ACTION III 2017 Project Summaries

Topic	Award	Cost	Page Number
Making Health Care Safer III (Patient Safety Practices Evidence Summary)	Abt	$1,428,295	2
Perinatal Safety Project With HRSA: AHRQ Safety Program in Perinatal Care (SPPC)-II Project	Johns Hopkins University	$353,221	6
Pediatric Quality Measures Program - Learning Collaborative (PQMP-LC)	Abt	$474,961	11
Literature Review of AHRQ Quality Indicators	American Institutes for Research	$542,764	14
Comprehensive Unit-based Safety Program (CUSP) To Reduce Central Line-Associated Blood Stream Infections (CLABSI) and Catheter-Associated Urinary Tract Infections (CAUTI) in Intensive Care Units (ICU) With Persistently Elevated Infection Rates (PEIRs)	Health Research & Educational Trust (HRET)	$9,649,946	17

ACTION III Project Summary: Making Health Care Safer (MHCS) III – An Updated Analysis and Summary of the Evidence for Patient Safety Practices

ACTION III Prime Contractor: Abt Associates

Principal Investigator/Project Lead and Project Director

- Project Director: Sarah Shoemaker, Ph.D., Pharm.D. (Abt Associates)
- Principal Investigator: Kendall Hall, M.D., M.S. (IMPAQ International)

Key Personnel and Subcontractors

- Subcontractor: IMPAQ International

Project Period: 9/18/2017–3/17/2019

Total Cost: $1,428,295

AHRQ Contracting Officer's Representative: David Rodrick, Ph.D.

Project Type: Research Synthesis

Project Purpose

This project is intended to update the previous Making Health Care Safer (MHCS) Report by reviewing and reporting on evidence of effectiveness of widely used and currently emerging patient safety practices (PSPs). The project also looks at factors important to the successful implementation and adoption of PSPs. Of interest, to the extent possible, are PSPs appropriate for different health care settings, such as acute care hospitals, rehabilitation hospitals, skilled nursing and long-term care facilities, primary care settings, and ambulatory surgery centers.

Objectives

- Review previous MHCS reports and select chapters for updates and identify need for new chapters.
- Conduct literature reviews.
- Produce MHCS III Final Report.

Background and Significance

In 2001, as part of its initial portfolio of patient safety activities, the Agency for Healthcare Research and Quality (AHRQ) issued a report analyzing the evidence behind a diverse group of PSPs that existed at that time. The report, *Making Health Care Safer: A Critical Analysis of Patient Safety Practices*, was well received and served an important role in reducing harm and improving safety and quality of care for patients. It was widely distributed and served as a single source of information for multiple stakeholders, including health care providers, researchers, government regulators, and patients.

The report also became a cornerstone of other efforts (such as the National Quality Forum's 34 "Safe Practices for Better Healthcare" list) to rank safety practices by strength of evidence. In 2013, AHRQ issued a followup report, *Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices* (https://www.ahrq.gov/research/findings/evidence-based-reports/ptsafetyuptp.html and https://www.ncbi.nlm.nih.gov/books/NBK133363/). This report was also widely studied and shaped a national discussion about patient safety issues on which providers, payers, and policymakers should focus attention.

Significance and Expected Impact

During the last 16 years, the safety field has matured; the number of patient safety research publications and findings has accelerated, and now, almost all health care delivery organizations list patient safety as a top priority. At the same time, the number of PSPs being developed, tested, and implemented across the health care spectrum has expanded and recognition of the importance of context in successful PSP implementation has increased.

Context has emerged as a variable to consider when determining which PSPs are feasible for a particular care setting since some PSPs are highly context dependent; that is, they work effectively in one health care setting but show less success with broad implementation initiatives. Since publication of the second Making Health Care Safer report, improvements in adverse events in the acute care setting have been reported (https://www.ahrq.gov/professionals/quality-patient-safety/pfp/index.html), suggesting that concerted efforts using PSPs can reduce patient harm and improve quality of care on a large scale.

Building on this success with PSPs in acute inpatient settings, and necessitated by the continued evolution of patient safety, AHRQ seeks to continue its support of patient safety by publishing a third report in this series. The Making Health Care Safer III report will be expanded to include PSPs for other care settings (including nursing homes, home care, and outpatient and ambulatory settings) and during care transitions. This report will also look to expand its scope to match emerging themes and strategic goals championed by the U.S. Department of Health and Human Services and to expand its audience to include patients and family members.

Target Audiences

This report is for multiple stakeholders, including health care providers, researchers, government regulators, and patients and their families.

Methods

- **Use of a Conceptual Framework.** A conceptual framework will guide the selection of PSPs. The conceptual framework is based on the patient's experience moving through the health care system across the various phases of health. The underlying state of the patient is wellness, with the patient experiencing acute conditions, chronic conditions, or end of life. The wellness state is included in the model to allow us to more easily expand the areas of quality that expand beyond patient safety, such as the diagnostic errors space, where practices may include screening and followup.

  As a patient moves through and interacts with the health care system, periods occur when the patient is exposed or vulnerable to potential harms, also known as the zone of

exposure. The zone of exposure can expand to include the primary setting, the transition, and the secondary setting. For example, for a patient who is acutely ill and hospitalized, develops sepsis, recovers, and is then discharged to a long-term care facility (LTCF), the zone of exposure includes the inpatient setting, the transition to the LTCF, and the LTCF itself.

The aim of the PSP is to prevent or mitigate the effects of inadvertent harm to a patient within the zone of exposure. This PSP is distinguished from improvements in other aspects of quality, for which the aim is to move the patient toward improved health.

Under this conceptual framework, PSPs will be grouped into sections, reflecting the various harm areas within the zone of exposure, such as:

- o   Medication Management Events.
- o   Infection-Related Harms.
- o   Nursing-Sensitive Events.
- o   Diagnostic Errors.
- o   Care Transitions.
- o   Cross-Cutting Topics (or Contextual Factors).

- **Identification and Prioritization of Harm Areas and Literature Reviews.** Harm areas for the MHCS III report will be identified by mapping the harm areas from the previous MHCS reports with harms identified from an environmental scan of patient safety sources, such as AHRQ's website, AHRQ's PSNet website, the Joint Commission's National Patient Safety Goals, and the National Quality Foundation. The project team will ask for input from the technical expert panel (TEP) and advisory group to prioritize the identified harm areas. Using this input, assigned chapter leads will conduct searches using guidelines, systematic reviews, and studies to identify PSPs for the prioritized harm areas. Again, the TEP and advisory group will be asked to provide input, this time into the prioritization of the identified PSPs. AHRQ will provide final approval of the PSP list, and then chapter leads will conduct literature reviews and create evidence tables for the PSPs.
- **Final Report.** Section writers will use the reviews and evidence tables to develop new and updated chapters presenting the literature reviews on PSPs. The report will also contain an executive summary describing the most effective PSPs that should be in widespread use in the various health care settings considered in the study. In addition, the summary will include findings and recommendations for areas of future patient safety research by AHRQ and other entities funding patient safety research. These recommendations will be based on the findings as to where more evidence is needed regarding the effectiveness of specific PSPs or how best to implement specific PSPs.

Project Settings

Project work will occur at Abt Associates and IMPAQ International, with their respective corporate home offices in Rockville, Maryland, and Bethesda, Maryland.

Key Tasks/Activities

- Develop a process for review and selection of existing and emerging PSPs appropriate for different health care settings.
- Convene an advisory group and technical expert panel.
- Using the process developed, review previous MHCS reports, select chapters for updates, and determine the need for new chapters.
- Create a master list of PSPs.
- Conduct literature review and create evidence tables: Chapter leads will conduct either an indepth review or brief review of the prioritized PSPs.
- Produce a final report: The final report will include the AHRQ-approved PSPs. Writers will be identified to draft the chapters.
- Produce a journal supplement.

Key Deliverables

- Final report
- Journal supplement

ACTION III Project Summary: Perinatal Safety Program With HRSA: AHRQ Safety Program in Perinatal Care (SPPC)-II
Project Planning Phase

ACTION III Prime Contractor: Johns Hopkins University

Principal Investigator/Project Lead/Project Director: Edith Gurewitsch Allen, Asad Latif, Renee Wilson

Additional Key Personnel and Subcontractors

- Andreea Creanga, M.D., Ph.D.
- Lilly Engineer, MD, Dr.P.H., M.H.A.
- Benjamin Kogutt, M.D.
- Philip Joslin
- Ayse Gurses, Ph.D.
- Michael Rosen, Ph.D.
- Andrew Satin, M.D.
- Jeanne Sheffield, M.D.
- Lauren Benishek, Ph.D.
- Meghan Walrath, B.A., M.A.

Project Period: 9/15/2017–9/15/2018

Base Period Cost: $353,221

AHRQ Contracting Officer's Representative: Brenda Harding

Project Type: Product Development (creation of tool, guidance, etc.)

Project Purpose

The purpose of this project is to coordinate national-level initiatives by integrating AHRQ's Safety Program in Perinatal Care (SPPC) with HRSA's Alliance for Innovation on Maternal Health (AIM) through the SPPC program. In addition, the project is intended to integrate key components of patient safety culture, teamwork, and communication.

Key Objectives

The key objectives of this first Project Planning Phase include:

- Identifying and using appropriate resources and expertise to inform the development of a revised "SPPC-II" toolkit, training materials, implementation plan, and evaluation plan;
- Establishing a stakeholder panel to provide guidance and feedback regarding SPPC-II planning and development;
- Creating a revised toolkit and training materials ("SPPC-II"), including patient safety culture, teamwork, and communication;

- Developing an implementation plan to support future implementation of the revised toolkit and training materials at selected AIM sites;
- Developing an evaluation plan that includes implementation, to understand the extent to which SPPC-II is being delivered as intended; and impact, to determine the effect of SPPC-II on teamwork, communication, safety culture, and maternal and newborn outcomes; and
- Developing a plan for field testing SPPC-II to examine feasibility and usability of the revised toolkit and training, identify challenges in implementation at diverse sites, and assess the ability to collect data elements needed to support evaluation.

Background and Significance

In the past 30 years, maternal mortality (MM) has been rising steadily from 7.2 per 100,000 live births in 1987 to 18.0 in 2014 (CDC, 2018, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-mortality-surveillance-system.htm). According to the Centers for Disease Control and Prevention (CDC), severe maternal morbidity (SMM) includes unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health. The rate of SMM rose from 49.5 per 10,000 delivery hospitalizations in 1993 to 144 in 2014, primarily driven by blood transfusions (CDC, 2017, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/severematernalmorbidity.html).

Although many political, economic, and social factors influence the status of maternal health in our country, a considerable proportion of SMM and MM is attributable to preventable harm and unintended consequences arising from trends in clinical practice and the system of delivering perinatal care. In fact, of the nearly 2 percent of U.S. births estimated to be affected by an adverse event, at least half are potentially preventable. Preventable adverse events that can occur on labor and delivery (L&D) units include medication errors, failure to identify and intervene under circumstances of maternal or fetal deterioration, and complications resulting from inappropriately used interventions. In addition to the harms suffered by mothers and their infants, adverse events can result in costly litigation and emotional distress among the health care team.

To date, AHRQ has funded a number of studies and demonstration projects in the area of perinatal safety, ranging from risk assessments to the creation of perinatal intervention bundles. Starting in 2011, AHRQ designed, implemented, and evaluated the Safety Program for Perinatal Care (SPPC) to advance efforts to improve the patient safety culture of L&D units and decrease maternal and neonatal adverse events.

The SPPC program's design and implementation included three pillars: teamwork and communication, perinatal safety bundles, and in situ simulations. This program extended AHRQ's TeamSTEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety) teamwork and communication platform and its Comprehensive Unit-based Safety Program (CUSP) to L&D units. The SPPC program provided hospitals with an approach to improve L&D units' patient safety culture and obstetric care processes to eliminate patient safety failures, which are causal factors of maternal and neonatal adverse events.

Meanwhile, the Health Resources and Services Administration (HRSA) has also actively supported efforts to reduce maternal morbidity, including the AIM initiative. AIM began in 2014

and was developed through a cooperative agreement with the American College of Obstetrics and Gynecologists (ACOG). Under this initiative, ACOG and HRSA work collaboratively with public, private, and professional organizations to improve pregnancy outcomes by assisting AIM State Teams to adopt and implement maternal safety bundles. ACOG also provides ongoing oversight and technical assistance to AIM State Teams. The AIM maternal safety bundles include:

- Treatment for obstetric hemorrhage,
- Treatment for severe hypertension during pregnancy,
- Safe reduction of primary cesarean sections,
- Prevention of venous thromboembolism, and
- Support to patients, family, and staff after a severe maternal adverse event.

AHRQ and HRSA now want to combine AHRQ's SPPC teamwork and communication components and in situ simulation pillars with the existing AIM maternal safety bundles and associated program infrastructure for broad-based implementation and dissemination of the integrated program across AIM sites. This integration is expected to occur in two phases. The first phase is the 9-month planning phase that is the subject of this task order. A second phase (Phase II) is envisioned to occur under a separately competed ACTION III Task Order upon completion of the first phase and will focus on field testing, implementing, and disseminating the integrated program across AIM sites.

Target Audiences

The target audiences for the immediate outputs of this project are AHRQ and HRSA. AHRQ and HRSA are expected to use key deliverables to support future testing, implementation, and dissemination of the integrated SPPC and AIM program to improve outcomes for pregnant woman and their newborn children.

Methods

- **Information Gathering.** The team will perform a literature review, conduct key informant interviews, and draw on the expertise of members of our technical expert panel to identify proposed revisions to the existing SPPC-II toolkit and training.
- **Development of the Implementation Plan.** In developing the implementation plan, the team will draw on their experience and lessons learned from previous national level work, such as On the CUSP: Stop Blood Stream Infections, CUSP for Mechanically Ventilated Patients, and ongoing work on CUSP for Enhanced Recovery After Surgery and CUSP for Antibiotic Stewardship projects. The team will leverage existing relationships with national, State, and subspecialty organizations and engage leading professional organizations, including the American College of Obstetricians and Gynecologists, American Board of Obstetrics & Gynecology, Society for Maternal Fetal Medicine, American College of Nurse Midwives, and Association of Women's Health Obstetric and Neonatal Nursing.

Key elements in the development of our implementation plan are expected to be:

- o Securing buy-in from HRSA and AIM leadership and minimizing the perception of the SPPC II program as a competing initiative to AIM, a challenge faced by the initial SPPC program evaluation.
- o Using a voluntary and opt-in approach to enrollment of institutions showing direct interest by writing emails and confirming interest with followup phone conversations with the project team.
- o Using a clinical community conceptual model to guide SPPC II implementation and sustainability.
- o Encouraging creation of a local project team to facilitate local implementation at the individual participating institution level.
- o Using both macro and micro implementation components. The macro component will be at the State level (e.g., enrolling an entire State) to get the Tier 2 (change team) training. The micro implementation will be training of the Tier 1 frontline staff at the labor and delivery unit level by the change team, with coaching of Tier 2 staff by the project team.

- **Development of the Evaluation Plan.** The evaluation plan will include an implementation evaluation and an impact evaluation. Our mixed-methods approach for the evaluation will build on the existing AIM program infrastructure and its existing data sources and is harmonized with existing AIM measurement and data collection.

  - o The implementation evaluation will focus on combining quantitative and qualitative data to create composite measures of overall program adoption (high fidelity versus low) and implementation effectiveness (effective versus not effective). Data elements to be evaluated for these composite measures include:

    - Successful implementation of one or more of the three pillars;
    - Site leadership engagement level;
    - Unit readiness to receive the intervention in terms of resources, including human resources;
    - Time commitments by leadership and unit staff to implement the program;
    - Favorable staff attitudes toward the program;
    - Favorable patient views and satisfaction with the program as implemented; and
    - Sustainability measures.

    These measures will be aggregated across sites and service units and used in multivariable quantitative analyses assessing associations with contextual factors, site characteristics, and presence of other quality initiatives.
  - o The impact evaluation will be designed to determine the effect of the integrated SPPC-AIM program on teamwork and communication, safety culture, and maternal and newborn health outcomes. Data sources for this evaluation are expected to include the following

    - For Safety Culture, the main sources of quantitative data are the *CUSP Team Checkup Tool* (which has 18 individual items across three domains:

knowledge/skills; attitudes/beliefs, and resources) and *AHRQ's Hospital Survey on Patient Safety Culture (*42 items that measure 12 areas of patient safety culture).

- For Adverse Events, outcome data will be collected for chosen AIM bundles. Measures to be used are widely used and endorsed by national organizations such as AHRQ, CDC, and the National Quality Forum. The data will come mainly from State hospital discharge databases and AIM's existing database system.

- **Development of Field Test Plan.** The team will use the conceptual framework of the Plan-Do-Study-Act (PDSA) cycle for the development of the field test plan.

Key Tasks/Activities

- Engage in targeted information gathering to inform revisions to development of SPPC-II toolkit and training.
- Establish, manage, and convene a stakeholder panel.
- Develop a revised integrated toolkit and training that crosswalks the pillars of SPPC's "adaptive bundle" (Teamwork and Communication [CUSP and TeamSTEPPS] and in situ simulations).
- Develop an SPPC-II implementation plan.
- Develop an evaluation plan.
- Develop a field test plan.
- Seek Office of Management and Budget clearance as required by the Paperwork Reduction Act.

Key Deliverables

- Targeted information gathering plan
- Report of findings and recommendations of targeted information gathering
- Integrated SPPC-II toolkit and training materials
- SPPC-II implementation plan
- SPPC-II evaluation plan
- Field test plan
- Multimedia enhancement toolkit
- Final project report

ACTION III Project Summary: Pediatric Quality Measures Program Learning Collaborative (PQMP-LC)

ACTION II Prime Contractor: Abt Associates

Project Director and Principal Investigator: Lisa LeRoy, Ph.D., Abt Associates, and Michael Rinke, M.D., Children's Hospital at Montefiore

Key Personnel and Subcontractors

- The Children's Hospital at Montefiore
- Amy Schwartz, Empathic Innovation

Project Period: 9/29/2017–9/28/2021

Total Cost: $1,899,860

AHRQ Contracting Officer's Representative: Anthony Freeman

Project Type: Implementation and Evaluation

Project Purpose

The purpose of this project is to provide research, implementation, and knowledge-sharing support to six pre-established, multi-stakeholder Pediatric Quality Measures Program (PQMP) grantee teams through the establishment of a Learning Collaborative (PQMP-LC). The goal of the PQMP-LC is to improve understanding of best practices for dissemination and implementation of quality measures to build capacity and sustainability for performance monitoring and quality improvement (QI) efforts within the Medicaid/Children's Health Insurance Program (CHIP) patient populations at the State, health plan, and provider levels.

Key Objectives

- Provide expert guidance and support to PQMP grantee partnership teams to enable them to meet their individually specified implementation and dissemination goals and to help them achieve their shared long-term goal of improving health care quality for children enrolled in Medicaid/CHIP.
- Establish and convene a virtual community of grantees and partners to support and accelerate communication, collaboration, and knowledge sharing across and between teams about effective methods for using, disseminating, and implementing pediatric quality measures (PQMs).
- Guide and support grantee teams with their efforts to implement PQMs through technical assistance to their QI projects.
- Develop materials and resources to promote broad dissemination and use of measures by public and private entities.
- Synthesize knowledge about facilitators, challenges, best practices, PQM implementation successes and challenges, dissemination of PQM outcomes, and impact at the individual grantee, affinity group, and PQMP-wide levels.

Background and Significance

The PQMP was formed in response to the Children's Health Insurance Program Reauthorization Act (CHIPRA) legislation of 2009 (CHIPRA Title IV, Sec. 401). The initial phase of the PQMP focused on developing new and enhanced pediatric measures to improve children's quality of care through cooperative agreement grants with the PQMP Centers of Excellence (COEs).

The second phase of the PQMP shifts the focus to disseminating and implementing the measures developed by the PQMP COEs. More specifically, the new phase of work will focus on disseminating and implementing selected PQMP COE measures and assessing their feasibility and usability at the State, health plan, and provider levels. This second phase of the PQMP was launched in October 2016 and is composed of cooperative agreements awarded to six grantee partnerships and funded by the Centers for Medicare & Medicaid Services (CMS).

Grantees are required to select a subset of the measures or measure developed in Phase 1 and field test and refine them. Grantees also are expected to use performance data generated by using the selected measures to define QI goals and test multilevel improvement strategies.

Under the terms of the cooperative agreements, the work performed under the grants was envisioned to be performed through a supported, collaborative learning model. This project will provide expertise, resources, and assistance needed to generate, synthesize, and disseminate knowledge within and across partnership teams and to other key stakeholders interested in advancing the use of pediatric quality measures to improve care for Medicaid/CHIP populations.

Overall, this effort is expected to build knowledge and evidence to support performance monitoring and quality improvement for children in Medicaid/CHIP by:

- Increasing the number of new measures being implemented and reported;
- Informing efforts to streamline data collection and reporting processes; and
- Supporting States in their efforts to use pediatric quality measures to drive improvement.

Target Audiences

This project has three main target audiences: (1) AHRQ PQMP grantees, (2) AHRQ and CMS policy leaders, and (3) users of pediatric quality measures (e.g., State Medicaid offices, health plans, and providers).

Methods

- Identify and articulate a set of specified goals and objectives for the PQMP-LC that are explicitly tied to the six Specific Areas of Research Interest and to the specific aims and methods of the individual grantee partnership teams.
- Develop a framework with an underlying logic model displaying inputs, outputs, and outcomes that emerge from the PQMP-LC to assess outcomes and impact of the PQMP.

In addition, learning collaborative methods include affinity group facilitation, technical assistance, in-person meetings, collaborative projects, and dissemination.

Key Tasks/Activities

- Produce conceptual framework and logic model.
- Conduct introductory interviews with grantees.
- Develop individual grantee-specific logic models.
- Conduct recurring leadership meetings.
- Facilitate affinity group communication.
- Host subject matter expert webinars.
- Provide overall technical assistance to grantees.
- Conduct an end-user stakeholder forum.
- Develop toolkits.
- Publish a journal supplement.

Key Deliverables

- PQMP-LC logic model
- Quarterly progress reports
- Annual report
- Final report
- Grantee toolkits
- Academic pediatric journal supplement

ACTION III Project Summary: Literature Review of AHRQ Quality Indicators

ACTION III Prime Contractor: American Institutes for Research

Principal Investigator: Steven Garfinkel, Ph.D.

Key Personnel and Subcontractors

- Lee Thompson, M.S., American Institutes for Research
- Rikki Mangrum, M.L.S., American Institutes for Research
- Ellen Schultz, M.S., American Institutes for Research
- Don Goldmann, M.D., Harvard Medical School
- Patrick Romano, M.D., University of California, Davis, School of Medicine

Project Period: 9/28/2017–12/31/2018

Total Cost: $542,764

AHRQ Contracting Officer's Representative: Maushami Desoto

Project Type: Information Synthesis and Recommendations

Project Purpose

The purpose of this task order is to systematically examine the scientific acceptability, feasibility, and usability of AHRQ Quality Indicators (QIs) in quality improvement programs.

Objectives

- Update existing knowledge base by conducting a literature review and environmental scan of the peer-reviewed and grey literature on each indicator in the four QI modules:

  o Prevention Quality Indicators (PQIs),
  o Inpatient Quality Indicators IQIs,
  o Patient Safety Indicators PSIs, and
  o Pediatric Indicators (PDIs).

- Conduct a Request for Information (RFI) to gather input from hospitals, clinicians, quality improvement experts, health services researchers, and measurement experts regarding the usefulness of AHRQ QIs for the purpose of quality improvement.
- Convene a workgroup comprising experts with relevant clinical and measurement expertise in areas such as patient safety, population health, pediatrics, and general quality improvement. The workgroup will provide input on the importance, validity, and reliability of QIs and the rationale for continued maintenance of each indicator as a quality improvement tool in the AHRQ QI program.
- Produce a final report summarizing and synthesizing the evidence from the literature review and environmental scan findings, RFI, and workgroup input obtained throughout

the project on the rationale for refining and retaining AHRQ QIs for the purpose of quality improvement.

Background and Significance

The AHRQ QIs are standardized, evidence-based measures of health care quality that can be used with readily available hospital inpatient administrative data to measure and track clinical performance and outcomes. The AHRQ QIs are reported at one of two levels: the provider level and the area level. Provider-level indicators are at the hospital level and provide measures of quality of hospital care. Area-level indicators capture all cases of potentially preventable hospitalizations that occur in a given area (e.g., metropolitan service area or county).

The area-level PQIs identify a geographic area's hospital admissions that might have been avoided through access to high-quality outpatient care. The PQI module reflects potentially preventable hospitalizations for "ambulatory care-sensitive conditions." These are conditions for which good outpatient care may prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.

The provider-level IQIs reflect quality of care inside hospitals, including inpatient mortality for medical conditions and surgical procedures. The IQI module reflects quality of hospital care for adults, focusing on potentially avoidable complications and iatrogenic events. The provider-level PSIs also reflect quality of care inside hospitals, focusing on complications and adverse events following surgeries, procedures, and childbirth.

The PDIs use indicators from the other three modules with adaptations for use among children and neonates to reflect quality of care inside hospitals (provider level), as well as geographic areas (area level). PDIs also can be used to identify potentially avoidable hospitalizations.

As the field of quality measurement and performance improvement has evolved, the use of AHRQ QIs has changed considerably. Thus, while originally developed to support quality improvement at the hospital and community levels, QIs now serve multiple additional purposes. These include:

- Research,
- Needs assessments for planning at the local, State, and national levels,
- Performance assessment,
- Private and public reporting, and
- Performance-based payment programs to incentivize performance improvement.

In this current context, where the purposes and methods of measurement continue to change, AHRQ is seeking updated information to inform its own planning and priority setting for future work in these areas. AHRQ hopes to use the information from this project to modernize the QI measure set as a whole and update the specifications of individual QIs to reflect current needs of the field for quality improvement measures.

Target Audiences

The primary audience for this work is AHRQ, as the findings will provide guidance for the program going forward. In addition, the work will benefit end users of the AHRQ QIs, particularly those using the measures for quality improvement initiatives.

Methods

- **Conduct environmental scan and literature review of grey and peer-reviewed literature:**

  o Use several Internet and literature search databases;
  o Enter abstracts produced by the search in an Endnote database;
  o Develop a taxonomy of relevant literature and inclusion/exclusion criteria;
  o Review articles and grey literature, and code included material in an NVivo database for analysis;
  o Publish a Request for Information in the *Federal Register*; and
  o Analyze comments as part of the NVivo coding and analysis.

- **Convene workgroup to review and interpret the findings and develop recommendations for AHRQ.** The workgroup will meet for 11 monthly meetings; recommendations will focus on actions needed to improve the value of the AHRQ QIs for quality improvement.

Key Tasks

- Conduct literature review and environmental scan; analyze results.
- Publish Request for Information; analyze results.
- Convene workgroup meetings (virtual).
- Produce final report.
- Produce white paper.

Expected Deliverables

- Report on literature review and environmental scan
- Synthesis report on RFI comments
- Final report
- White paper

ACTION III Project Summary: Comprehensive Unit-based Safety Program (CUSP) To Reduce Central Line-Associated Blood Stream Infections (CLABSI) and Catheter-Associated Urinary Tract Infections (CAUTI) in Intensive Care Units (ICU) With Persistently Elevated Infection Rates (PEIRs)

ACTION III Prime Contractor: Health Research & Educational Trust (HRET)

Project Lead and Project Director: Sue Collier and Louella Hung

Key Personnel and Subcontractors

- Marie Cleary-Fishman, B.S.N., M.S., M.B.A., CPHQ, HRET
- Mariana Lesher, M.S., HRET
- Norma Padrón, M.P.H., M.A., Ph.D., HRET
- Andrew Rolle, M.P.H., HRET
- Kristen Hayes, M.S., RNC-NIC, HRET
- Shelby Lassiter, RN, CPHQ, HRET
- University of Michigan (U of M)
- American Organization of Nurse Executives (AONE)
- Society for Critical Care Medicine (SCCM)
- Association for Professionals in Infection Control and Epidemiology (APIC)
- Deb Bohr, M.P.H.

Project Period: 9/29/2017–9/28/2021

Total Cost: $9,649,946

AHRQ Contracting Officer's Representative: Melissa Miller

Project Type: Product Development, Implementation and Dissemination

Project Purpose

This project is designed to reduce rates of CLABSI and CAUTI observed in ICUs with persistently elevated rates of these infections, by supporting implementation of CUSP, an effective method of reducing healthcare-associated infections (HAIs) developed with AHRQ support. This project will contribute to progress toward achieving the stated aims of the U.S. Department of Health and Human Services (HHS) National Action Plan to prevent HAIs. This project is a nationwide expansion of an earlier project that focused on HHS regions 2, 4, 6, and 9.

Objectives

- Use the resources and materials for CUSP for CLABSI and CUSP for CAUTI that have been developed as part of earlier contract work to reduce two common and problematic HAIs (CLABSI and CAUTI) in 450 to 600 ICUs in which rates of these infections have been persistently elevated.

- Revise or augment existing resources and materials for CUSP for CLABSI and CUSP for CAUTI as needed.
- Assess current participating unit status and quantify improvements over time among participating units.

Background and Significance

It is estimated that CAUTIs affect approximately 250,000 hospital patients per year, and approximately 40,000 CLABSI cases occur annually with a mortality rate from 12 to 25 percent. While there have been nationwide CUSP for CAUTI and CUSP for CLABSI projects, this project attempts to address the fact that ICUs in the CUSP for CAUTI project did not achieve significant rate reductions and that not all ICUs in in the CUSP for CLABSI project achieved rate reductions. In addition, not all ICUs participated in those projects and a significant number of institutions and ICUs continue to have persistently elevated infection rates.

This project expands on the AHRQ Safety Program for ICUs: Preventing CLABSI and CAUTI, in which 299 ICUs from four HHS regions (2, 4, 6, and 9) participated. This project will nationally expand the AHRQ Safety Program for ICUs, initially targeting the remaining six HHS regions and allowing broad inclusion of eligible ICUs from all HHS regions in later cohorts.

Target Audiences

This project targets improvement efforts in ICUs whose rates of CLABSI and CAUTI remain elevated above the standardized infection ratio. Ultimate beneficiaries will be ICU patients.

Project Settings

This quality improvement project will be conducted in hospital ICUs in all 10 HHS regions.

Methods

- **Site Identification and Recruitment.** For the initial two cohorts of this project, AHRQ and HRET, in collaboration with the Centers for Disease Control and Prevention (CDC), will focus on recruitment of ICUs in HHS regions 1, 3, 5, 7, 8, and 10 that meet predefined criteria for persistently elevated infection rates. In later cohorts, the project will recruit from all 10 HHS regions.
- **Assessment, Onboarding, and Action Plans.** Participating ICUs will be assessed to determine their strengths and opportunities for improving ICU processes, procedures, and safety culture. A series of onboarding events will prepare teams to successfully implement the project. Each unit will complete an action plan to note areas to focus on and project resources to be used. The action plan will be used to coach units and monitor progress and will inform internal unit discussions about strengths and opportunities associated with building a culture of safety.
- **Coaching, Training, and Education.** The coaching model for implementing this project involves advising from the HRET project team and regular coaching touch points with contracted State Hospital Association Leads, clinical mentors, and project faculty. Coaches will use the resources and materials for CUSP for CLABSI and CUSP for CAUTI that have been developed as part of earlier contract work, revising or augmenting as needed.

Units will access a combination of on-demand content and live web meetings throughout the project, and some will receive site visits from coaches. Specific education and training content will be assigned to units to view based on ICU assessment results, the ICU action plan, and information from coaching touch points. The curriculum takes into consideration the different needs and resources of ICUs and hospitals. Also, in accordance with the diffusion of innovation theory, the curriculum begins by establishing foundational components that support infection prevention in an ICU before providing technical and adaptive content for prevention of targeted HAIs.

- **Data Collection and Analysis.** Units will confer rights to their CDC National Healthcare Safety Network (NHSN) data to the national project for outcomes and process measure collection. The national project team will use the following outcome, process, and descriptive data to quantify improvements over time among participating units and to evaluate the success of this program in reducing CAUTI and or CLABSI rates in participating ICUs:

  o Outcome measures:

    - Rate of CAUTIs
    - Rate of CLABSIs

  o Device utilization measures/device prevalence: (catheter and central line days per patient days)

    - Total patient days
    - Total catheter days
    - Total central line days

  Descriptive measures will be used during final program analyses to inform analyses of characteristics potentially associated with unit-level outcome changes. Within the context of epidemiological modeling, these characteristics may be relevant explanatory variables against outcome changes.

Key Tasks/Activities

- Revise and augment current CUSP training resources and materials for CUSP for CLABSI and CAUTI in ICUs with persistently elevated rates. The resulting toolkit is intended for use in ICUs whose infection rates for either or both of these HAIs are persistently elevated compared with other ICUs.
- Recruit 450 to 600 ICUs with persistently elevated rates nationally, with at least 50 units recruited and actively participating per HHS region not included in the previous contract.
- Work with existing State or regional consortia efforts and quality improvement collaboratives such as organizations that have been designated as Hospital Improvement Innovation Networks (HIINs) sponsored by CMS to implement use of CUSP training resources and materials in recruited sites.
- Design and execute an evaluation of the implementation of CUSP in reducing CLABSI and CAUTI infections in ICUs with persistently elevated rates.

Key Deliverables

- Work plan
- TEP meeting report
- Toolkit revision/augmentation plan
- Revised toolkit
- Recruitment plan
- Implementation plan
- Regional operating plans
- Sustainability plan
- Plan for virtual faculty
- Master trainers/change agent meeting reports
- Data collection protocol
- Regional coordinators/stakeholder meeting report
- Evaluation plan