ACTION III 2019 Project Summaries

Agency for Healthcare Research and Quality

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ACTION III Project Summary: Implementing PCOR To Increase Referral, Enrollment, and Retention in Cardiac Rehabilitation Through Automatic Referral With Liaison

ACTION III Prime Contractor: Abt Associates.

Project Director: Cynthia Klein, Ph.D., Abt Associates

Principal Investigator: Hicham Skali, M.D., Brigham and Women's Hospital

Subcontractors

- Crosby Marketing Communications
- Health Research and Educational Trust
- WomenHeart

Project Period: 3/13/2019–3/12/2022

Total Cost: $5,999,306

AHRQ Contracting Officer's Representative: Dina Moss

Project Purpose, Goals, and Objectives

The primary goal of this task order is to support hospitals nationwide in increasing referral, enrollment, and retention in cardiac rehabilitation (CR) through the implementation of automatic referral with care coordination. Additional goals are to increase and disseminate knowledge that can inform future efforts to increase referral, enrollment, and retention in CR and to inform efforts to effectively disseminate and implement other evidence-based care improvement strategies emerging from patient-centered outcomes research (PCOR).

Specific objectives include:

1. Creating a dedicated, publicly accessible web platform to raise awareness nationwide of underuse of CR and resources and strategies to increase CR participation.
2. Providing training, coaching, and technical assistance to 100 hospitals to support their implementation of evidence-based strategies to increase CR participation.
3. Establishing and facilitating a learning community (LC) for up to 200 hospitals to support peer-to-peer knowledge about effective strategies for overcoming known barriers to CR participation. A particular focus will be reaching underserved populations and reducing known disparities in referral and retention (e.g., by sex, socioeconomic status, race/ethnicity).
4. Using knowledge gained to update and enhance available resources for increasing CR participation.
5. Designing and conducting an evaluation.

Background and Significance

Each year, approximately 965,000 individuals will have a coronary event, and more than 30 percent of events are recurrences.[1] CR after a coronary event is a multifaceted medically supervised program with several core components, including education, exercise training, and psychological support. The program is designed to help patients return to an active lifestyle and recover more quickly.

Research suggests that CR reduces cardiovascular mortality by nearly 30 percent and risk of hospital admissions by 31 percent, as well as improving health-related quality of life.[2] Some estimates suggest that increasing CR utilization to 70 percent would result in nearly 25,000 lives saved annually and roughly 180,000 hospitalizations prevented over 1 year.[3]

Given the evidence to support CR, AHRQ is partnering with the Centers for Disease Control and Prevention (CDC) to disseminate and implement evidence-based strategies for increasing CR participation. This effort is in conjunction with AHRQ's broader mandate to support implementation of PCOR into healthcare practice.

Specifically, with this project, AHRQ seeks to advance the efforts of the CDC-sponsored Million Hearts Cardiac Care Collaborative toward meeting the stated goal of 70 percent participation nationally in CR by 2022. This project will help hospitals implement strategies highlighted in the Cardiac Rehabilitation Change Package (CRCP) developed by MillionHearts/American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR). The CRCP provides guidance to quality improvement teams from hospitals and CR programs for putting systems, processes, and strategies in place to promote improved care for more patients.

Target Audiences

CR implementation team, cardiologists, cardiovascular surgeons and nurses, care coordinators, discharge planners, hospital leadership, care coordinators, CR participants/graduates, cardiology champions/leaders.

Methods and Key Tasks

- **Create and maintain a website** to raise awareness and demonstrate value of life-saving benefits of CR; promote existing resources on CR referral, enrollment, and retention; and house education and training materials and other resources developed through the project. An environmental scan will be conducted in the first year and updated regularly to capture relevant resources that will be housed in the resource library on the website.
- **Recruit 100 hospitals and health systems ("partner hospitals [PHs]")** to receive online training, coaching, and technical support in implementing two strategies that have been shown to increase CR participation: use of electronic health record-based automatic referral with an opt out option and use of a care coordinator. In addition to online training and individual technical assistance and coaching, the PHs will be expected to participate in monthly discussions with their peers to share knowledge and lessons learned.
- **Develop a set of online training modules and associated educational materials for hospitals** that provide concrete guidance on how to implement a quality improvement-driven approach to implementing automatic referral with care coordination. Implementation guidance will draw heavily on the Million Hearts/AACVPR Change Package that was created

to help hospitals increase CR participation for their eligible patients. Online trainings will use experts from the field to provide instruction and will be posted on the project website.

- **Establish and facilitate a learning community** for up to 200 additional hospitals to exchange information about strategies beyond automatic referral with care coordination to address known challenges to, and disparities in, participation in CR.
- Use knowledge gained from the PHs and LC to **update and enhance available resources** for hospitals interested in increasing referral, enrollment, and retention in CR.
- **Conduct an evaluation** to assess the extent and effectiveness of the dissemination and implementation efforts and measure changes in CR referral, enrollment, and retention based on available data.
- **Establish a technical expert panel (TEP)** to provide guidance on all aspects of the project. The TEP will advise on the technical approach; promote hospital recruitment and awareness building; review and provide input on materials and evaluation activities; and serve as conduits to personal CR networks and share information.

Project Settings

Hospitals and healthcare systems with broad geographic representation that serve diverse patient populations from urban, rural, and suburban communities.

Key Deliverables

- Website
- Recruitment plan
- Environmental scan
- Training modules and implementation guides
- Evaluation plan and final report

References

1. Mozaffarian D, Benjamin EJ, Go AS, et al.; American Heart Association Statistics Committee; Stroke Statistics Subcommittee. Heart disease and stroke statistics-2016 update: A report from the American Heart Association. Circulation 2016;133(4):e38-360. https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000000350?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub%3Dpubmed&. Accessed May 20, 2020.
2. Anderson L, Oldridge N, Thompson DR, Zwisler AD, Rees K, Martin N, Taylor RS. Exercise-based cardiac rehabilitation for coronary heart disease: Cochrane systematic review and meta-analysis. .J Am Coll Cardiol 2016;67(1):1-12. https://www.ncbi.nlm.nih.gov/pubmed/26764059. Accessed May 20, 2020.
3. Ades PA, Keteyian SJ, Wright JS, Hamm LF, Lui K, Newlin K, Shepard DS, Thomas RJ. Increasing cardiac rehabilitation participation from 20% to 70%: a road map from the Million Hearts Cardiac Rehabilitation Collaborative. Mayo Clin Proc 2017;92(2):234-42. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5292280/. Accessed May 20, 2020.

ACTION III Project Summary: Managing Unhealthy Alcohol Use in Primary Care

ACTION III Prime Contractor: NORC at the University of Chicago

Principal Investigator/Project Lead and Project Director: Tracy McPherson, Ph.D., NORC, at the University of Chicago

Key Personnel and Subcontractors

- Senior Advisor: Paul Seale, M.D., Navicent Family Medicine
- American Academy of Addiction Psychiatry
- National Council for Behavioral Health

Project Period: 8/12/2019–8/11/2023

Total Cost: $2,430,014

AHRQ Contracting Officer's Representative: Marian James, Ph.D., M.A.

Project Purpose and Objectives

The purpose of this project is to advance AHRQ efforts to promote a patient-centered healthcare system that integrates behavioral health into primary care. More specifically, the objectives of this task order are to:

- Support a set of six AHRQ grantees that will be working with up to 750 primary care practices to implement evidence-based strategies to increase screening, management, and treatment of unhealthy alcohol use, including screening and brief intervention (SBI) and medication-assisted therapies (MAT).
- Conduct a rigorous, mixed-methods, multisite evaluation of the grantee efforts, including recruitment and retention, effectiveness of dissemination and implementation, and sustainability.

Background and Significance

Unhealthy alcohol use, which affects approximately 30 percent of adults, is the third leading cause of preventable death. It is associated with a wide range of adverse consequences related to physical and mental health (e.g., neurological damage, cardiovascular disease, liver disease, and depression) and injuries (e.g., due to motor vehicle crashes, falls, and drowning). In addition, unhealthy alcohol use can lead to negative social outcomes (e.g., intimate partner violence and child neglect) and economic problems (e.g., unemployment and poverty).

Despite the serious public health impact of unhealthy alcohol use and the demonstrated effectiveness of SBI and MAT, rates of screening, brief intervention, and treatment are low in primary care settings. A number of barriers inhibit managing unhealthy alcohol use in primary care, including:

- Stigma when seeking care,
- Clinicians' and patients' lack of knowledge about brief interventions and pharmacologic treatment options,
- Limited availability of clinical decision support systems,
- Limited shared decision-making tools to engage patients and elicit their treatment preferences,
- Limited capacity for referral and treatment, and
- Lack of insurance coverage for alcohol use disorder (AUD) medications.

Overcoming these barriers in primary care is challenging but supporting the use of a stepped approach to identifying and managing unhealthy alcohol use in primary care could have a significant positive impact on drinking behaviors and alcohol-related health outcomes. Screening all adults, conducting brief intervention with patients with unhealthy alcohol use, initiating treatment in primary care for patients with mild to moderate AUD, and referring patients to treatment when appropriate are approaches to evidence-based models of care.

This 4-year initiative seeks to support dissemination and implementation of evidence-based SBI and MAT resources. It will increase primary care practices' access to evidence-based implementation practices and identify factors that facilitate their rapid uptake and thorough implementation. Throughout the initiative, the implementation of screening, brief intervention, and treatment best practices has the potential to affect up to 750 primary care practices (125 recruited by each grantee) and the patients receiving services at those practices.

Target Audiences

The six grantees are the primary audience and users of the products that will be developed for this initiative. The secondary audience and users of the products will be the primary care providers recruited by the grantees. The ultimate beneficiaries of actions taken by AHRQ, their grantees, and participating practices are patients with unhealthy alcohol use or AUD who receive intervention and treatment services in primary care. AHRQ and NORC will work to disseminate the most impactful findings and communicate them both via the learning community for grantees and to a broader audience (e.g. clinicians, individuals engaged in quality improvement, and professional organizations).

Project Settings

Six grantee sites from across the United States have been selected to participate in this initiative. Each grantee will be responsible for recruiting a minimum of 125 primary care practices from across their State or other specified region to participate in implementation and evaluation.

Methods and Key Tasks

To achieve the project goals, the contractor will (1) establish and manage a Resource Center for Primary Care Integration of SBI and MAT and (2) use the Consolidated Framework for Implementation Research to design and execute a rigorous, mixed-methods, multisite evaluation. In support of the resource center, the project team will:

- Convene a technical expert panel to provide insight and guidance, including helping to identify the current challenges in implementing SBI, referral, and treatment for unhealthy alcohol use; advising on ways to engage and support the grantees via the resource center; facilitating a community of sharing and peer-to-peer learning among the grantees; and reviewing the cross-grantee evaluation approach.
- Conduct an environmental scan to identify sources of SBI and MAT materials from the peer-reviewed and grey literature and update and summarize the results of the scan semiannually.
- Develop a searchable, database-style resource of materials for dissemination to the grantees and the broader public, including by posting the database on the AHRQ-supported Academy website for integrating behavioral health into primary care.
- Establish and facilitate a learning community to (1) foster collaboration among grantees through a single organized venue for exchanging materials and ideas; (2) facilitate communication between AHRQ, NORC, and grantees, including notifications of webinars, workshops, and workgroups; and (3) share and disseminate resources among grantees.
- Produce a white paper to contextualize the environmental scan and implementation findings and provide a vehicle for thought leadership from experts related to areas for research and future investment.
- Develop communication materials to disseminate lessons learned and raise awareness of resource center activities and evaluation findings, and work with grantees and AHRQ to identify the type of materials that will be most useful to the broader stakeholder community.

In support of the mixed-methods, multisite evaluation, the team will:

- Design and conduct a formative, summative, and impact evaluation of grantees' strategies for increasing SBI and MAT by collecting qualitative and quantitative data from document reviews, key informant interviews, practice surveys, and quantitative practice-level data reported by the grantees.
- Work with the grantees to establish trust and shared goals, enable opportunities for grantees to provide information and plans for implementation and evaluation, and discuss harmonization of data measures to reduce burden and duplication of evaluation efforts.
- Prepare a final report that summarizes all evaluation activities and findings associated with increasing SBI and MAT in primary care practices, as well as lessons learned and recommendations for future research.
- Disseminate the project findings through quarterly reports and at the end of the initiative through infographics, PowerPoint presentations, posters, and a manuscript in collaboration with grantees and AHRQ to reach policymakers and researchers.

Key Deliverables

- Environmental scan report
- Evaluation plan
- Online database
- Webinars for learning community
- White paper
- Final project report

ACTION III Project Summary: Diagnostic Safety Capacity Building

ACTION III Prime Contractor: MedStar Health

Co-Project Directors: Christine Goeschel, Sc.D., M.P.A., M.P.S. RN, FAAN; Hardeep Singh, M.D., M.P.H.

Key Personnel and Subcontractors

- Key Personnel:
    - Kelly M. Smith, Ph.D.
    - Deliya Wesley Ph.D.
    - Kristen Miller, Dr.P.H., CPPS
    - Katie Carlin, M.B.A.
    - Traber Davis Giardina, Ph.D., M.S.W.
    - Andrea Bradford, Ph.D.
    - Daniel R. Murphy, M.D., M.B.A.
- Subcontractors:
    - Baylor College of Medicine
    - Clinical Directors Network (CDN)
    - National Nurse-Led Care Consortium (NNCC)

Project Period: 9/23/2019–9/22/2024

Total Cost: $8,697,347

AHRQ Contracting Officer's Representative: Margie Shofer

Project Purpose, Goals, and Objectives

The purpose of this task order is to provide program support and expertise related to improving diagnostic safety and quality on several different tasks, including:

1. Providing logistical and other meeting support for the Federal Interagency Workgroup on Improving Diagnostic Safety and Quality in Health Care.
2. Writing papers on specific diagnostic safety topics to include developing program briefs and syntheses of funded diagnostic safety grants.
3. Developing, implementing, pilot testing, and promoting a TeamSTEPPS® module to improve communication among providers related to diagnosis.
4. Developing, implementing, pilot testing, and promoting a resource to engage patients and families in the diagnostic process in order to reduce diagnostic errors.
5. Developing, implementing, pilot testing, and promoting a resource (e.g., toolkit, improvement guide) that will address one or more failures in the diagnostic process.

Background and Significance

In 2015, The National Academies of Sciences, Engineering, and Medicine (NASEM) released Improving Diagnosis in Health Care, which found that "diagnosis—and, in particular, the occurrence of diagnostic errors—has been largely unappreciated in efforts to improve the quality and safety of health care."

More specifically, this report indicated that every individual is likely to suffer a diagnostic error in his or her life, some with devastating consequences. For example, from 2012 to 2016, nearly 400,000 medical liability cases, representing about 30 percent of U.S. medical professional liability claims, reflected $1.6 billion of incurred losses from more than 5,800 diagnosis-related cases (refer to CRICO's Comparative Benchmarking System).).

These numbers represent the tip of the iceberg, since most diagnostic mishaps do not result in claims. Diagnostic errors are particularly difficult to quantify, because diagnostic process breakdowns are challenging to identify, measure, and improve. Moreover, determining a diagnosis begins with uncertainty and typically evolves across multiple episodes of care. Diagnostic errors most directly affect patients, but they also weigh heavily on providers (the literature on the relationship between diagnostic error and clinician burnout is just beginning to emerge) and on the healthcare industry writ large via direct and indirect costs.

The report outlined eight recommendations to improve diagnosis, two of which are particularly relevant to AHRQ's work: (1) "Provide dedicated funding for research on the diagnostic process and diagnostic errors"; and (2) "Develop and deploy approaches to identify, learn from, and reduce diagnostic errors and near misses in clinical practice." This task order supports AHRQ in responding to this charge, by further developing capacity related to understanding and addressing opportunities to improve diagnostic safety.

Methods

Within a 2-year base-period, the project team, informed by international subject matter experts, will bring to bear decades of research in the areas of cognitive science, informatics, patient and family engagement, healthcare operations, human factors, and social science to inform the best opportunities to build diagnostic capacity. Working collaboratively with AHRQ and subject matter experts (including patients) as resource co-developers, the project team will rapidly and iteratively design, pilot test, and disseminate pragmatic resources to improve diagnosis.

Impact will be achieved via the dissemination and use of developed tools among healthcare providers, teams, and systems, as well as feedback from end users. Resources will include up to nine papers on diagnostic safety topics, a TeamSTEPPS module to improve communication among providers related to diagnosis, a resource to engage patients and families in the diagnostic process, and a resource that will address one or more failures in the diagnostic process.

Target Audiences

Materials emerging from this task order will assist providers in improving diagnostic processes and reducing the risk of harm to their patients**.**

Key Tasks

- **Environmental Scan:** We will conduct a scoping review to scan the peer-reviewed and grey literature, targeting the identification of materials, tools, approaches, and toolkits that may mitigate failures in the diagnostic process. Stakeholders will be engaged in refining the research questions, identifying resources, and prioritizing the evidence synthesized in the scan.
- **Resource Co-Design:** The project team will develop a resource (e.g., toolkit, improvement guide) for providers that will address one or more failures in the diagnostic process and a resource to engage patients and families in the diagnostic process to reduce diagnostic errors. In addition, the team will develop a TeamSTEPPS module to improve communication among providers related to diagnosis.

  Resources may include implementation guidance; a training toolkit that may include videos, cases, and role play opportunities for use in team meetings or as inservices; and patient-facing materials, such as posters, pocket references, and fact sheets using appropriate graphics to convey meaning for low-literacy populations. Targeted implementation approaches are key for busy practices and opportunities to adapt to local context are needed. During co-design, evaluation will focus on usability and implementation barriers and facilitators.
- **Pilot Test:** To help us understand the feasibility of implementing and using the identified resources within primary care sites, selected sites will implement the full or partial toolkit (for multicomponent toolkits) over 3 to 6 months. Practices will be purposively selected to ensure diversity of geography, patient characteristics, resources, location (urban, rural, suburban), and size (small, medium, large).
- **Dissemination and Promotion:** For each resource, the team will conduct two webinars during the base period and each optional period in partnership with national organizations and our partners, present at two national conferences, and submit abstracts for poster presentation based at targeted venues.

Project Settings

Primary care practices from MedStar (MD, DC), Baylor (TX), CDN (17 U.S. States), and NNCC (50 U.S. States and DC) will be recruited to participate in the pilot testing.

Key Deliverables

- Resource Promotion Plan
- Papers on Diagnostic Safety
- TeamSTEPPS Module
- Patient and Family Engagement Resource
- Resource to Address Failures in Diagnostic Process

ACTION III Project Summary: Development of a Toolkit for Decolonization of Hospital Non-ICU Patients With Indwelling Devices–Based on the ABATE Infection Trial Protocol

Prime Contractor: Johns Hopkins University (JHU)

Co-Principal Investigators/Project Leads and Project Directors: Jonathan Zenilman and Henry Michtalik

Key Personnel and Subcontractors

- University of California, Irvine
    - Susan Huang, M.D., M.P.H.
    - Lauren Heim, M.P.H.
- JHU
    - Jill Marsteller, Ph.D., M.P.P.
    - Mohammad Naqibuddin, M.D., M.B.B.S., M.P.H.
    - Maria Sheilla Membrebe, M.S.N./E.D., RN
    - Kerri Huber, Ed.D., M.S.N., RN
    - Anping Xie, Ph.D.
    - Monica Dutta, B.S.

Project Period: 9/2019 – 9/2020

Total Cost: $499,695

AHRQ Task Order Officer: Darryl Gray MD, ScD, FACC, FAHA

Project Purpose, Goals, and Objectives

The goal of this project is to disseminate decolonization as a best practice and to educate hospital staff in preventing infections in non-intensive care unit (ICU) settings for adult patients with certain indwelling devices (central venous catheters, midline venous catheters, and lumbar drains). Specifically, the contractor will develop and pilot test a toolkit to help hospitals reduce methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococcus (VRE) clinical cultures and all-cause bloodstream infections in non-ICU patients with these devices.

The toolkit will be based on evidence from the ABATE (**A**ctive **BAT**hing to **E**liminate) Infection Trial. That project evaluated the reduction in infection risk associated with use of chlorhexidine (CHG) baths in all adult non-ICU patients, combined with nasal decolonization in MRSA-colonized adult non-ICU patients.

Key project objectives include:

- To produce a toolkit that synthesizes the ABATE Infection Trial experience and includes written, electronic, and video components.
- To assess the usability of this toolkit at nine pilot hospital sites and to revise the written and electronic toolkit materials accordingly.

Background and Significance

Healthcare-associated infections (HAIs) are a worldwide problem that causes high morbidity, mortality, and healthcare costs. Major HAI pathogens include MRSA and VRE. Key patient characteristics associated with HAIs include high prevalence of the use of indwelling devices, prolonged and continual exposure to the hospital environment, increased severity of illness, and high rates of antibiotic use.

Most HAIs are preventable. An emerging prevention strategy is decolonization, since vulnerable patients are at higher risk for being colonized by MRSA and VRE, and are at higher risk for subsequent clinical infection.

Initial decolonization interventions focused on ICU settings. Foundational studies and clinical trials found that universal decolonization programs in ICU settings significantly reduced HAIs. These findings led to the ABATE Infection Trial, which evaluated whether the findings were translatable to non-ICU hospital settings.

The ABATE Infection Trial found no significant effect of decolonization on overall outcomes. However, subset analyses showed a substantial and significant benefit in patients with central venous catheters (including port-a-caths and temporary dialysis lines), midline venous catheters, and lumbar drains. Therefore, AHRQ requested development of materials that describe and disseminate decolonization as a best practice and that educate hospital staff in preventing infections in non-ICU settings among patients with these devices.

The key knowledge transfer and implementation elements used in the ABATE Infection Trial will be used to achieve three main goals:

1. Describe a protocol hospital leaders may want to adopt for infection prevention. This description will provide a rationale and a high-level business case meaningful to this audience.
2. Provide user-friendly step-by-step tools that ultimately enable hospitals to adopt decolonization as part of routine operations for non-ICU patients with the indwelling medical devices of interest. Tools may include a toolkit, video, adoption metrics, and guidance for operational aspects and implementation in non-ICU care settings.
3. Enhance operational execution of the protocol. As part of the toolkit development process, the contractor will receive feedback from nine points of contact at the pilot sites and incorporate it accordingly to maximize usability of the toolkit.

Target Audiences

The intended users of the toolkit are (1) hospitals that seek to adopt decolonization for non-ICU patients with indwelling devices and (2) frontline staff, who will use the step-by-step tools (toolkit, video, adoption metrics, and guidance for operational aspects and implementation in non-ICU care settings). The ultimate beneficiaries are patients with the medical devices evaluated in the original ABATE Infection Trial.

Methods

To achieve the goals, the project team will join with original ABATE Infection Trial investigators and toolkit developers to develop and pilot test an ABATE toolkit in a network of diverse potential pilot hospital sites. The team will include Johns Hopkins/Armstrong Institute clinicians, researchers, infectious disease investigators, and experts in toolkit development and evaluation. Potential pilot sites will be chosen from the Johns Hopkins Clinical Research Network, the University Hospitals Health System, and members of the Society for Healthcare Epidemiology of America.

The project team will outline the design of a modified ABATE Infection Trial implementation toolkit for decolonization of non-ICU patients with the indwelling devices in which the ABATE Infection Trial analyses found that the decolonization protocol was effective. The team will also provide directions for nasal decolonization of MRSA carriers, which was also done in the ABATE Infection Trial. The project design is similar to the structure and look of the AHRQ ICU decolonization toolkit previously created by some of the same investigators, based on the REDUCE MRSA Trial conducted in ICU patients.

Project Settings

The filming of demonstrations of the CHG cleaning of the devices and of nasal decolonization using live actors to simulate patients will take place at the Johns Hopkins Medicine Simulation Center. The Johns Hopkins Medicine Simulation Center is a fully accredited state-of-the-art medical training facility, where the implantation of these devices is already simulated, medical devices for simulation use are stocked, and videography is available. The toolkit will be assessed for usability at nine pilot site hospitals to be drawn from the Johns Hopkins Clinical Research Network, the University Hospitals (of Cleveland) Health System, and hospital members of the Society for Healthcare Epidemiology of America.

Key Tasks/Activities

1. **Development of Training Videos:** Given that ABATE trial patients with specific medical devices received the most infection prevention benefit from decolonization in non-ICU units, training videos will focus on how to properly apply CHG to the device insertion sites, the exposed parts of the devices, and the device dressings. Training videos will be modularized for targeted training that uses specific video segments as needed.
2. **Recruitment:** Twelve hospital sites (9 for the project and 3 contingency sites) will be selected for piloting. The sites will include both academic and community hospitals of varying sizes (characterized by bed volume), location (geographical as well as by urban/suburban/rural location), and patient racial and ethnic representation.

3. **Creation of the Remaining Toolkit Materials:** The Armstrong Institute and ABATE investigators will design and develop toolkit materials by adapting and augmenting materials from the ABATE Infection Trial. The toolkit is an integrated set of materials to assist hospitals in implementing a decolonization program adapted from and expanding on the ABATE Infection Trial materials. The toolkit will contain written/electronic education and training materials and associated instructional videos that describe and demonstrate proper decolonization techniques for adult non-ICU patients with central venous catheters, midline venous catheters, and lumbar drains.
4. **Heuristic Evaluation of Toolkit:** The investigative team will conduct a heuristic evaluation of the toolkit before assessing usability. Heuristic evaluation is a usability evaluation method that involves content and usability experts examining a system (e.g., tool, interface) and judging its compliance with recognized usability criteria.
5. **Usability Testing of Toolkit:** To assess usability of the toolkit, the nine points of contact (POCs) at the pilot sites will gather information regarding use of the training materials before a debrief with the investigative team. As part of the usability assessment, the team will use or modify standard tools for the appropriate written, video, and web materials in the discussion with the POCs. These debriefs will be qualitative and open ended.
6. **Toolkit Revision:** Based on the feedback from participating pilot sites, the ABATE Infection Trial investigators will work collaboratively with the Armstrong Institute team to make revisions to the written and web toolkit materials. This task may include adding frequently asked questions, editing the protocol print materials and web layout, reordering materials, revising descriptions, and making minor changes to the interface for presenting the materials and videos. The videos will not be modified.

ACTION III Project Summary: Clinical Decision Support for Chronic Pain Management

ACTION III Prime Contractor: RTI International

Project Director: Barry Blumenfeld, M.S., M.D.

Assistant Project Director: Joshua Richardson, M.S., M.L.S., Ph.D.

Key Personnel and Subcontractors

- RTI
    - Laura Marcial, Development and Implementation Lead
    - Joshua Richardson, Evaluation Lead
- Vanderbilt University Medical Center (VUMC)
    - Asli Weitkamp, Co-Principal Investigator (PI)
    - S. Trent Rosenbloom, Co-PI
- University of Chicago, Department of Medicine (UCM)
    - Craig Umscheid, Co-PI
    - Cheng-Kai Kao, Co-PI
- Technical Partners
    - Bryn Rhodes, Database Consulting Group, FHIR Developer
    - Floyd Eisenberg, iParsimony, Knowledge Engineer
    - Robert McClure, MD Partners, Knowledge Engineer
- Advisors/Consultants
    - Mark Edlund, RTI, Subject Matter Expert (SME), Development and Evaluation
    - Lauren McCormack, RTI, SME, Development
    - Sara Jacobs, RTI, SME, Evaluation
    - Danny van Leeuwen, Health Hats, Patient Advocate
    - Glyn Elwyn, The Dartmouth Institute, SME, Shared Decision Making
    - Kensaku Kawamoto, University of Utah, SME, FHIR Implementation

Project Period: 9/30/2019–9/29/2021

Total Cost: $3,612,777

AHRQ Contracting Officer's Representative: Edwin Lomotan

Project Purpose, Goals, and Objectives

The purpose of this project is to demonstrate the feasibility of standards-based publicly shareable clinical decision support (CDS) for managing chronic pain that supports shared decision making (SDM) between clinicians and patients. CDS that incorporates SDM techniques may better enable clinicians to partner with their patients in managing chronic pain and avoid the related challenges stemming from opioid misuse.

Project objectives include development, implementation, evaluation, and dissemination of:

- Patient-facing CDS that collects patient-reported data and preferences, delivers patient-specific educational materials about chronic noncancer pain and opioids, and prepares patients for SDM with providers via a SMART on FHIR application linked to electronic health record (EHR)-based patient portals.
- Clinician-facing CDS that provides physicians with relevant, visually optimized patient-specific data for chronic pain and opioids, access to prescription drug monitoring program (PDMP) data (UCM only), information supporting SDM during primary care visits, and ability to record results in an enhanced version of CDS Connect's SMART on FHIR-based Pain-Management Dashboard.

Background and Significance

Few areas in healthcare today are as pressing as managing chronic pain and related challenges stemming from opioid misuse. Chronic pain is linked to increased opioid use, multiple comorbidities, reduced physical functioning, and reduced quality of life.

An Institute of Medicine report estimates that chronic pain affects as many as 1 in 3 American adults, and 1 in 10 American adults suffers from chronic pain that significantly disrupts work, social, or self-care activities. AHRQ's July 2018 Comparative Effectiveness Review noted that the annual costs of chronic pain range from $560 billion to $635 billion, exceeding those from heart disease, diabetes, or cancer. Chronic pain and opioids together amount to "twin crises" in healthcare.

Methods

The patient-facing CDS component will be an application we term "My Pain Assessment and Information Needs (MyPAIN)," a patient portal-based intervention that will be developed as a SMART on FHIR application. Patients will be invited to use MyPAIN to send their doctors information about their chronic pain intensity and preferences with respect to treatment alternatives. In addition, patients will be given access to evidence on chronic pain and opioid medications for pain.

Results collected in MyPAIN will be made available to clinicians in PainManager, an EHR-accessible SMART on FHIR application that we will develop. PainManager will present patient data recorded in MyPAIN, relevant EHR data, access to State-level PDMP data (UCM only), and access to evidence-based SDM material for use during a patient visit. At the end of a patient visit, PainManager will allow the clinician to generate a note regarding an SDM session that will be saved to the EHR.

Mixed methods will be used to assess the implementation and use of MyPAIN and PainManager according to the adapted Consolidated Framework for Implementation Research for Process Redesign, including:

- Semistructured interviews conducted with clinicians and administrators from sites at VUMC and sites at UCM immediately after the "soft go-live" phase; and
- Quantitative analysis using data from the EHRs, FHIR servers, or both at the intervention sites to collect data for implementation measures.

Target Audiences

Patients and clinicians.

Project Settings

- Vanderbilt University Medical Center, Nashville, Tennessee (VUMC)
- University of Chicago, Department of Medicine, Chicago, Illinois (UMC)

Key Tasks/Activities

- Development and implementation of clinician-facing and patient-facing CDS
- Field testing at partner sites
- Evaluation, including both qualitative and quantitative data collection
- Dissemination, including development and posting of shared artifacts and implementation guides

Key Deliverables

- System requirements document
- System design document
- Test plan document
- Implementation guides
- Draft operations manuals
- User guide
- Evaluation plan
- Patient-facing CDS
- Clinician-facing CDS

ACTION III Project Summary: Clinical Decision Support (CDS) for Chronic Pain Management

Prime Contractor: MedStar Health Research Institute

Project Lead and Project Director: Kristen Miller, Dr.Ph., CPPS, and Aaron Zachary Hettinger, M.D., M.S.

Key Personnel

- Raj Ratwani, Ph.D.
- Jim Houston, M.D.
- Deliya Wesley, M.P.H., Ph.D.
- Sadaf Kazi, Ph.D.
- Joseph Blumenthal
- Robin Littlejohn, M.S.

Subcontractors

- PERK Health
- George Washington University
- Georgetown University
- IMPAQ

Project Period: 9/2/2019–9/1/2021

Total Cost: 3,762,767

AHRQ Contracting Officer's Representative: Edwin Lomotan, M.D., FAAP, FAMIA

Project Purpose, Goals, and Objectives

The goal of the project is to develop, implement, disseminate, and evaluate clinical decision support (CDS) for patients and clinicians in the area of chronic pain management. Specifically, the purpose of the project is to create, disseminate, and evaluate CDS that:

1. Is interoperable and publicly shareable,
2. Meets the needs of patients and clinicians through both patient- and clinician-facing channels and formats, and
3. Will have demonstrable impact.

Key objectives include development and implementation of:

- CDS for patients to help them track and manage pain and daily function to support reduced opioid use while facilitating continued patient engagement; and
- CDS for clinicians to detect patients at high risk of harm from opioids and to optimize presentation of patient data and evidence-based guidelines to support opioid tapering.

Background and Significance

Chronic pain is a multidimensional health condition defined as pain persisting or recurring for more than 3 to 6 months.[1] While the true prevalence of Americans living with chronic pain is difficult to define, 2014 surveys estimate approximately 25.3 million adults experience pain daily while 126 million adults reported some type of pain within the previous 3 months of being surveyed.[2,3]

Pharmacological management of pain, including opioid analgesics, is often a first line of defense for many clinicians.[4] Incident rates of long-term opioid use for non-cancer-related pain are increasing in the United States.[5] Despite their demonstrated benefits and effectiveness in pain relief in the short term, opioid analgesics for chronic pain may be less effective and can lead to opioid misuse or addiction.[4,6]

The treatment and clinical management of chronic pain is among the most vexing challenges facing primary care providers.[7] Chronic pain complaints are the second most common reason for outpatient primary care visits.[8] Resources such as the AHRQ-funded Six Building Blocks provide a structured systems-based approach for improving clinical management. Various guidelines recommend assessing the risks and benefits of ongoing treatment for patients on long-term opioids. These include the Department of Veterans Affairs/Department of Defense Management of Opioid Therapy for Chronic Pain and guidelines from the Centers for Disease Control and Prevention (CDC).

Optimal pain management requires clinicians to create individualized treatment plans. How and when the medication is reduced depends on the patient's pain level at each step and demands not only shared decision making but also the clinician's utmost attention and expertise. Barriers primary care providers face to optimizing pain therapy include challenging and exhausting communications, inadequate resources, and lack of training.[9]

The ability to routinely assess patients' responses to pain-related treatments using validated patient reported outcomes (PROs) is critically important in clinical care. As the dangers of using opioid medication as firstline treatment for chronic pain have become apparent, the need for such assessments is especially imperative. Therefore, national guidelines and experts have called for the assessment of pain-related functioning in addition to pain intensity. This assessment can help determine whether patients are benefiting sufficiently to merit the use of opioid treatment or whether lower doses of medication or nonpharmacological treatment options should be prioritized.[10-12]

Target Audiences

Intended target audiences include:

- Patients with chronic pain, who will be able to enter PRO data and visualize data to help understand risks and benefits of current therapy through a user-friendly application. They will also become active members of their care team by discussing their health status and symptoms with their providers.

- Clinicians, who will have a better understanding of their patient's functional pain and opioid use, be able to visualize patient data, and have access to a tool that will aid in incorporating guidelines for prescribing and tapering opioids for chronic pain.
- Researchers, who will have access to aggregated PRO data and will have a better understanding of barriers to CDS implementation and integration. They will also be able to understand facilitators to enhance implementation feasibility, material usability, and CDS tool adoption in practice.
- Health information technology (IT) innovators (e.g., patient- and clinician-facing CDS tool developers), who will have a better understanding of barriers to CDS implementation and integration. They will also be able to understand facilitators to enhance implementation feasibility, material usability, and CDS tool adoption in practice.

Methods and Key Tasks and Activities

- Design and Development of Patient-Facing CDS
    - Conduct stakeholder interviews with patients, family members, and health IT developers who focus on patient-facing technologies.
    - Develop a patient-facing CDS tool that incorporates the ability for patients to enter PRO data, enables them to visualize risks and benefits of current therapy, and facilitates communication and shared decision making with the clinicians.
    - Conduct iterative usability testing with patients to ensure that the resulting functional prototype meets the needs of end-users.
    - Set up a FHIR server within MedStar to allow data from the CDS tool to be integrated into the electronic health record (EHR).

- Design and Development of Clinician-Facing CDS
    - Conduct stakeholder interviews with pain specialists, primary care physicians, advanced practice providers (i.e., non-pain specialist), and health IT developers who focus on clinician-facing technologies. The goal of the interviews is to understand current prescribing guidelines, use of opioid tapering guidelines, therapy, and behavioral change strategies, challenges and barriers, and means to optimization.
    - Develop a clinician-facing CDS tool that incorporates the ability to better monitor patient's functional pain and opioid use, enables them to visualize patient data, and facilitates more informed recommendations through the incorporation of guidelines for prescribing and tapering opioids for chronic pain.
    - Conduct iterative usability testing with patients to ensure that the resulting functional prototype meets the needs of end-users.
    - Set up a FHIR server within MedStar to allow data (e.g., personalized CDC guidelines) to be integrated into the EHR.

- Technical Integration
    - Define app technical specifications (including integration requirements, functional requirements based on user needs), use case models, and specific use cases representing the needs of patients, clinicians, and researchers.

- Conduct iterative testing of both patient- and clinician-facing CDS tools to exercise all data elements and branches of the CDS logic.
- Conduct a workflow analysis of primary care clinician-patient interaction using observations (ethnographic approach) to: (1) develop site-specific process maps that will identify the overall processes and specific elements for CDS implementation, and (2) fully understand how the CDS tools will function under realistic care setting conditions and the efficacy and utility of tapering guideline recommendations.

- Implementation

  - Provide training on the new CDS tools user interface, functionality, and troubleshooting guidance, in addition to providing a project overview and orientation to the consent process to each site's physicians, advance practice clinicians, and site champions.
  - Implement and collect data in 15 primary care practices that use a variety of EHR vendors.
  - Conduct brief scheduled check-in meetings with site champions to monitor progress on the CDS tool implementation and sustained use.

- Evaluation

  - Establish CDS-specific process and outcome measures to evaluate implementation effectiveness across five dimensions of the RE-AIM framework using a mixed-methods approach to assess impact and lessons learned during development, implementation, and evaluation. (RE-AIM stands for reach, efficacy or effectiveness, adoption, implementation, and maintenance.)
  - Focus on feasibility and usability, while still tracking long-term outcomes after the funding period, by using quantitative and qualitative metrics to identify barriers to successful implementation, evaluating acceptability of methods and instruments to participants, providing estimates of missing data and dropout, and estimating resources needed for future implementation.
  - Collect qualitative data through calls with site leads and site visits to collect insights from clinicians and patients on their experience of implementing and using the CDS tools.

- Dissemination and Implementation

  - Review internal and external evaluations to optimize and finalize the implementation guide to enhance implementation feasibility, aid material usability, and support adoption in practice.
  - Disseminate the patient- and clinician-facing CDS tools and the implementation guide across the CDS community using various partnerships (e.g., PCCDS LN, HIMSS, AMIA, organizations representing frontline users and health IT innovators) and platforms (e.g., CDS Connect).

Project Settings

Research will be conducted at 15 primary care sites that will be recruited from MedStar Health, CAPRICORN, and George Washington University. Sites and locations will be selected to include diverse populations while also ensuring a large enough sample size. We will purposively recruit sites to represent (1) small to medium versus large practice sizes, (2) different EHR vendors, and (3) diverse patient populations (serving patients from varied sociodemographic groups).

Key Deliverables

- Prototype patient-facing clinical decision support (CDS)
- Prototype clinician-facing CDS
- Facilitator guides for usability testing
- Stakeholder feedback reports
- Usability testing reports
- Technical specifications report
- Implementation toolkit
- Evaluation report
- Final CDS tools
- Final project report

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ACTION III Project Summary: Identifying and Testing Strategies for Management of Opioid Use and Misuse in Older Adults in Primary Care Practices

Prime Contractor: Abt Associates

Project Director: Rosanna Bertrand, Ph.D., Abt Associates

Key Personnel and Subcontractors

- Senior Advisors**:** Michael Parchman, M.D., M.P.H., Kaiser Permanente Washington Health Research Institute; Sarah Shoemaker-Hunt, Ph.D., Pharm.D., Abt Associates
- Subcontractors**:** Kaiser Permanente Washington Health Research Institute

Project Period: 9/23/2019–9/22/2023

Total Cost: $3,281,043

AHRQ COR: Parivash Nourjah, Ph.D.

Project Goals

The goals of this project are to:

- Assess and describe the current prevalence, awareness, and management of opioid use, misuse, and abuse in older adults in primary care practices to identify gaps and areas of needed research;
- Support primary care practices in developing and testing innovative strategies, approaches, and tools for opioid management within the context of facilitated learning collaboratives; and
- Produce a compendium of new and existing strategies, tools, and approaches to support the management of opioid use and misuse in older adults in primary care settings.

Background and Significance

On average, 130 Americans die everyday from an opioid overdose. In 2016, the National Survey on Drug Use and Health reported that more than 2 million people had an opioid use disorder (OUD). In addition, more than 11 million people reported misusing prescription opioids, 2 million for the first time. The Department of Health and Human Services declared the opioid epidemic a public health emergency in 2017.

While there have been extensive efforts to address the opioid epidemic in general, relatively little attention has been paid to the risks and effects of opioid use, misuse, and OUD in older adults. The rate of opioid misuse in older adults increased in recent years compared with a decrease over the same time in the non-older adult population.[1] Use of opioids among older adults is associated with increased risk of harm compared with a younger population due to changes in metabolism, physiology, and drug-drug interactions, among other reasons.[2] For several decades, opioid medications have been included in the Beers Criteria, a list of inappropriate medications for older adults,[3] for whom the risk of harm is often greater than the benefit.

A recent Healthcare Cost and Utilization Project report by AHRQ provides evidence of the risk of harm by documenting a significant increase in opioid-related inpatient admissions and emergency department visits among older adults between 2010 and 2015. This increase paralleled a corresponding increase in use of opioids in Part D Medicare pharmacy data.[4]

Most opioid prescriptions provided to older adults are written by primary care clinicians,[5] and older adults' chronic pain is commonly managed in primary care settings. Therefore, any strategy designed to address opioid use, misuse, and abuse in older adults must be a good fit for the typical primary care clinic context (e.g., mapping onto workflows).

Strategies for managing opioid use are not one-size-fits-all; rather, their effectiveness depends on how well they address the specific concerns and conditions of patients and how providers apply those strategies (to whom and when). Many conditions that cause chronic pain are more common in older adults than in younger adults,[6] and opioids—and certain specific opioids— are more effective for treating some of these conditions than others.

The risks of adverse medication events also differ for older adults, including falls, respiratory depression, negative cognitive effects, hazardous drug-drug interactions (e.g., concurrent prescriptions for opioids and benzodiazepines), and poorly coordinated care, among others.[7-9] How patients presenting with pain are treated also differs significantly from one prescriber to another. Provider practices differ according to patient characteristics, such as age, racial/ethnic group, geographic region of residence, and gender.[7,10-12] Understanding how pain in older adults is treated in practice, as well as the risks and benefits of prescribing opioids and other medications to older adults, is therefore a necessary initial step in this project.

Through this project, AHRQ is addressing the gap in knowledge around opioid use in older adults by synthesizing what is known and the development and testing of innovative strategies, approaches, and tools for opioid management in primary care settings of older adults with chronic pain, long-term opioid use, and OUD.

Target Audiences

The primary target audience for this project is primary care providers. However, a range of deliverables will be made available publicly through AHRQ's website and through peer-reviewed publications that will likely be of interest to a broader audience, including other healthcare providers, academic researchers, educators, and policymakers. The compendium of strategies will be published on AHRQ's website, The Academy: Integrating Behavioral Health and Primary Care.

Methods and Key Activities

Conceptual Model

The overall technical approach is based on an adapted conceptual model from the Six Building Blocks (6BBs) program. 6BB was initially designed to improve the management of patients on long-term opioids in primary care. However, these building blocks also provide a broad foundation relevant to a range of healthcare interactions focused on appropriate management of chronic pain. The project team will expand and adapt the 6BBs model to cover a broader spectrum of chronic pain and opioid-related healthcare interactions in older patients on the continuum from prevention to management and treatment.

Technical Expert Panel

A technical expert panel (TEP) composed of 10 researchers and experienced practitioners will provide guidance to the project team throughout the course of the project.

Assess and Describe the State of the Field

- The project team will conduct an environmental scan of grey and peer-reviewed literature to identify opioid management strategies, resources, and tools used with older adults across healthcare settings. The scan will include strategies used by health systems, payers, and States in addition to individual clinicians.
- The team will conduct a provider survey to elicit information about:
    - Their awareness of the prevalence of opioid-related adverse events and opioid use, misuse, and OUD in older adults in primary care;
    - Their experiences caring for patients with chronic pain on opioids; and
    - Their use of shared decision making, safe prescribing, risk mitigation, and multimodal therapy for older adult patients seeking treatment for pain management.
- The team will interview staff from nine exemplar practices to discuss their innovative strategies for pain management in older adults, as well as interventions and treatment of opioid use and misuse in older adults.

Produce a Compendium

- The project team will develop a compendium of effective strategies based on the results of the environmental scan and literature review, recommendations from the TEP, and interviews with exemplar practices that have developed or implemented innovative strategies.
- The strategies will reflect existing tools for managing chronic pain and opioid use and misuse among older adults and tools for adults with chronic pain and opioid use or misuse that can be adapted or tailored to older adults.
- The project team will revise the initial version of the compendium of strategies based on evaluation results, lessons learned, and recommendations that emerge from practices involved in learning collaboratives.

Establish and Support Two Learning Collaboratives of Primary Care Practices

- The project team will convene and facilitate two sequential, 15-month learning collaboratives composed of 12 practices each to promote the development and testing of strategies gleaned from the environmental scan and interviews with exemplar practices. The strategies will assist with the prevention and treatment of opioid misuse and the appropriate prescribing and management of opioid use in older adults.
- At the conclusion of each learning collaborative, the project team will assess the extent to which changes have been integrated into the participating practices' standard work and policies and their intention and plans for sustaining the changes. At this juncture, the team will also ask the practices to assess their programs' sustainability from their perspective as part of interviews and in group reflections at the in-person capstone meetings.

Project Settings

Strategies will be tested at primary care practices across the country.

Expected Deliverables

- Synthesis of exemplar practices memo
- Environmental scan report
- Infographic
- Final survey results
- Compendium of strategies
- Final report
- Peer-reviewed manuscript

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ACTION III Project Summary: Patient-Centered Outcomes Research Clinical Decision Support: Current State and Future Directions

Prime Contractor: NORC at the University of Chicago

Principal Investigator/Project Lead and Project Director: Prashila Dullabh, M.D.

Key Personnel

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- Shana Sandberg, Ph.D.
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Subcontractors

- Dean Sittig, Ph.D.
- Elimu Informatics, Inc.

Project Period: 9/30/2019–9/29/2022

Base Period Cost: $3,464,447

AHRQ Contracting Officer's Representative: Shafa Al-Showk

Project Goals and Objectives

The overall goal of the project is to conduct an evaluation of AHRQ's Patient-Centered Outcomes Research (PCOR) Clinical Decision Support (CDS) Initiative to assess the initiative's current state and characterize its impact. AHRQ's PCOR CDS initiative aims to accelerate the movement of evidence into practice through CDS and to make CDS more shareable, standards based, and publicly available.[1]

Specific project objectives include:

- Conduct an evaluation of the PCOR CDS Initiative components to evaluate the extent to which the PCOR CDS Initiative promoted the dissemination and implementation of PCOR findings through sharable, standards-based, and publicly available CDS and how it has done so.
- Identify what stakeholders perceive to be the effects of the initiative and what potential effects they foresee it having in the future.
- Conduct a horizon scan to understand the landscape of patient-centered CDS and characterize the future state of patient-centered CDS.
- Convene a technical expert panel (TEP) to identify gaps and prioritize patient-centered CDS research topics. The TEP will also provide guidance on ideal methods for conducting the evaluation, horizon scan, and pilot project and for disseminating project findings.

- Design and execute a pilot to implement a patient-centered CDS solution with the goal of assessing the feasibility of conducting research on next-generation patient-centered CDS.
- Disseminate findings from the project.

Background and Significance

Research has shown that healthcare quality in the United States varies significantly and only half of adults receive evidence-based recommended care.[2] Current evidence shows that use of CDS systems improves clinician adherence to evidence-based practices, reduces clinical errors, and allows customization to patient needs, all of which improve quality of care and patient outcomes.[3-5] CDS systems are usually based in electronic health records, encompassing tools such as alerts, clinical guidelines, patient reports and dashboards, diagnostic support, and workflow tools.[6]

Traditionally, CDS initiatives have focused on provider guidelines and increasing the shareability of CDS artifacts; patient-centered CDS, however, targets patients, caregivers, and providers.[7] In 2016, AHRQ launched its PCOR CDS initiative to accelerate the movement of evidence into practice through CDS and to make CDS more shareable, standards based, and publicly available. Components of the initiative include AHRQ's Patient-Centered CDS Learning Network; CDS Connect; a task order titled *Quantifying Efficiencies Gained through Shareable CDS Resources*; and *Advancing Evidence into Practice through Shared, Interoperable CDS Resources* (U18) grant awards.

Target Audiences

The project targets several different patient-centered CDS stakeholders, including:

- Clinicians,
- Informaticists,
- CDS Connect users,
- Health information technology vendors (e.g., CDS developers and content vendors, electronic health record vendors, app developers),
- Researchers, and
- Health systems.

The ultimate beneficiaries of the effort will be patients and their caregivers.

Methods and Key Tasks

- **Technical Expert Panel (TEP).** A TEP will be convened to provide input and advice on the optimum approach to conducting the evaluation, horizon scan, and pilot project and to disseminating project findings. TEP meetings will provide an opportunity to engage in a dynamic dialogue with CDS experts best able to comment on the optimal approach to the project activities.
- **Evaluation of PCOR CDS Initiative.** The evaluation methods will consist of program material review, key informant interviews, site visits, and case studies. The mixed-methods evaluation will be guided by the Centers for Disease Control and Prevention *Framework for Program Evaluation in Public Health*, which specifies the critical steps of program

evaluation. These steps are engaging stakeholders, describing the program, developing the evaluation design, gathering credible evidence, justifying conclusions, and ensuring the use of the evaluation and its lessons learned.[8] For impact, the evaluation will primarily examine intermediate and long-term outcomes related to the availability and adoption of patient-centered CDS. The assumption is that these outcomes will lead to improved adherence to patient-centered evidence-based guidelines, reduction in clinical errors, and improved quality of care and health outcomes.

- **Horizon Scan.** The horizon scan will involve a review of the peer-reviewed and grey literature, as well as news items and internet reports, which will be followed up with key informant interviews. Two conceptual frameworks will guide the horizon scan and categorize the results: the Patient-Centered CDS Learning Network's Analytic Framework for Action[9] and Sittig and Singh's Sociotechnical Model.[10] The goal of the horizon scan is to assess the current and near-future state of patient-centered CDS to inform the evaluation research questions and methods and to shape the design of a CDS pilot.
- Pilot Test. A patient-centered CDS solution will be implemented at one pilot test site to assess the feasibility of conducting research on next-generation patient-centered CDS. After implementation at the pilot site, qualitative and quantitative data will be collected from key stakeholders and end-users involved in the implementation. The goal will be to assess how the site's use of standards and CDS Connect affected efficiency and the use of shareable CDS.
- **Dissemination.** The project team will produce three final reports describing findings from the evaluation, the horizon scan, and the pilot, as well as a manuscript based on the project findings. These activities will inform outside stakeholders of the impact of the PCOR CDS Initiative, the trajectory of the field and potential innovations on the horizon, and lessons learned from the patient-centered CDS pilot.

Project Setting

The pilot implementation site will be selected based on a set of recruitment criteria and with input from the TEP and AHRQ.

Expected Deliverables

- Evaluation plan
- Annual evaluation reports
- Horizon scan plan
- Horizon scan final report
- Dissemination plan
- Final report
- Manuscript

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ACTION III Project Summary: The Academy for Integrating Behavioral Health and Primary Care

Prime Contractor: Westat

Principal Investigator/Project Lead and Project Director

- Lois Olinger, M.C.P., and Garrett Moran, Ph.D. (Co-Principal Investigators)
- Joshua Noda, M.P.P. (Project Director)

Key Personnel and Subcontractors

- Glynis Jones, M.S.W. (Ongoing Portal Maintenance; Portal and Product Enhancements)
- Rebecca Noftsinger (National Integration Academy Council Lead)
- West Virginia University
- Informatics Studio

Project Period: 9/30/2019–9/29/2024

Total Cost: $2,499,525

AHRQ Contracting Officer's Representative: Parivash Nourjah

Project Purpose, Goals, and Objectives

The goal of this project is to provide continued support for the AHRQ Academy for Integrating Behavioral Health and Primary Care (the Academy), a web-based national resource and coordinating center. The Academy is designed for people committed to delivering comprehensive, integrated behavioral healthcare and primary care, including care for substance use disorders, such as opioid use disorder (OUD).

Specific objectives include:

- Convening an expert panel to provide input and guidance on the work of the Academy.
- Maintaining the web platform that supports the Academy.
- Updating guidance, tools, and resources available through the Academy Portal (e.g., online community ("Commons"); playbooks, literature collection).
- Developing new tools or resources as needed.

Background and Significance

Since the Institute of Medicine's reports in 2001 and 2005 and the President's New Freedom Commission on Mental Health report in 2003, it has been apparent that America's healthcare delivery systems need to undergo fundamental changes to increase access to integrated, coordinated care and to recognize the importance of a whole-person approach to addressing an individual's health needs. In September 2010, AHRQ created the Academy for Integrating Behavioral Health and Primary Care (Academy) to function as both a coordinating center and a

national resource for people committed to delivering comprehensive, integrated behavioral healthcare in primary care settings.

The purpose of the Academy is to analyze, synthesize, and issue actionable information that providers, policymakers, investigators, and consumers can readily use to increase the use of best practices in integrating behavioral health and primary care. In addition, the Academy is intended to increase the number of providers capable of offering integrated services, with the ultimate goal of increasing patients' access to behavioral health services.

A new need that has arisen since the Academy was first launched is the dissemination of effective strategies such as medication-assisted treatment (MAT) to address the needs of the increasing number of people battling OUD and other substance use disorders. This area will be a particular focus of the updates that will be provided in this iteration of the Academy.

Target Audiences

The primary target audiences are the providers, primary care practices, health systems, and AHRQ-funded grantees working to integrate behavioral health and primary care.

Methods and Key Tasks

- **Expert Panel.** The work of this project will be guided by the insight of the expert panel, the National Integration Academy Council (NIAC), and the evolving needs of AHRQ.
- **Ongoing Maintenance of the Academy Portal.** The existing Academy platform will be leveraged to support continued coordination and dissemination activities. The Commons, the online community for peer-to-peer knowledge exchange, will be maintained, as will the Literature Collection.
- **Portal and Product Enhancements.** The team will continue to update, enhance, and add to the large volume of Academy products and resources. A particular focus of new or enhanced products and resources will be emerging evidence on effective strategies for addressing OUD in primary care and other ambulatory care settings.

  For example, the MAT Tools & Resources Collection (a searchable database of tools and resources available to help those who offer or use MAT services) will be updated. In addition, guidance on how to integrate MAT for OUD into primary care or other ambulatory care settings will be provided through enhancements to the MAT Playbook. There will also be ongoing efforts to identify and assess any newly emerging needs of the target audiences and to consider new or enhanced products to address those needs.

Deliverables

- NIAC meetings
- Academy portal maintenance
- Academy portal and product enhancements