while not significant, prioritizing patients ready for discharge first led to an increased length of stay. Prioritizing patients ready for discharge as a sole tactic does not appear to improve throughput. Other tactics that may be more fruitful in improving throughput should be studied. Potential future areas of study will be on how workloads may influence these measures. **Publications:** 1
		GEORGIA
Mark Williams **Emory University** Atlanta, Georgia	U18 HS15882 [Grant] **Hospital Patient Safe-D(ischarge): Discharge Bundle for Patients** 2005-2007 $466,664	**Purpose:** To implement a "discharge bundle" of patient safety interventions advocated by the Joint Commission on Accreditation for Healthcare Organizations, the National Quality Forum, and AHRQ. **Key Findings/Impact:** A final report was not available, but one resulting publication characterized discharge dilemmas as system failures, described several salient but dysfunctional moments in the discharge process as factors that contribute to moral perplexities, and provided suggestions for improvement. **Publications:** 1
		ILLINOIS
Julie Johnson **University of Chicago** Chicago, Illinois	P20 HS17119 [Grant] **A Model for Effective Communications To Improve Inpatient Ambulatory Transitions** 2007-2008 $191,840	**Purpose:** To improve the quality, safety, and continuity of patient care during the transition from inpatient to ambulatory care by developing a model of effective communication between inpatient and ambulatory physicians. **Key Findings/Impact:** This study examined older patients' experiences with problems after hospital discharge and looked at whether primary care physicians (PCPs) knew about their hospitalizations. Results show that 42% (27) of patients reported 42 different postdischarge problems and 30% of PCPs were unaware of patient hospitalization. Patients were twice as likely to report a problem if their PCP was unaware of the hospitalization (31% PCP aware vs. 67% PCP not aware; $p<0.05$). **Publications:** 6
Milton Eder **Access Community Health Network** Chicago, Illinois	R18 HS17911 [Grant] **A Toolkit for Primary Care Practices To Improve the Safety of Testing Processes** 2008-2012 $781,643	**Purpose:** To develop, test, implement, and disseminate a toolkit for primary care offices and health centers to improve the safety of their testing processes. **Key Findings/Impact:** A web toolkit, Improving Your Office Testing Process, was developed for rapid-cycle patient safety and quality improvement. **Publications:** 2

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Vineet Arora **University of Chicago** Chicago, Illinois	R03 HS18278 [Grant] **Development and Validation of a Tool To Evaluate Hand-off Quality** 2009-2011 $98,447 Final Report	**Purpose:** To develop and validate a tool to assess real-time handoff quality among inpatient physicians. **Key Findings/Impact:** The CEX handoff training instrument improved internal medicine residents' self-perceived preparedness for performing an effective handoff ($p<0.009$) and was rated highly by trained observers. Faculty reliably distinguished differing levels of performance in each domain in a statistically significant fashion (e.g., professionalism) without evidence of rater bias. Discerning superior and satisfactory communication remains challenging. External observer ratings were lower than peer ratings. Using standardized video-based scenarios highlighting differing levels of performance, investigators demonstrated evidence that the Handoff Mini-CEX might draw reliable and valid conclusions regarding handoff performance. **Publications:** 11
Janet Stifter **University of Illinois at Chicago** Chicago, Illinois	R36 HS23072 [Grant] **Using an Electronic Health Record To Examine Nurse Continuity and Pressure Ulcers** 2014-2015 $40,192 Final Report	**Purpose:** To examine the influence of nurse continuity on the prevention of hospital-acquired pressure ulcers (HAPUs). **Key Findings/Impact:** Poor nurse continuity (unit mean continuity index = 0.21-0.42 [1.0 = optimal continuity]) was noted on all nine study units. Nutrition, mobility, perfusion, hydration, and skin problems on admission, as well as patient age, were associated with HAPUs ($p<0.001$). Controlling for patient characteristics, nurse continuity, and interactions between nurse continuity and other nurse-staffing variables was not significantly associated with HAPU development. Patient characteristics, including nutrition, mobility, and perfusion, were associated with HAPUs, but nurse continuity was not. Researchers demonstrated a high level of variation in the degree of continuity between patient episodes in the Hands-on Automated Nursing Data System, showing that it offers rich potential for future study of nurse continuity and its effect on patient outcomes. **Publications:** 3
Kristina Davis **Health Research and Educational Trust (HRET)** Chicago, Illinois	HHSP233201500016I [Contract] **Implementing PS Strategies in Ambulatory Care Action III (3 projects)** 2016-2017 $565,400	**Purpose:** To research the transitions of care among ambulatory sites vulnerable to patient-safety gaps. Patients who transition from one ambulatory care facility clinician to another are especially vulnerable to patient-safety errors, in part due to a lack of effective communication and patient engagement in shared decision making. HRET adapted select, evidence-based patient and care partner-centered acute care discharge tools to create a toolkit specifically for the ambulatory care setting. The toolkit is designed to help staff actively engage patients and their care partners to prevent errors during transitions of care. **Key Findings/Impact:** The Toolkit To Engage High-Risk Patients in Safe Transitions Across Ambulatory Settings included a detailed implementation guide, preintervention assessment, patient appointment aid, checklist for clinicians, and educational video. Toolkit materials were field tested in two facilities, one rural and one urban. Qualitative analysis of interviews with nine staff members was completed to better understand implementation methods, effectiveness of support materials, barriers to and facilitators of implementation, and lessons learned from implementation. Staff noted the necessity of the toolkit and its importance but found it to be lengthy and hard to implement due to necessary staffing and time. They were more likely to implement the toolkit if it fit into the current workflow. Many suggested integrating the toolkit with after-visit summaries to reduce burden, streamline workflow, and decrease redundancy. The importance of teamwork, communication, and mutual support were voiced throughout interviews. Staff encouraged other facilities to adapt the toolkit to fit their needs. The findings of this contract frame the opportunities and challenges in engaging patients and their care partners as active participants in preventing harm during transitions of care. **Publications:** 0

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Kevin O'Leary **Northwestern University at Chicago** Chicago, Illinois	R18 HS25649 [Grant] **Redesigning Systems To Improve Quality for Hospitalized Patients** 2017-2023 $1,974,465 Final Report	**Purpose:** To implement a set of evidence-based, complementary interventions across a range of clinical microsystems, identify factors and strategies associated with successful implementation, and evaluate the impact on quality. **Key Findings/Impact:** The final report presented findings of this study of complementary interventions to redesign care for patients hospitalized with medical conditions. Researchers found an association with higher ratings of teamwork climate and collaboration but no association with adverse events, length of stay, 30-day readmissions, or patient experience. Efforts to improve patient safety and efficiency of care, spurred in large part by national campaigns, public reporting, and payment policies, may have resulted in limited opportunities for further improvement related to improvements in teamwork climate. Sites struggled to optimally implement the Advanced and Integrated MicroSystems interventions. Researchers identified four interrelated contextual factors associated with the successful implementation of combined interventions. Those contextual factors were: (1) senior hospital leader involvement and organizational support, (2) organization, hospital, and professional group priority alignment, (3) site leaders' engagement and relationship with one another, and (4) professionals' perceptions of need and intervention benefits. In addition, this project produced the Redesigning Systems To Improve Teamwork and Quality for Hospitalized Patients: RESET Project Implementation Guide, which is available on the AHRQ website. **Publications:** 5
Shyam Prabhakaran **Northwestern University at Chicago** Chicago, Illinois	R18 HS25359 [Grant] **Enhancing Stroke Prehospital and Emergency Evaluation and Delivery (E-SPEED)** 2018-2023 $1,547,504	**Purpose:** To address two important gaps in knowledge about the acute evaluation and treatment of stroke patients: prehospital screening errors and delays in interhospital transfer. **Key Findings/Impact:** According to the final report, analysis of 965 reports showed that a text-based model predicted large vessel occlusion better than the Cincinnati Prehospital Stroke Scale (CPSS) (p =0.165) and the 3-Item Stroke Scale (3 I-SS) (p <0.001) scores. High criticality failures (e.g., failure to detect large vessel occlusion, failure to use screening tools) led to the design of a seven-solution intervention, with six of the seven implemented at the two primary stroke centers. Preimplementation and postimplementation operational data were collected from February 2018 through December 2022. They show a 71-minute decrease in mean door-in-door-out (DIDO) time with high levels of clinician satisfaction. **Publications:** 9
MAINE		
Andrew Coburn **University of Southern Maine** Portland, Maine	R18 HS19604 [Grant] **SAFER: Standardizing Admissions For Elderly Residents** 2010-2013 $587,428 Final Report	**Purpose:** To document and standardize critical communication pathways and information between nursing facilities, emergency medical services, and emergency departments to reduce medication errors, treatment delays, infections, and missing or misunderstood patient directives and consent. **Key Findings/Impact:** Chart audit data reveal significant improvement in documentation and sharing across three settings of care of key patient information, including infection status and baseline mental and physical functioning. Although improved, documentation of advanced directives and medication lists remains challenging. Pilot site interviews and site visits suggest the key facilitators of improvement were baseline process mapping, technical assistance and training, structured chart reviews and formative evaluation, local champions and partnership, and degree of engagement with the statewide collaborative. **Publications:** 0

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MARYLAND		
Kendall Hall **University of Maryland - Baltimore County** Baltimore, Maryland	P20 HS17111 [Grant] **Evaluation of Risk by Active Surveillance in the Emergency Department (ERASED)** 2007-2009 $163,969 Final Report	**Purpose:** To identify the types of errors and adverse events that occur in the emergency department and understand factors that lead to them. **Key Findings/Impact:** Surveillance was conducted for 656 hours with 487 visits sampled, representing 15 percent of total visits. A total of 1,180 caregiver interviews were completed, generating 210 nonduplicative event reports for 153 visits. Close to one-third (32%) of the visits had at least one nonideal care event. Segments of care with the highest percentage of events were: diagnostic testing (29%), disposition (21%), evaluation (18%), and treatment (14%). Process-related delays were the most frequently reported events within the categories of medication delivery (53%), laboratory testing (88%), and radiology testing (79%). Fourteen (7%) of the reported events were associated with patient harm. **Publications:** 1
Kendall Hall **University of Maryland - Baltimore County** Baltimore, Maryland	R18 HS17904 [Grant] **Safety Advancement in the Emergency Department** 2008-2009 $278,411 Final Report	**Purpose:** To develop a tool to reduce gaps in care related to diagnostic study processes and medication delivery in emergency departments. **Key Findings/Impact:** The principal investigator relocated to AHRQ, so the grant was stopped at the end of the first year. It was determined that the three processes for improvement shared similar features and failure modes. This information was used to develop a draft cognitive tool for status tracking. Preimplementation surveillance was conducted to establish baseline process failure rates. Preliminary data indicated that failures were correlated with gaps in processes. **Publications:** 0
Ayse Gurses **Johns Hopkins University** Baltimore, Maryland	K01 HS18762 [Grant] **Improving the Safety of Care Transitions for Cardiac Surgery Patients** 2010-2015 $662,255	**Purpose:** To identify the potential risks postoperative cardiac surgery patients face in care transitions and develop methods and tools to reduce these risks. **Key Findings/Impact:** This research identified 58 categories of hazards for cardiac surgery patients, including care providers (e.g., practice variations), tasks (e.g., high workload), tools and technologies (e.g., poor usability), physical environment (e.g., cluttered workspace), organization (e.g., hierarchical culture), and processes (e.g., noncompliance with guidelines). Progress toward improving patient safety has been slow despite engagement of the healthcare community in improvement efforts. A potential reason for this sluggish pace is the inadequate integration of human factors and ergonomics principles and methods in these efforts. Patient safety problems are complex and rarely caused by one factor or component of a work system. Thus, healthcare would benefit from human factors and ergonomics evaluations to systematically identify the problems, prioritize the right ones, and develop effective and practical solutions. **Publications:** 17
Hadi Kharrazi **Johns Hopkins University** Baltimore, Maryland	R21 HS22578 **Development of a Community-Wide Real-Time Health Information Exchange-Based Hospital Readmission Risk Prediction and Notification System** 2013-2015 $299,803 Final Report	**Purpose:** To prevent avoidable hospital readmissions via an integrated health information technology system (e.g., a health information exchange [HIE]) to increase primary care provider engagement in reducing avoidable readmissions. **Key Findings/Impact:** The research team developed a library of Readmission Risk Prediction Models (RRPMs) that showed an acceptable predictive power (AUC ranging between 0.59 and 0.63) to detect potential preventable readmissions. This RRPM library was not publicly available. The researchers concluded that readmission prediction models can be developed based on transactional HIE data. However, more work is needed to ensure higher accuracy and increased generalizability for the models. **Publications:** 1

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Alicia Arbaje **Johns Hopkins University** Baltimore, Maryland	K08 HS22916 [Grant] **Older Adult Safety While Receiving Home Health Services After Hospital Discharge** 2014-2019 $701,143 Final Report	**Purpose:** To research older adults who require skilled home health care (SHHC) after hospital discharge. They are among those at highest risk of rehospitalization and adverse events. The study aimed to develop strategies to help SHHC agencies provide safer transitions for these individuals. **Key Findings/Impact:** SHHC providers suggested organizational strategies for improving transitions and reducing rehospitalization, which were categorized from most to least frequently suggested: improve clarity of information in care plan documents sent from the hospital; facilitate frontloading of home visits; recommend additional service providers (e.g., social work, behavioral health); improve accuracy of older adult contact information; clarify role of SHHC services with older adult prior to home visit; improve screening of older adult for appropriateness for SHHC services; and identify caregiver availability prior to hospital discharge. The Index of Home Health Care Transition Quality, a 12-item count of safe transition practices available in the final report for this project, demonstrated feasibility of use, interrater reliability, stability, construct validity, and concurrent validity. The Index identified safety threats during care transitions and targeted transitions for intervention. Most hospital-to-home health transitions had at least one safety issue, and older adults/caregivers identified more patient safety threats than did home health providers. The Index is a novel measure to assess the quality of hospital-to-home health transitions in real time. Older adults and caregivers provide valuable perspectives and should be included in patient safety reporting. Study findings can guide the design of interventions addressing threats to patient safety. **Publications:** 16
Alicia Arbaje **Johns Hopkins University** Baltimore, Maryland	R01 HS26599 [Grant] **Making Health Care Safer for Older Adults Receiving Skilled Home Health Care Services After Hospital Discharge** 2019-2022 $1,954,469	**Purpose:** To develop tools to allow skilled home health care (SHHC) agencies to identify and act on threats to older adults' safety in real time to prevent readmissions. **Key Findings/Impact:** This project is ongoing until May 31, 2024, and a final report is not yet available. However, it aims to: • Analyze threats to older adult safety during hospital-to-SHHC transitions through a prospective cohort study. • Refine a bundle of interventions through stakeholder engagement. • Pilot test bundle implementation in a second prospective cohort study to test feasibility. **Publications:** 2
Alicia Ines Arbaje **Johns Hopkins University** Baltimore, Maryland	R01 HS26599-02S1 [Grant] **PA-20-070: Evaluating Home Healthcare Agency and Home Healthcare Professional Responsiveness to Safety Threats During Older Adults' Care Transitions in the Era of COVID-19** 2021-2023 $485,173	**Purpose:** To understand the impact of the pandemic on older adults' hospital-to-home experiences and identify best practices to address risks to older adult safety when they return home from the hospital. **Key Findings/Impact:** This project is supplemental to R01 HS26599-01 above; a final report is not yet available. **Publications:** 2

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
MASSACHUSETTS		
Brian Jack **Boston Medical Center** Boston, Massachusetts	UC1 HS14289 [Grant] **Re-Engineering the Hospital Discharge For Patient Safety** 2003-2004 $200,000 Final Report	**Purpose:** To identify actual and latent medical errors that occur at the time of discharge and develop a comprehensive hospital discharge toolbox to reduce errors that lead to rehospitalization. **Key Findings/Impact:** The research team characterized the hospital discharge process and analyzed its components using five patient safety methodologies: (1) process mapping; (2) failure mode and effect analysis; (3) root cause analysis of high utilizers; (4) qualitative interviews with rehospitalized patients and their families; and (5) probabilistic risk assessment. Pilot studies of postdischarge followup were performed. Based on the results of this process, a re-engineered discharge protocol was developed. The main elements of the discharge toolbox are: (1) Discharge Portfolio; (2) Comprehensive Patient Centered Discharge Plan; and (3) postdischarge reinforcement for high-risk patients. Products were disseminated via multiple peer-reviewed publications, invited presentations, and posters at national meetings. The Re-Engineered Discharge (RED) toolkit is available on the AHRQ website as a 12-step intervention that incorporates medication reconciliation, plain-language discharge instructions, patient education, and telephone followup to improve transitions of care and decrease the likelihood of readmissions. **Publications:** 5
Brian Jack **Boston Medical Center** Boston, Massachusetts	U18 HS15905 [Grant] **Testing the Re-Engineered Hospital Discharge** 2005-2007 $582,150	**Purpose:** To test the effects of an intervention designed to minimize hospital utilization after discharge. The intervention includes a package of services to minimize discharge failures—a process called re-engineered discharge (RED). **Key Findings/Impact:** This grant included a randomized controlled trial of the impact of the RED Toolkit on hospital utilization rates in a large urban safety-net hospital with an ethnically diverse patient population (Boston Medical Center). Results showed that participants in the intervention group (N=370) had a lower rate of hospital utilization than those receiving usual care. The intervention was most effective among participants with hospital utilization in the 6 months before index admission (p=0.014). This trial showed that a nurse discharge advocate and clinical pharmacist working together to coordinate hospital discharge, educate patients, and reconcile medications led to fewer followup emergency visits and rehospitalizations than usual care alone. **Publications:** 6
Jerry Gurwitz **University of Massachusetts Medical School** Worcester, Massachusetts	R01 HS16463 [Grant] **Enhancing the Safety of Warfarin in the Nursing Home** 2006-2010 $899,931 Final Report	**Purpose:** To improve warfarin management among nursing home residents through the use of a standardized nurse-physician communication tool. **Key Findings/Impact:** Investigators concluded that use of a communication protocol based on SBAR (Situation-Background-Assessment-Recommendation) can modestly improve the quality of warfarin management in nursing homes, as reflected by increased time in therapeutic range. This low-technology approach may also serve as a model for improving the safety of other medications associated with high rates of preventable adverse drug events and for improving safety for vulnerable nursing home residents at special risk for medication-related problems. **Publications:** 4

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Meghan Dierks **Beth Israel Deaconess Medical Center** Boston, Massachusetts	P20 HS17118 [Grant] **Making Ambulatory Procedural Care Safer: STAMP-Based Risk Assessment and Redesign** 2007-2009 $200,000 Final Report	**Purpose:** To conduct a comprehensive prospective risk analysis using probabilistic and system dynamics approaches (i.e., STAMP – Systems-Theoretic Accident Model and Processes) of the systems-based risks associated with ambulatory procedural care in a large urban setting. **Key Findings/Impact:** Investigators used a system dynamics framework to model complex sociotechnical interactions and interdependencies of key components of the ambulatory care setting (e.g., staff, instrumentation, protocols, procedures, information, communication, and scheduling cycles) that influence provider performance and patient safety. The models developed enabled the researchers to study the dynamic changes in risk and understand the frequency that human attributes and organizational pressures combine to push the system into an unacceptably hazardous state of operation, representing a unique approach to modeling and analyzing risk in healthcare. **Publications:** 0
Meghan Dierks **Beth Israel Deaconess Medical Center** Boston, Massachusetts	R18 HS17907 [Grant] **Optimizing Safety in Ambulatory Procedural Care: Risk Informed Interventions** 2008-2011 $461,185	**Purpose:** To create a more efficient and effective way to schedule ambulatory procedures by estimating the need for anesthesia support for patients by: (1) developing a reliable tool to screen patients and predict their need for anesthesia support; (2) codifying this screening method into a decision support tool; (3) changing the scheduling processes of the procedures; and (4) creating a toolkit for others to use. **Key Findings/Impact:** A sedation risk screening tool for patients was finalized but not made available to the public. Planners identified critical interdependencies between scheduling processes, capacity utilization, screening to identify risk, actual resource allocation, and provider behavior that increase risk during procedural sedation in ambulatory care settings through system dynamics modeling and analysis. As hospitals face increasing financial constraints, the pressure to favor productivity and throughput over safety is likely to become even greater. Institutions need tools that will assist them in balancing throughput, case complexity, and safety. **Publications:** 0
Brian Jack **Boston University** Boston, Massachusetts	290-06-00012-8 [Contract] **Avoiding Readmissions in Hospitals Serving Diverse Patients** 2009-2012 $499,977	**Purpose:** To revise the Project Re-Engineered Discharge (Project RED) Toolkit to facilitate hospitalwide implementation in hospitals that serve culturally and linguistically diverse patients. **Key Findings/Impact:** A purposive sample of 10 hospitals from different parts of the country with a mix of safety-net, community, and for-profit hospitals, including academic and nonacademic institutions, was selected to implement the RED intervention. Hospitals received in-person training on the intervention. Hospital implementation was evaluated using the organizational transformation model as a framework. Successful implementation of the toolkit at 1 year was defined as hospitals: (1) having implemented all 11 items of the RED intervention; or (2) having implemented and adapted a version of RED where adaptations were determined in advance of the implementation to be appropriate for the site. Pre- and postimplementation hospital readmission rates were also compared using data collected from the Hospital Compare website (for preimplementation rates) and from hospitals following implementation. **Publications:** 1 (plus 5 AHRQ Impact Case Studies)

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Veerappa Chetty **Boston Medical Center** Boston, Massachusetts	R03 HS17354 [Grant] **Comprehensive Analysis of Data From Testing the Re-engineered Hospital Discharge** 2009-2010 $98,956 Final Report	**Purpose:** To perform a complete analysis of the 1,008 discharges of patients enrolled in the Re-Engineered Discharge trial, focusing on risk (i.e., the probability of a readmission within 30 days after any discharge). **Key Findings/Impact:** When the Re-Engineered Discharge (RED) Toolkit intervention is given only to the five most effective risk categories, there is an 84.7% reduction in readmission compared with the same five subgroups given usual care. **Publications:** 1
Tanya Lord **University of Massachusetts, Boston** Boston, Massachusetts	R36 HS19118 [Grant] **An Evaluation of the Effectiveness and Process of a Rapid Response System** 2010-2011 $40,274 Final Report	**Purpose:** To evaluate the effectiveness and implementation of a Rapid Response System (RRS) at the U Mass Memorial Medical Center (UMMMC) and perform a modified process evaluation to determine how well the intervention worked as designed. **Key Findings/Impact:** There was a consistent downward trend in the incidence of cardiac arrests outside the intensive care units (ICUs) and in ICU transfers over all 4 years. A Spline regression showed no significant difference. **Publications:** 0
Christopher Landrigen **Children's Hospital Corporation** Boston, Massachusetts	R18 HS23291 [Grant] **Mentored Implementation of I-PASS for Better Handoffs and Safer Care** 2014-2017 $1,999,179 Final Report	**Purpose:** To research how provider handoffs of care are a leading source of miscommunications and adverse events. Although prior research demonstrated the benefit of a handoff improvement program for pediatric resident physicians, the extent to which this program could be adapted and implemented in alternate contexts was unknown. I-PASS—the name of the program—is a mnemonic that stands for illness severity, patient summary, action list, situation awareness and contingency plans, and synthesis by receiver. The purpose of the study was: (1) to adapt, disseminate, and measure the effectiveness of I-PASS implementation in collaboration with the Society for Hospital Medicine's Mentored Implementation Program; and (2) to build a curriculum published as a toolkit of implementation resources to promote widespread dissemination. **Key Findings/Impact:** Implementation was associated with increased inclusion of all five key handoff data elements for both verbal (21% vs. 64%) and written (10% vs. 67%) handoffs. In addition, increases were observed in the frequency of high-quality verbal (31% vs. 73%) and written (55% vs. 71%) patient summaries and verbal receiver syntheses (47% vs. 78%). Handoff-related adverse events decreased by 42%. All changes had $p<0.05$. Improvements were similar across provider types and settings. **Publications:** 1
Jim Maxwell **John Snow, Inc.** Boston, Massachusetts	HHSP233201500019I/ HHSP23337002T [Contract] **The Re-Engineered Visit (REV)** 2015-2017 $578,111	**Purpose:** To identify the key components that should be included in a re-engineered visit (REV) to improve the safety of primary care for recently discharged patients. **Key Findings/Impact:** The team conducted exploratory research on how to develop a primary care counterpart to AHRQ's RED. The conceptual framework's goals, principles, and processes dovetailed neatly with other primary care transformation efforts, such as advanced patient-centered medical homes (PCMHs) and provider-led accountable care organizations. The team identified a set of key components to serve as the foundation for future research by AHRQ and others on the development, testing, and implementation of the framework. A collection of resources resulting from this work is available on the AHRQ website: https://www.ahrq.gov/patient-safety/settings/ambulatory/reduce-readmissions.html **Publications:** 3

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Yuri Quintana (formerly Charles Safran) **Beth Israel Deaconess Medical Center** Boston, Massachusetts	R18 HS24869 [Grant] **Leveraging a Social Network of Elders and Families To Improve Medication Safety at Transitions of Care** 2016-2019 $1,491,125 Final Report	**Purpose:** To expand the functionality of the InfoSAGE (Information Sharing Across Generations) platform to include a mobile-first/point-of-care medication manager to help older people and their families keep an accurate medication list, coordinate the list with prescribing clinicians, track the impact of medications on symptoms, view medication precautions and drug-drug interactions, and become more engaged as partners in their care. **Key Findings/Impact:** When this grant ended, 587 users across 173 networks were using InfoSAGE. Researchers evaluated the platform based on the: (1) adoption and usage of the system by elders and families; (2) network structures; and (3) feedback from user surveys. They recruited a convenience sample of informal caregivers and older adults, all of whom were naïve users of InfoSAGE and reported a range of ability to use mobile applications despite general comfort with the internet (100% comfortable or very comfortable). After-scenario responses were mixed, as satisfaction, ease of use, and future utility scored high, but the usefulness of the in-app help was divisive and found to be lacking. There seemed to be issues with the user design and experience in general, because the layout, navigation, and field design were consistently challenging to participants. It is theorized the observed difficulties in navigation were problems of technology literacy. This research indicates that it is possible, although difficult, to recruit elders over 75 and their families to use online and mobile technologies for information sharing and care coordination. **Publications:** 6
Lewis Lipsitz **Beth Israel Deaconess Medical Center** Boston, Massachusetts	R01 HS25702 [Grant] **Improving Safety of Transitions to Skilled Nursing Care Using Videoconferencing** 2018-2022 $1,423,380 Final Report	**Purpose:** To determine the effect of a weekly video technology-enabled communication between acute hospital-based and skilled nursing facility (SNF)-based providers on improving care transitions, reducing lengths of stay, reducing adverse outcomes, preventing rehospitalizations, and reducing total healthcare costs. This intervention for vulnerable elderly Medicare beneficiaries replicated the ECHO-CT program on a larger scale in a tertiary and community-based hospital network of SNFs. **Key Findings/Impact:** There were no significant differences in pre and post 30-day hospital readmission rates in hospital-SNF dyads that participated in the ECHO-CT program compared with hospital-SNF dyads that did not. There were similar null findings for the SNF length of stay and 30-day SNF costs, with small, nonsignificant increases in length of stay and costs for both the community hospital and the teaching hospital. While this team previously showed that ECHO-CT had a beneficial impact on readmission rate, cost of care, and SNF length of stay, they could not replicate these results in the current study. More information about the previous study can be found on the AHRQ website. Of note, the present study was interrupted by the COVID-19 pandemic. Lack of adherence to the model may have resulted in less benefit than has been observed with other ECHO interventions. In addition, SNF participation was not as robust as investigators had hoped. **Publications:** 5
MICHIGAN		
John Hollingsworth **University of Michigan** Ann Arbor, Michigan	K08 HS20927 [Grant] **Effects of Physician Social Networks on Surgical Quality, Safety, and Costs** 2012-2016 $798,682 Final Report	**Purpose:** To test whether teamwork among physicians who provide care during a surgical episode is a determinant of surgical quality and costs. **Key Findings/Impact:** The research team observed substantial variation in the level of teamwork between health systems. While health systems with high and low teamwork levels treated beneficiaries with comparable comorbidity scores, these health systems differed over several sociocultural and healthcare capacity factors. After controlling for these differences, the grantee found that health systems with higher teamwork levels had significantly lower rates of emergency department visit, readmission, and mortality, as well as lower episode costs. **Publications:** 23

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Christopher Friese and Milisa Manojlovich **University of Michigan** Ann Arbor, Michigan	R01 HS24914 [Grant] **Communication Processes, Technology, and Patient Safety in Ambulatory Oncology Settings** 2016-2022 $1,424,646 Final Report	**Purpose:** To characterize clinician communication processes, communication technologies, and adverse patient events in a sample of ambulatory chemotherapy practices and examine how these practices and technologies influence safe chemotherapy administration. **Key Findings/Impact:** This study is among the first multisite, multiple-methods studies to examine the impact of communication processes and communication technologies on patient safety actions in ambulatory oncology practices—care settings that deliver high-risk and high-cost cancer treatments. Higher satisfaction with technology and higher quality clinician communication were associated with increased safety actions, whereas increased reliance on all-digital records was associated with lower safety actions. Treatment delays were attributed to care plan discrepancies and missing orders, uncommunicated day-of-treatment order changes, orders not signed in advance by physicians, and laboratory testing processes. Patient toxicity rates varied across practices. Toxicity severity and service use incidence exceeded previously published trial data, particularly for pain, fatigue, and gastrointestinal issues. These findings suggest that clearly defined roles and functions within the ambulatory oncology team as well as interventions to improve teamwork and communication in ambulatory oncology practices will facilitate more timely chemotherapy infusion delivery. **Publications:** 7
MINNESOTA		
Robert Kane **University of Minnesota, Twin Cities** Minneapolis, Minnesota	R13 HS16371 [Grant] **Using Clinical Guidelines To Improve the Care of Older Persons Conference** 2006-2007 $45,968	**Purpose:** To sponsor a conference to identify and recommend practical tools or strategies that will speed implementation of the best evidence-based practices that impact care for older adults. **Key Findings/Impact:** According to the final report, the 2006 Summer Institute was well attended (127 registrants, 9 speakers, and 6 staff members) and the evaluations reflected the importance and interest in the topic of clinical guidelines. The presentations were well received, averaging 4.11 on a scale of 5. In general, the participants found the learning objectives to have been met and found the applications to be useful to their practices. One program did not complete the quality improvement project. Staff judged three of the other projects as general or partial successes. The projects' self-assessments were more positive. In addition, several lessons were learned, and recommendations were documented for future conferences. **Publications:** 0
Diane Holland **Mayo Clinic - Rochester** Rochester, Minnesota	R03 HS22923 [Grant] **ESDP in Community Hospitals** 2014-2016 $99,999 Final Report	**Purpose:** To determine the predictive performance in a rural regional community hospital of a discharge planning decision support tool, the Early Screen for Discharge Planning (ESDP) (https://reference.medscape.com/calculator/339/mayo-early-screen-for-discharge-planning), developed in an urban academic medical center. **Key Findings/Impact:** More than half (51.8%) of the sample had a high ESDP score compared with 23.1 percent in a sample of patients in an academic medical center. Patients with high ESDP scores reported more problems after discharge ($p=0.02$), reported lower quality of life ($p<0.001$), had longer lengths of stay ($p=0.044$), and used postacute services ($p=0.006$) more than patients with low ESDP scores. The difference in the average percentage of unmet needs was not statistically significant ($p=0.12$), but patients with high ESDP scores reported more needs than those with low ESDP scores. These findings are consistent with ESDP results in an academic medical center. **Publications:** 1

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
	NEW YORK	
Manish Shah **University of Rochester** Rochester, New York	R01 HS18047 [Grant] **Evaluating Telemedicine for Acute Illnesses in Assisted Living Residences** 2010-2015 $1,802,264	**Purpose:** To develop and evaluate a telemedicine-enhanced care model to improve access to safe, high-quality, acute illness care; foster appropriate use of health services; and reduce unnecessary expenditures. **Key Findings/Impact:** Emergency department (ED) use decreased among intervention subjects at an annualized rate of 18 percent, whereas the control group showed no statistically significant change in ED use. Acceptability among patients and providers was high. Overall, the investigators found that the program was feasible and acceptable. They also found that it reduced ED visits, particularly among low-acuity conditions such as ambulatory care-sensitive conditions. The cost analysis was pending, but utilization findings indicated the program would be cost-efficient. In addition, this project produced a Geriatric Telemedicine Toolkit (https://www.dropbox.com/sh/7c66i2y7lj6b60s/AAD31KxKOqKNQVMVIcbDevc_a?e=1&dl=0). **Publications:** 7
	TENNESSEE	
Alan Storrow and James Blumstein **Vanderbilt University Medical Center** Nashville, Tennessee	R18 HS25931 [Grant] **Safely Improving Emergency Diagnostic Testing Through Clinical Safe Harbors** 2019-2024 $1,738,295	**Purpose:** To establish/define a predetermined standard of care (a "safe harbor") for a selected number of clinical conditions within the specialty of emergency medicine (EM) to reduce healthcare resource utilization within EM. **Key Findings/Impact:** This project ended March 31, 2024, and a final report is not yet available. It used a phased approach: • Phase 1 aimed to summon a broad group of technical experts and advisors to define safe harbors for a narrow set of distinct clinical conditions within EM. • Phase 2 aimed to advance the safe harbor demonstration to EM practitioners within Vanderbilt University Medical Center. • Phase 3 aimed to evaluate the demonstration and determine the effects of the safe harbor on clinical decision making, adverse event reporting, utilization, radiation exposure, patient satisfaction, and clinical outcomes. **Publications:** 1
	TEXAS	
Andrew Masica **Baylor Research Institute** Dallas, Texas	R18 HS21459 [Grant] **Implementing a Bundle for Intensive Care Unit Delirium: The IBID Project** 2012-2014 $587,421	**Purpose:** To implement a standardized set of ICU delirium care practices as a coordinated bundle (the ABCDE bundle) in three different hospital environments (tertiary, community, rural), while also performing a quantitative and qualitative evaluation of that implementation program and maximizing dissemination of study findings. Implementation results from the grant will inform ICU delirium bundle uptake efforts in a variety of care settings. **Key Findings/Impact:** 1. The creation of learning health systems is contingent on an ability to modify electronic health records (EHRs) to meet emerging care delivery and quality improvement needs. This study focused on prevention and mitigation of delirium in ICUs, but the process for identifying key data elements and modifying the EHR, as well as lessons learned from the information technology components of this program, are generalizable to other healthcare settings and conditions. 2. Although multifaceted care approaches may reduce delirium and improve patient outcomes, greater improvements may be achieved by deploying a comprehensive bundle of care practices, including awakening and breathing trials, delirium monitoring and treatment, and early mobility. Further research to address this knowledge gap is essential to providing best care for ICU patients. **Publications:** 3

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Philip Greilich **University of Texas Southwestern Medical Center** Dallas, Texas	R18 HS19989 [Grant] **Preventing/ Managing C. diff for Nursing Home Residents, Admissions, and Discharges** 2012-2013 $841,934 Final Report	**Purpose:** To investigate care of individuals with *C. difficile* in long-term care. **Key Findings/Impact:** The personal protective equipment scale showed adequate reliability. Failure in implementing the transfer form largely resulted from lack of history for record keeping concerning transfers. Labor costs were the major cost factor in caring for those with *C. difficile*. Analyses of hospital discharge data indicated individual patient characteristics were the main driver of *C. difficile* in the hospital. Analyses of Minimum Data Set data showed considerable usefulness in gaining information on drug-resistant infections in nursing homes. **Publications:** 1
Philip Greilich **University of Texas Southwestern Medical Center** Dallas, Texas	R13 HS27769 [Grant] **Handoff Effectiveness Research in Perioperative Environments (HERO) Collaborative Research Conference** 2021-2023 $50,000	**Purpose:** To align relevant stakeholders and develop and disseminate a perioperative handoff research agenda through specific aims. **Key Findings/Impact:** According to the final report, 110 individuals representing 43 organizations from academia, industry, professional societies, regulatory agencies, patient safety organizations, and funding agencies attended the HERO design workshop February 15-16, 2022. Major products from the workshop included a white paper summarizing current research on perioperative handoffs in the areas of intervention, design, measurement, and dissemination and implementation; identification and prioritization of 18 product prototypes to advance perioperative handoff safety; invitation to contribute to, edit, and publish a special issue on perioperative handoffs in the *Joint Commission Journal on Quality and Patient Safety* in August 2023. Other outcomes included preliminary planning to submit an AHRQ proposal for a Patient Safety Learning Laboratory on perioperative handovers and numerous cross-domain partnerships for collaboration in research, quality improvement, and implementation science. **Publications:** 10
UTAH		
Flory Nkoy **University of Utah** Salt Lake City, Utah	R18 HS18166 [Grant] **Organizational Factors Associated With Improved Inpatient Pediatric Asthma Care** 2010-2013 $844,300	**Purpose:** To evaluate the implementation of a pediatric asthma evidence-based care process model (EB-CPM) while disseminating the EB-CPM from an academic medical facility to Utah hospitals in urban and rural communities. **Key Findings/Impact:** According to the final report, EB-CPM was successfully implemented at one academic and seven community hospitals, resulting in improved care quality and outcomes but with increased indirect costs. Change in readmission was observed in the academic facility but not at community hospitals, possibly due to short followup after implementation. Further, researchers identified five key cross-cutting factors and multiple facilitators and barriers that should be addressed for general translation of asthma evidence to other hospitals. This project also led to the development of an innovative tool for use by parents for ongoing self-monitoring and self-management of their child's asthma control status, the Asthma Tracker or Asthma Symptom Tracker (AST). The AST is a reliable and valid tool and can be used to improve asthma care and reduce the risk of asthma readmission-related costs. **Publications:** 6

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
		WASHINGTON
Rachel Umoren **University of Washington** Seattle, Washington	R18 HS27259 [Grant] **Patient Safety Learning Laboratory To Enhance the Value and Safety of Neonatal Interfacility Transfers in a Regional Care Network** 2019-2023 $2,422,385	**Purpose:** To establish a Patient Safety Learning Laboratory to advance patient safety for critically ill newborns during medical ground or air transport from one hospital to another within a regional network. **Key Findings/Impact:** This project described neonatal transport trends and outcomes, including the parent experience; evaluated neonatal transport workflow; developed a neonatal transport discrete event simulation model; and evaluated novel tools for improving transport monitoring, communication, and safety documentation using simulation methods. Researchers identified and modeled the current and ideal state for neonatal interfacility transfers in a regional network. They also developed new protocols and systems, including a novel approach to monitoring and communication on neonatal transport to support the clinical workflow of the transport team. The new approaches proposed will promote the delivery of the right care, at the right price, in the right setting, from the right provider and support the development of customizable transport system models that other programs can apply to their own transport situations, including pediatric and adult emergency medical services transports. **Publications:** 5
		WISCONSIN
Korey Kennelty **University of Wisconsin - Madison** Madison, Wisconsin	R36 HS21984 [Grant] **Medication List Consistency When Patients Transition From Hospital to Community** 2012-2013 $39,458 Final Report	**Purpose:** To examine the agreement of medication lists for patients recently discharged from a hospital, focusing primarily on community pharmacy lists after the patient's first prescription fill; and describe barriers and facilitators community pharmacists face when reconciling medications for recently discharged patients. **Key Findings/Impact:** More than one-third (35.4%) of prescriptions were discrepant. Nearly 10 percent (9.7%) of discrepancies were classified as potentially harmful. The most frequent discrepancy was omission (18.1%). Eight community pharmacists cited time to perform medication reconciliations as the largest disadvantage for reconciling medications. **Publications:** 3
Barbara King **University of Wisconsin - Madison** Madison, Wisconsin	R01 HS26733 [Grant] **Preventing Hospital-Acquired Disability: An Intervention To Improve Older Adult Patient Ambulation** 2020-2025 $1,608,552	**Purpose:** Having a recent hospitalization and restricted activity were strongly associated with development of new functional impairment in older adults. To address and overcome barriers that prevent nurses from walking older patients, this study seeks to scale and determine the generalizability of the Mobilizing Older adults Via a systems-based Intervention (MOVIN) model. **Key Findings/Impact:** This project is ongoing until June 30, 2025, and a final report is not yet available. It plans to implement the MOVIN model across two new hospitals. MOVIN has shown statistically significant increases in patient ambulation and change in nursing practice and unit culture in a pilot study. **Publications:** 6
		UNKNOWN LOCATION
Unknown **Abt Associates, Inc.** Unknown	290-00-0003-3 [Contract] **Modeling Techniques for Transitions of Care in Integrated Delivery Systems** 2002-2003 $99,916	**Purpose:** To examine transition of care factors that contribute to risk and hazards associated with iatrogenic injury to patients as they pass through a series of complex subsystems of medical care. **Key Findings/Impact:** A final report for this project was not available. **Publications:** 0

Principal Investigator Organization City, State	Project Number [Type] Project Title Project Period Total Investment	Purpose, Key Findings/Impact, and Number of Publications
Unknown **DoD/Carl L. Darnell Army Medical Center** Unknown	08-622F-08 [Interagency Agreement] **Implementing Selected PIPS Toolkits** 2008 $300,000	**Purpose:** To implement the Emergency Department Pharmacist as a Safety Measure in Emergency Medicine—a Partnerships in Implementing Patient Safety [PIPS] toolkit developed under grant HS15818—in a large healthcare setting. **Key Findings/Impact:** No specific findings or results were publicly available for this implementation project funded by an IAA between AHRQ and the Department of Defense (DoD). If the pilots demonstrated improved patient outcomes, the military hospital system would implement the tools systemwide. The success of military experience with the PIPS toolkits would encourage other healthcare systems to explore the toolkits for their use. **Publications:** 0
Unknown **DoD/Madigan Army Medical Center** Unknown	08-625F-08 [Interagency Agreement] **Implementing Selected PIPS Toolkits** 2008 $310,000	**Purpose:** To demonstrate applicability of the Using Military Simulation To Improve Rural Obstetric Safety toolkit—a PIPS toolkit developed under grant U18 HS15800—in an Army medical center. Madigan Army Medical Center worked with rural, low-volume, and satellite facilities to determine if the intervention would help improve the safety of labor and delivery. **Key Findings/Impact:** No specific findings or results were publicly available for this implementation project funded by an IAA between AHRQ and DoD. A report outlined the successes and barriers of using the PIPS toolkit. If successful, the toolkit would be implemented broadly throughout the Army Medical System. **Publications:** 0
Unknown **DoD/Navy Medical Center San Diego** Unknown	08-628F-08 [Interagency Agreement] **Implementing PIPS: Safe-D(ischarge)** 2008 $140,000	**Purpose:** To implement the Patient Safe-D(ischarge) tool—a PIPS toolkit developed under grant U18 HS15882—in a Navy medical center in San Diego. The Patient Safe-D(ischarge) program uses standardized tools to educate patients about their discharge needs, test understanding of those needs, and improve medication reconciliation at admission and discharge. **Key Findings/Impact:** Information published by the U.S. Navy online in 2009 that is no longer available showed that after the program was implemented, the Naval Medical Center in San Diego reduced patient waiting time and improved patients' understanding of their medications and precautions. The process was screened and adjusted over a period of 3 months through random patient selection. Approximately 100 patient encounters were evaluated. Results showed that patients leaving the Internal Medicine Clinic with a clear and accurate understanding of their medication rose from 35 percent to 90 percent. All medication lists met the medication reconciliation standards set by the Joint Commission on Accreditation of Healthcare Organizations and reduced waiting time by approximately 5 minutes per patient. **Publications:** 0

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