



Funding Opportunities in Health Sciences and Al

Edwin Lomotan, MD, FAMIA Agency for Healthcare Research and Quality (AHRQ)

Heartland Workshop on Heart Sounds and Al June 21, 2024

Overview

- AHRQ and its mission
- Funding highlights and recent activities
- Current funding opportunities
 - Notice of Intent: AI and patient safety
- Q/A









Agency for Healthcare Research and Quality (AHRQ)



www.ahrq.gov

Digital Healthcare Research Advancing Today's Discoveries, Transforming Tomorrow's Care Our mission is to produce evidence to make health care <u>safer</u>, higher <u>quality</u>, more <u>accessible</u>, <u>equitable</u> and affordable

To work with HHS and other partners to make sure that the evidence is understood and used



AHRQ's Unique Role



- AHRQ focuses on healthcare improvement
- Dissemination and implementation of actionable knowledge is necessary for the adoption and delivery of innovative therapies
- "Real world" settings

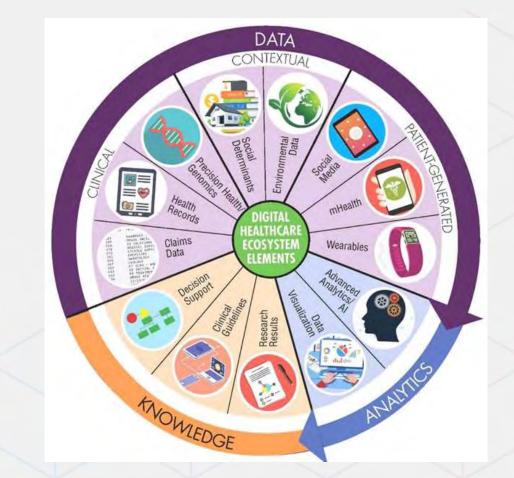


AHRQ Improves Healthcare Delivery

- Generating scientific evidence and actionable knowledge: Funding health services research to understand how care is delivered and how it can be delivered better (quality, safety, equity, value)
- Moving evidence into practice: Developing tools, training, resources, and (non-regulatory, non-punitive) assistance
- Monitoring and feedback: Measurement, data, analytics, and reporting for state and federal policymaking



AHRQ Digital Healthcare Research



How can the various components of the ever-evolving digital healthcare ecosystem best come together to positively affect healthcare quality, safety, accessibility, and effectiveness?

https://digital.ahrq.gov/ Recent Annual Report!



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https://digital.ahrq.gov/dhr-20





A History of Innovation



THQIT GRANTS AWARDED

Under the Transforming Healthcare Quality through Health Information Technology, or THQIT initiative, 118 grantees planned, implemented, and demonstrated the value of digital healthcare broadly. One of these projects was Project ECHO, an early telehealthcare consultation model.

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AHRQ MAKES FORAYS INTO HIE

AHRQ funded the first large-scale demonstrations of health information exchange (HIE) in the United States. These six statewide projects laid the foundation for HIE efforts across the country by developing best practices around data sharing. The \$139 million investment also supported more than 100 grants across 38 states to help local providers use health IT and established the National Health Information Technology Resource Center to current health IF advention.

DIVISION OF HEALTH IT ESTABLISHED

entities, and recognizing that AHRQ's health information

technology (health IT) research needed a home of its own,

AHRQ established the Division of Health iT to coordinate

its technology-related research.

Building on earlier work of AHRQ and its predecessor

2021 🧺

CDS INNOVATION Collaborative established

AHRQ launched the CDS Innovation Collaborative, a learning collaborative that advances Patient-Centered CDS (PC-CDS) by creating a foundation of PC-CDS resources and convening patients, developers, clinicians, and others through workgroups and demonstration projects.



AHRQ CONSIDERS THE INTERSECTION OF TECHNOLOGY AND PATIENT-GENERATED DATA AND OUTCOMES

AHRQ published Integrating Patient Generated Health Data into Electronic Health Records in Ambulatory Care Settings: A Practical Guide and a toolkit designed to help healthcare systems govern, integrate, and report electronic patient-reported outcomes data for clinical care delivery.



DIGITAL HEALTHCARE EQUITY FRAMEWORK AND PRACTICAL GUIDE RELEASED

AHRQ produced the Digital Healthcare Equity Framework: A Practical Guide for Implementation to empower developers and users of digital healthcare technologies and solutions to consider healthcare equity outcomes.

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https://digital.ahrq.gov/dhr-20



Highlight: Heart Failure Care, Clinical Decision Support, and Shared Decision-making

- "A Multi-Site Trial to Test Benefits of Adding a Personalized Risk Calculator to an Online Decision Aid for Left Ventricular Assist Device" (R01, Blumenthal-Barby, Baylor College of Medicine)
- Recognizes growing need for more personalized approaches to risk prediction and shared decision making (SDM) for patients, caregivers, and providers
- Will identify patient and provider views, translate into a CDS platform that facilitates SDM, evaluate the quality of the collaborative process
 https://digital.ahrg.gov/ahrg-funded-projects/multi-sit

https://digital.ahrq.gov/ahrq-funded-projects/multi-site-trialtest-benefits-adding-personalized-risk-calculator-online





Highlight: Scaling Clinical Decision Support Innovations

- "Dissemination and Implementation of QT Risk Clinical Decision Support" (R18, Malone, University of Utah)
- Adapt, implement, and distribute a validated CDS tool across urban and rural inpatient care facilities of varying acuity levels.
- Develop and include an educational program
- **Conduct evaluation** with respect to process changes within facilities, patient-focused clinical outcomes, and end-user satisfaction.

https://digital.ahrq.gov/ahrq-funded-projects/dissemination-andimplementation-qt-risk-clinical-decision-support



Highlight: Natural Language Processing

- "Natural Language Processing To Identify and Rank Clinically Relevant Information for EHRs in the Emergency Department" (**R21**, Goss, University of Colorado-Denver)
- Used NLP and machine learning to automatically process, filter, and rank free-text information needed for a given patient's complaint
- Focused on initial development and testing of an AI-based tool for clinical decision making

https://digital.ahrq.gov/ahrq-funded-projects/natural-languageprocessing-identify-and-rank-clinically-relevant-information





AHRQ Investments in Al

- Over 60 funded projects
 - 46 completed projects
 - 18 active projects
- Domains of Research:
 - Engage and empower patients and caregivers
 - Optimizing care delivery for clinicians
 - Supporting health systems for care delivery

https://digital.ahrq.gov/ahrq-fundedprojects/search?f%5B0%5D=technology%3A

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Spotlight on Al







Improving Healthcare Through AHRQ's **Digital Healthcare Research Program**

2022 Year in Review



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Research Spotlight

The Algorithm Is In: Is Adoption of Healthcare AI Outpacing Understanding?

Our Nation's strategy for better healthcare hinges on putting digital technologies to work.

Today's powerful tools make it easier to capture and share patient information, coordinate care, and streamline clinical workflows. However, these technologies also have created some unintended consequences. Health systems have massive data sets to manage, and providers face buildensome documentation requirements, voluminous charts to review, and overflowing inboxes.

As the healthcare industry looks for relief, artificial intelligence (AI) may offer solutions. Al-enabled systems can help humans perform key functions-diagnostics, decision support, administrative tasks-faster and, in some cases, with enhanced accuracy. At the same time, Al's risks warrant. serious consideration.

As healthcare Al moves from promise to practice, we must mitigate its potential to exacerbate biases, privacy violations, access divides, and health inequities. We must also ensure that Al-enabled health technologies are safe for patients.

To steer the healthcare industry toward a safe, effective rollout of AI technologies, we need rigorous research and evaluation.

Interest, Adoption, and a Window for Gathering Evidence

The Algorithm Is In: Is Adoption of Healthcare Al Outpacing **Understanding**?



Algorithms and Disparities

Network Open.

Special Communication | Health Informatics

Guiding Principles to Address the Impact of Algorithm Bias on Racial and Ethnic Disparities in Health and Health Care

Marshall H. Chin, MD, MPH; Nasim Afsar-Manesh, MD, MBA, MHM, Arlene S. Bierman, MD, MS; Christine Chang, MD, MPH; Caleb J. Col Prashila Dullabh, MD; Deborah Guadalupe Duran, PhD; Malika Fair, MD, MPH; Tina Hernandez-Boussard, PhD, MPH, MS; Maia Hightow Anjali Jain, MD; William B. Jordan, MD, MPH; Stephen Konya; Roslyn Holliday Moore, MS; Tamra Tyree Moore, JD; Richard Rodriguez, N Lynne Page Snyder, PhD, MPH; Mithuna Srinivasan, PhD; Graig A. Umscheid, MD, MS; Lucila Ohno-Machado, MD, PhD, MBA

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/ 2812958

https://effectivehealthcare.ahrq.gov/products/racialdisparities-health-healthcare/research

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Impact of Healthcare Algorithms on Racial and Ethnic Disparities in Health and Healthcare



Digital Healthcare Equity Framework and Practical Guide

Evidence- and Consensus-Based Digital Healthcare Equity Framework



The advancement of digital healthcare technologies has resulted in many viable solutions that can improve healthcare delivery and outcomes. But all too often, the designers and implementers of these technologies have not intentionally considered the unique needs and capabilities of all applicable patient groups. Omitting equity considerations throughout the lifecycle of digital healthcare technologies can create new or exacerbate existing healthcare disparities.

This guide offers technology developers, health plans, and healthcare providers a step-by-step path for implementing the Evidence- and Consensus-Based Digital Healthcare. Equity Framework so they can intentionally consider equity across all phases of the digital healthcare lifecycle for patient-facing and clinician-facing healthcare solutions involving digital technologies.

GETTING STARTED!

 What's the Problem

 About the Framework

 Components of the Framework

 Implementing the Framework

 Using the Guide

 Steps for Digital Healthcare

Developers and Vendors

Steps for Health Systems, Health

Plans and Clinical Providers

Intended users

- Digital healthcare developers and vendors
- Health systems, health plans, and clinical providers

https://digital.ahrq.gov/health-it-tools-and-resources/digitalhealthcare-equity/digital-healthcare-equity-framework-andguide



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AHRQ Funding

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	TH	National Action Alliano Gare spectra public present	Topics - Programs - Research - Home Funding & Brants - Notice of Funding Opportunit	Data & Analytics - Tools - Funding & Grants - News - About -
	ANNIVERSARY	AHRQ Long COVID Care	Funding & Grants	Notice of Funding Opportunities
	Today's Research,	internal.	Notice of Funding Opportunities	
	Tomorrow's Healthcare		Research Policies	Grant announcements from the Agency for Healthcare Research and Quality for supporting research to improve the quality, effectiveness, accessibility, and cost effectiveness of health care.
		AHRQ Funding Opports Active diset and accessible	Funding Priorities	Sign up: Grant Announcements Email updates
			Training & Education Funding	
at's New		-	Grant Application, Review & Award Process	Request for Applications
Blogs	Quality & Parket Soluty		Post Award Grants Management	Requests for Applications (RFAs) are issued to invite grant applications in a well-defined scientific area to stimular activity in AHRQ programmetic research priority areas. A single application receipt date is specified, and the
			Contracts	announcement identifies the amount of funds earnished for the initiative and the number of awards likely to be funded, Applications are evaluated for responsiveness to the RFA before review. Applications received in response t a particular RFA are reviewed by an appropriate AHRQ Study Section or by a special review group.
				All FEAs are published in the hits Guide for Gronts and Controlls
htt	ps://www.ahrq.gov	۲ <u>/</u>		Program Announcements

Program Announcements

Program Announcements (PAs) describe continuing, new, or expended program interests for which grant or

https://www.ahrq.gov/funding/fund-opps/index.html



Notices of Funding Opportunities, Program Announcements, and Requests for Applications

Program Announcements

Program Announcements (PAs) describe continuing, new, or expanded program interests for which grant or cooperative agreement applications are invited. Applications in response to PAs are reviewed in the same manner as unsolicited grant applications (i.e., by peer review committees of the AHRQ Initial Review Group [IRG]).

All PAs are published in the NIH Guide for Grants and Contracts.

PA Number	Title		
PA-24-205	Research to Advance the Science of Primary Care (R01)		
PA-24-156	AHRQ Health Services Research Demonstration and Dissemination		
PA-24-155	AHRO Small Health Services Research Grant Program (R03)		
PA-24-154	AHRQ Health Services Research Projects (R01)		
PA-24-093 Systems-Based Approaches to Improve Patient Safety I Improving Healthcare Worker Safety and Well-Being (R Trial Optional)			
PA-23-291	AHRQ Understanding and Improving Diagnostic Safety in Ambulatory Care: Incidence and Contributing Factors (R01)		

PA-22-048	Large Health Services Research Demonstration and Dissemination Projects for Combating Antibiotic-Resistant Bacteria (CARB) (R18) • Notice of Clarification • Notice of Change: Clarification		
PA-22-047	Large Research Projects for Combating Antibiotic-Resistant Bacteria (CARB) (R01) • Notice of Clarification • Notice of Change: Modification of Application Review Information		
PA-21-265	Large Research Projects for Prevention of Healthcare-Associated Infections (R01) • Notice of Clarification		
PA-21-264	Large Health Services Research Demonstration and Dissemination Projects for Prevention of Healthcare-Associated Infections (R18) • Notice of Clarification		
PA-21-164	Using Innovative Digital Healthcare Solutions to Improve Quality the Point of Care (R21/R33 - Clinical Trial Optional)		



https://www.ahrq.gov/funding/fund-opps/index.html



Reaching Out with Questions

Part 1. Overview Informa	tion
Participating Organization(s)	Agency for Healthcare Research and Quality (w/94Q)
	NOTE. The policies, guidelines, terms, and conditions stated in Where this Funding Opportunity Announcement (FOA) provides guidance provided in the grant application form, please follow th
	Also note that AHRQ has different page limits than NLH for the a each individual FCA.
Components of Participating Organizations	Agency for Healthcare Research and Quality (AHRQ) //ttps://ww
Funding Opportunity Title	Using Innovative Digital Healthcare
	the Point of Care (R21/R33 - Clinica
Activity Code	R21/R03 Phased Innovation Award
Announcement Type	New
Related Notices	April 08, 2024 - Notice of Intent to Publish a Funding Opportuni Solutions to Improve Quality at the Point of Care (R21/R33 - Cil
	NOT-OD-23-012 Reminder, FORMS-H Grant Application Forms January 25, 2023 - New Grant Application Instructions Now Ava
	NOT-OD/22-190 - Adjustments to NIH and AHRO Grant Applica 2022
	October 28, 2021 - Reminder, FORMS-G Grant Application For January 25, 2022 - New Grant Application Instructions New Ava
	August 5, 2021 - New NIH "FORMS-G" Grant Application Form

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Section VII. Agency Contacts We encourage inquiries concerning this funding opportunity and welcome the opportunity to answer questions from potential applicants. Application Submission Contacts eRA Service Desk (Questions regarding ASSIST, eRA Commons, application errors and warnings, documenting system problems that th submission issues) Finding Help Online: http://grants.nih.gov/support/ (preferred method of contact) Telephone: 301-402-7469 or 866-504-9552 (Toll Free) Grants.gov Customer Support (Questions regarding Grants.gov registration and Workspace) Contact Center Telephone: 800-518-4726 Email: support@grants.gov Grants Info (Questions regarding application instructions and process, finding NIH grant resources) Email: GrantsInfo@nih.gov (preferred method of contact) Telephone: 301-480-7075 Scientific/Research Contact(s) Agency for Healthcare Research and Quality Center for Evidence and Practice Improvement (CEPI) Division of Health Information Technology Telephone: 3301-427-1505 Email: BigitalHealthcareResearch@ahrq.hhs.gov (preferred method of contact) Peer Review Contact(s) Boris Aponte Agency for Healthcare Research and Quality Office of Extramural Research, Education and Priority Populations Division of Scientific Review Telephone: 301-427-1396 Email: Boris.Aponte@AHRQ.hhs.gov

Examine your eRA Commons account for review assignment and contact information (information appears two weeks after the submissi

Financial/Grants Management Contact(s) Brian Campbell Agency for Healthcare Research and Quality



Special Emphasis Notices

- Particular areas of study in which AHRQ would like to see applications
 - Not necessarily tied to any specific funding announcement
- Examples
 - Advancing health and healthcare equity
 - Patient-reported outcomes and patient contextual data to improve quality and outcomes in ambulatory care through health information technology
 - Digital healthcare safety

https://www.ahrq.gov/funding/priorities-contacts/specialemphasis-notices/index.html





Notice of Intent: AI and Patient Safety

- Examining the Impact of Artificial Intelligence (AI) on Healthcare Safety (R18)
- Research that supports healthcare safety by determining:
 - Whether and how certain breakthrough AI systems can affect patient safety
 - Significant advance, development, or achievement that removes a hazard or barrier to progress in healthcare processes
 - How AI systems can be safely implemented and used
 - Workflow integration, usability, human-computer teaming, and governance

<u>https://grants.nih.gov/grants/guide/notice-files/NOT-</u> <u>HS-24-014.html</u>



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