

# AHRQ Digital Healthcare Research Program

AT A GLANCE 2022



## Our Purpose

AHRQ's Digital Healthcare Research (DHR) program's mission is to determine how the various components of the ever-evolving digital healthcare ecosystem can best come together to positively affect healthcare delivery and create value for patients and their families.

Our vision is that every patient and care team will have ready access to all applicable data and knowledge, mediated by advanced analytics and understandable visualizations, to address a patient's health and healthcare.

## Our Focus

The DHR program funds research that demonstrates how digital healthcare solutions can be designed and implemented to improve healthcare system performance and patient health outcomes. In 2022, AHRQ-funded studies focused on digital technologies that engage and empower patients and optimize and advance care delivery—with an emphasis on scaling evidence-based practice.

## Our Impact

AHRQ investments have resulted in significant impacts and progress on behalf of the American public. In 2022 AHRQ invested \$29 million, including:

- \$14.3 million in funding from DHR appropriation;
- \$13 million in funding from the Patient-Centered Outcomes Research Trust Fund; and
- \$1.7 million in funding from General Health Services Research appropriation.

The *Improving Healthcare Through AHRQ's Digital Healthcare Research Program 2022 Year in Review* highlights 16 research stories that capture the breadth and depth of our efforts to advance digital healthcare technologies to meet the evolving needs of patients, clinicians, and health systems.

## Key Research Themes for 2022



Engaging and Empowering Patients



Optimizing Care Delivery for Clinicians



Supporting Health Systems in Advancing Care Delivery

In 2022, the DHR program supported:



108

GRANTS AND

7

RESEARCH CONTRACTS AT



69

INSTITUTIONS IN



25

STATES AND THE DISTRICT OF COLUMBIA WITH A

\$29

MILLION TOTAL INVESTMENT



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## Engaging and Empowering Patients

Story Title	Impact Statement	Principal Investigator(s)	Type
<a href="#">ASTHMAXcel PRO Mobile Application to Support Asthma Chronic Disease Management</a> Research Investment: \$1,481,014	A mobile application designed to facilitate asthma self-management and shared decision making through patient-reported outcomes can improve care, asthma control, and knowledge, as well as decrease healthcare utilization.	Sunit Jariwala Albert Einstein College of Medicine	Completed
<a href="#">A Patient-Facing App to Improve Care Transitions from Hospital to Home</a> Research Investment: \$2,000,000	A patient-facing app simplifying the information patients and caregivers receive has the potential to better engage patients and families in their healthcare post-discharge and reduce adverse events.	Lipika Samal and Patricia C. Dykes Brigham and Women's Hospital	Emerging
<a href="#">Technology to Support Personalized Care Decisions for Breast Cancer Treatment</a> Research Investment: \$480,536	Enhancing personalized care decisions, using technology designed with human factors engineering approaches, can improve breast cancer care quality.	Megan Elizabeth Salwei Vanderbilt University Medical Center	Emerging



## Optimizing Care Delivery for Clinicians

Story Title	Impact Statement	Principal Investigator(s)	Type
<a href="#">Closing the Communication Gap Between Prescribers and Pharmacists to Decrease Medication Safety Risks</a> Research Investment: \$297,196	Implementing CancelRx, an e-prescribing tool to electronically communicate medication discontinuation orders between electronic health records and pharmacies, showed an immediate and persistent reduction in prescriptions that were dispensed after discontinuation.	Samantha Pitts Johns Hopkins University	Completed
<a href="#">A Clinical Decision Support Tool for Preventing Falls</a> Research Investment: \$993,595	Tools like ASPIRE that integrate fall prevention clinical decision support and patient resources may better support patient self-care and adoption of evidence-based recommendations.	Patricia C. Dykes Brigham and Women's Hospital	Completed
<a href="#">Evaluation of the SCaling Acceptable cDs (SCALED) Approach of Interoperable Clinical Decision Support for Venous Thromboembolism Prevention</a> Research Investment: \$2,937,874	A methodology for scaling patient-centered outcomes research into interoperable, shareable clinical decision support tools that are actively maintained with current evidence has the potential to close the evidence-into-practice gap, leading to better patient outcomes.	Christopher J. Tignanelli and Genevieve B. Melton-Meaux University of Minnesota	Emerging
<a href="#">Use of Artificial Intelligence to Support Same-Day Breast Cancer Diagnostic Testing</a> Research Investment: \$1,003,772	Use of an artificial intelligence algorithm that would allow for screening mammography interpretation and same-day diagnostic imaging has the potential to vastly shorten the time from an abnormal screening mammogram to diagnostic workup, resolving false positives in a timelier fashion, and reducing the anxiety incurred in patients by long wait times for diagnostic evaluation.	William Hsu and Anne C. Hoyt University of California, Los Angeles	Emerging
<a href="#">Continuous Predictive Analytics Monitoring to Improve Care for At-Risk Patients with Cardiac Disease</a> Research Investment: \$1,200,000	An artificial intelligence digital health tool that identifies patients on the verge of clinical deterioration may allow for faster intervention and a reduction in morbidity and mortality.	Jessica Keim-Malpass and Jamieson MacDonald Bourque University of Virginia	Emerging
<a href="#">Decision Support in the Emergency Department to Improve Medication Safety for Older Adults</a> Research Investment: \$792,333	Using the clinical decision support system Enhancing Quality of Prescribing Practices for Older Adults Discharged from the Emergency Department significantly reduces the prescribing of potentially inappropriate medications in the emergency department setting.	Ann E. Vandenberg Emory University	Completed



## Supporting Health Systems in Advancing Care Delivery

Story Title	Impact Statement	Principal Investigator(s)	Type
<a href="#">A Machine Learning Algorithm to Improve the Use of Interpreters for Hospitalized Patients with Complex Care Needs</a> Research Investment: \$300,000	A machine learning, predictive analytic intervention has the potential to improve healthcare, making it more equitable for patients with a non-English language preference and complex care needs by supporting timely interpreter use to facilitate decision making and promote patient-centered care.	Amelia K. Barwise Mayo Clinic Rochester	Emerging
<a href="#">Decision Precision+: Increasing Lung Cancer Screening for At-Risk Patients</a> Research Investment: \$1,184,380	A shared decision-making tool to support the appropriate use of low-dose computed tomography screening has the potential to prevent 10,000 or more lung cancer deaths annually in the United States.	Kensaku Kawamoto University of Utah	Completed
<a href="#">Making Evidence-Based Clinical Decision Support Implementable in Different Electronic Health Records</a> Research Investment: \$1,541,803	Clinical decision support that can be implemented in different types of electronic health records has the potential to scale evidence-based practice across healthcare systems.	Alex Spyropoulos and Thomas G. McGinn Feinstein Institute for Medical Research	Completed
<a href="#">Spreading and Scaling Use of Patient-Reported Outcomes for People with Rheumatoid Arthritis</a> Research Investment: \$1,480,915	Development of a toolkit to facilitate the scale and spread of using patient-reported outcomes among rheumatoid arthritis patients fills an existing gap in national resources to provide support to rheumatologists.	Jinoos Yazdany University of California, San Francisco	Completed
<a href="#">Automated Retract-and-Reorder Measures to Improve Medication Safety</a> Research Investment: \$999,997	New measures to identify near-miss medication errors are a major advancement in patient safety and can help healthcare systems make ordering even safer.	Jason Stuart Adelman Columbia University Health Sciences	Completed
<a href="#">Safer Inter-Hospital Transfers by Improving Access to Health Information</a> Research Investment: \$1,981,506	An enhanced health information exchange platform that improves workflow, interoperability, and visualization of data for inter-hospital transfers may reduce the morbidity and mortality seen today during inter-hospital transfers.	Stephanie Mueller Brigham and Women's Hospital	Emerging
<a href="#">Use of Artificial Intelligence and Machine Learning to Improve Care by Critical Care Pharmacists</a> Research Investment: \$2,156,598	Using machine learning- and artificial intelligence-developed tools in the intensive care unit has the potential to optimize critical care pharmacist resources and improve patient safety by reducing adverse drug events.	Andrea Sikora University of Georgia	Emerging

