



AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



# AHRQ's Digital Solutions to Support Care Transitions Challenge

## Challenge Overview

March 5, 2020

<https://www.ahrq.gov/mcctransitions-challenge>

# AGENDA



1. Challenge Purpose
2. Challenge Themes:
  - ▶ Care Transitions
  - ▶ Multiple Chronic Conditions
  - ▶ Digital Solutions
  - ▶ Interoperability
3. Timeline / Prize Structure / Submission Requirements
4. Evaluation Criteria
5. Submission Process
6. Q&A

# CHALLENGE PURPOSE



- The challenge purpose is to **develop interoperable health information technology (IT) solutions that engage patients and family caregivers during care transitions** from inpatient hospital care to home.
- AHRQ seeks solutions that **ease administrative and information management burdens**, and **support patient activation** and engagement, especially among Americans that may have low health literacy or limited English language proficiency.
- **User-centered designed** solutions will **improve care communications during transitions**, develop and use **standardized processes** for leveraging and **transferring data from electronic health records**.

# SPEAKER INTRODUCTION: CARE TRANSITIONS



- Introduction of Speaker

- ▶ Priscilla Novak, PhD

- Program Analyst, Office of the Director
- Began career at AHRQ in 2012
- Projects have included:
  - Dissemination of patient-centered outcomes research findings through clinical decision support systems
  - Dissemination of health IT research findings
- Area of research expertise is health disparities among people with serious psychological distress and co-occurring physical health conditions.



**Priscilla Novak**  
*Program Analyst, Office of  
the Director, AHRQ*

# CHALLENGE THEME: CARE TRANSITIONS



- This challenge focuses on hospital-to-home care transitions.
- Typically, patients with acute/serious health problems, are admitted to hospital for treatment of one specific issue – often the care plan given to them at discharge includes information specific to the one condition, and may not address the other health issues.
- People with multiple chronic conditions and their families have to manage all their conditions.
- For purposes of this challenge, care transitions are transfers from an inpatient setting to home.
- The communications between hospital > patient > primary care provider are not always transitioned smoothly or in a timely manner.
- Most issues arise in communication of information between *what happened in the hospital* and *what the care plan is for the patient at home*.



**Priscilla Novak**  
Program Analyst, Office of  
the Director, AHRQ

# CHALLENGE THEME: CARE TRANSITIONS



- Currently, many electronic medical records do not enable seamless information transmission from hospital setting to the patient's regular health care provider.
- This challenge is about how information can be seamlessly transferred from the hospital to the patient and their principal healthcare delivery team so everyone has the information needed for appropriate followup.
- The need is to address people, process, and technology to send and receive care plans and optimize medication reconciliation.
- Digital care plans need to be sent to the various providers that care for a patient, as those with multiple chronic conditions often see multiple providers.
- Winning solutions in this challenge would enable patients, families, and caregivers to receive and understand hospital discharge instructions and care plans while easing administrative burden on physicians, nurses, and staff at discharging hospitals.



**Priscilla Novak**  
*Program Analyst, Office of  
the Director, AHRQ*

# CHALLENGE THEME: CARE TRANSITIONS



## ADDITIONAL RESOURCES

- [AHRQ Health Literacy Universal Precautions Toolkit](#): Toolkit can help primary care practices reduce the complexity of healthcare, increase patient understanding of health information, and enhance support for patients of all health literacy levels.
- [Medications at Transitions and Clinical Handoffs \(MATCH\) Toolkit for Medication Reconciliation](#): The MATCH toolkit features a step-by-step guide for hospitals to improve medication reconciliation processes as patients move through the healthcare system.
- [Re-Engineered Discharge \(RED\) Toolkit](#): This toolkit assists hospitals, including those that serve diverse populations, improve their hospital discharge process to reduce avoidable readmissions and post-hospital emergency department visits. A guide for patients and families, available in English and Spanish, was developed as part of the toolkit.
- [Transitioning Newborns from NICU to Home](#): This toolkit includes resources for hospitals that wish to improve safety when newborns transition home from their neonatal intensive care unit (NICU) by creating a Health Coach Program, tools for coaches, and information for parents and families of newborns who have spent time in the NICU.



**Priscilla Novak**  
*Program Analyst, Office of  
the Director, AHRQ*

# SPEAKER INTRODUCTION: MULTIPLE CHRONIC CONDITIONS



- Introduction of Speaker

- ▶ Dawn Wiest, PhD

- Director, Research & Evaluation

- Camden Coalition of Healthcare Providers

- ▶ Has nearly two decades of experience designing, leading, and implementing research and evaluation projects in academic and organizational settings

- ▶ Has taught data analytics, database management, statistics, research, and mixed-methods evaluation approaches to graduate and undergraduate students at research universities, and has trained workers in non-profit organizations to build competency in those areas

- ▶ At the Camden Coalition, supported the development of the organization's cross-sector, integrated data infrastructure

- ▶ Leads various data analytics, evaluation, and research projects to assess and publicize the impact of the Camden Coalition's and National Center's initiatives to improve care for people living with complex health and social needs

- ▶ Oversees the development and implementation of a continuous quality improvement framework for complex care interventions and clinical redesign initiatives



**Dawn Wiest**

*Director, Research &  
Evaluation, Camden  
Coalition of Healthcare  
Providers*

# CHALLENGE THEME: MULTIPLE CHRONIC CONDITIONS



- A majority of older adults have multiple chronic conditions
- Examples of chronic conditions that often coincide include diabetes, hypertension & high cholesterol; cardiac disease, obesity & diabetes; anxiety, depression & pain
- Presents trouble for care coordination and care planning specifically with *Fragmentation*: the disconnect between the care being delivered, usually for a specific condition; consideration of the patient's whole health profile; and patient's own experiences, preferences, and goals
- Primary care may already be involved, and additional fragmentation can occur when specialty care must be introduced
- Increased patient complexity creates more opportunity for patients to “slip through the cracks” of care delivery models
- Challenges arise in populations with MCC in poor and disenfranchised communities, often due to limitations in achieving a care continuum as level of social complexity increases
- Behavioral health conditions commonly intersect with medical chronic conditions and are usually more difficult to coordinate



**Dawn Wiest**  
*Director, Research &  
Evaluation, Camden  
Coalition of Healthcare  
Providers*

# CHALLENGE THEME: MULTIPLE CHRONIC CONDITIONS



- Presenting information alone, to providers, may not be enough
- Many providers are facing increased load in terms of health care demand
- Many providers, even with the right information, may not know the best intervention (e.g., community resources for the patient, assessments, guidance, and resources)
- Even though resources may be available, they may be outdated or may not suit an exact patient's needs or interests
- Privacy and comfort must be taken into account when considering patient data, and patient/provider interaction
- Essential to understand patient experience of living with MCC. To have any chance of success, proposed solution must have at its heart the goals and interests of patients.



**Dawn Wiest**  
*Director, Research &  
Evaluation, Camden  
Coalition of Healthcare  
Providers*

# CHALLENGE THEME: MULTIPLE CHRONIC CONDITIONS



## ADDITIONAL RESOURCES

- Experiences of people living with MCC:
  - ▶ <https://bmjopen.bmj.com/content/9/3/e023345.abstract>
  - ▶ <https://jamanetwork.com/journals/jamacardiology/article-abstract/2503084>
  - ▶ <https://link.springer.com/article/10.1007/s12325-016-0369-7>
- Experiences of healthcare providers caring for people with MCC:
  - ▶ <https://link.springer.com/article/10.1186/s12877-019-1345-2>
- MCC and medical care:
  - ▶ <https://annals.org/aim/article-abstract/2722548/caring-patients-multiple-chronic-conditions>
  - ▶ <https://www.sciencedirect.com/science/article/abs/pii/S155174111830069X>
- Chronic illness and role of socio-structural factors:
  - ▶ <https://link.springer.com/article/10.1186/s12877-018-0925-x>
  - ▶ <https://healthitanalytics.com/features/combating-chronic-disease-through-the-social-determinants-of-health>



**Dawn Wiest**  
*Director, Research &  
Evaluation, Camden  
Coalition of Healthcare  
Providers*

# SPEAKER INTRODUCTION: DIGITAL SOLUTIONS



- Introduction of Speaker

- ▶ Anand Parekh, MD

- Chief Medical Advisor, Bipartisan Policy Center
- Completed a decade of service at the U.S. Department of Health and Human Services, as deputy assistant secretary for health from 2008 to 2015
- Led [HHS Multiple Chronic Conditions Initiative](#) and development of the [Strategic Framework on Multiple Chronic Conditions](#)
- Board-certified internal medicine physician
- Fellow of the American College of Physicians
- Adjunct assistant professor of medicine at Johns Hopkins University, and
- Adjunct professor of health management and policy at the University of Michigan School of Public Health
- Has spoken widely and written extensively on a variety of health topics such as chronic care management, population health, value in health care, and the need for health and human services integration
- Native of Michigan, received a B.A. in political science, an M.D., and an M.P.H. in health management and policy from the University of Michigan.



Anand Parekh  
*Chief Medical Advisor,  
Bipartisan Policy Center*

# SPEAKER INTRODUCTION: DIGITAL SOLUTIONS & USER-CENTERED DESIGN



- Introduction of Speaker

- ▶ Maia Laing

- Senior Business Consultant,  
Immediate Office of the Secretary/Office of the CTO  
U.S. Department of Health & Human Services
- Identifies innovative solutions to complex challenges  
within HHS
- Has worked for the Centers for Medicare & Medicaid  
Services to implement a process improvement  
mindset across the center
- Holds a deep passion for improving delivery of care  
and has worked on projects in both Federal  
Government and non-profit settings
  - including U.S. News and World Report top 10  
ranked Brigham and Women’s Hospital in  
Boston, MA



**Maia Laing**  
*Senior Business  
Consultant, Office of the  
Chief Technology Officer,  
HHS*

# CHALLENGE THEME: DIGITAL SOLUTIONS & USER-CENTERED DESIGN



- Examples of current digital solutions in health care:
  - ▶ Apps, patient portals, symptom trackers
- Many of today's digital healthcare solutions are designed for the system or payer (e.g., focus on billing and claims)
- User-centered design: Designing tools and processes that align to and drive value for the patient
  - ▶ e.g., patients unable to retrieve immunization records, designing a tool
- Implementing user-centered design:
  - ▶ First ask: for whom are we trying to solve this problem?
  - ▶ Then engage those users through a series of discussion to validate the problem and test iterations of a solution
  - ▶ It should never be one user, but as many as needed to create a unified persona for whom you want to create a solution
  - ▶ Iterative user-centered design means creating versions of your solution, having the user test and validate them, measuring their feedback, making adjustments to your solution, and presenting it again as an improved version



**Maia Laing**  
*Senior Business  
Consultant, Office of the  
Chief Technology Officer,  
HHS*

# CHALLENGE THEME: DIGITAL SOLUTIONS & USER-CENTERED DESIGN



- Developing solutions to today's standards means:
  - ▶ Using agile development methodologies, which enhance a user-centered design experience (user stories, epics)
  - ▶ Leveraging secure open source and interoperable resources to allow for seamless integrations
  - ▶ Explore the full landscape of environments in which solutions need to be implemented (e.g., rural/limited access healthcare settings)
- Historically, implementing digital solutions in healthcare has been structured around the electronic health record, but under the influence of the provider as the decision maker
- Moving forward, we need to explore open solutions (e.g., APIs and standards) to influence more welcoming environments of innovation, including telehealth, telepharmacy, and more control shifting to the patient to allow them to better interact with the healthcare system
- Future digital healthcare solutions will give control to the patient to have them more involved in their healthcare processes and supporting increased access to care



**Maia Laing**  
*Senior Business  
Consultant, Office of the  
Chief Technology Officer,  
HHS*

# CHALLENGE THEME: DIGITAL SOLUTIONS & USER-CENTERED DESIGN



## ADDITIONAL RESOURCES

- HHS Applying Human-Centered Design for Health IT
  - ▶ <https://www.hhs.gov/cto/blog/2020/01/28/listening-to-real-people-is-a-critical-step-in-the-solution-design-process.html>



**Maia Laing**  
*Senior Business  
Consultant, Office of the  
Chief Technology Officer,  
HHS*

# CHALLENGE THEME: INTEROPERABILITY



- FHIR is a standard for healthcare data exchange, published by Health Level 7 (HL7)®
- Essentially lays groundwork for electronic health record systems to “speak” with third-party applications using a common language.
- As of 2019, FHIR is used in 84% of hospitals and by 64% of clinicians
- Currently used by



Clinical and Public Health Laboratories	Immunization Registries	Quality Reporting Agencies
Standards Development Organizations	Regulatory Agency Payors	Pharmaceutical Vendors
EHR, PHR Vendors	Equipment Vendors	Clinical Decision Support Systems Vendors
Healthcare IT Vendors	Lab Vendors	Local and State Departments of Health
Medical Imaging Service Providers	Healthcare Institutions (hospitals, long term care, home care, mental health)	

# CHALLENGE THEME: INTEROPERABILITY

- The resource leverages a tagging system, common in application program interfacing technologies (e.g., JSON, XML) to delineate data resources
- FHIR Resources include:
  - ▶ Patient           Practitioner
  - ▶ Organization    Observation
  - ▶ Specimen        Device
  - ▶ Claim           Appointment
- HL7 documentation includes:
  - ▶ Conformance Rules       Extensibility
  - ▶ Terminologies           Mappings to other standards
- A large community exists of support for FHIR developers on:
  - ▶ Stack Overflow            FHIR.org
  - ▶ InterSystems              GitHub



# CHALLENGE THEME: INTEROPERABILITY

- Additional FHIR Resources:

- ▶ HL7 FHIR Index Resource (standard documentation)
  - <http://hl7.org/fhir/>
- ▶ Everything You Need to Know About SMART on FHIR - HealthTech Magazine
  - <https://healthtechmagazine.net/article/2018/10/everything-you-need-know-about-smart-fhir-perfcon>
- ▶ Apps leveraging FHIR – SMART App Gallery
  - <https://apps.smarthealthit.org/>

- FHIR Developer Communities

- ▶ Stack Overflow
  - <https://stackoverflow.com/tags/hl7-fhir/hot>
- ▶ InterSystems
  - <https://community.intersystems.com/tags/fhir>
- ▶ FHIR.org
  - <http://community.fhir.org/>
- ▶ GitHub
  - <https://github.com/FHIR>



# TIMELINE AND PRIZE STRUCTURE



- Total Prize Pot for challenge: \$175,000
  - Phase 1 Prizes
    - ▶ Up to five semifinalists: \$20,000 each
  - Phase 2 Prizes
    - ▶ 1<sup>st</sup> Prize Winner: \$50,000
    - ▶ 2<sup>nd</sup> Prize Winner: \$25,000
- Timeline
  - ▶ Launch date: **February 10, 2020**
  - ▶ Webinar: **March 5, 2020**
  - ▶ Submission deadline: **April 6, 2020, 5:00 p.m. ET**
  - ▶ Phase 2: **May – October**
  - ▶ Expected date that winners will be announced between **November 14-18, 2020**

# SUBMISSION REQUIREMENTS



Challenge participants will submit a narrative document, no more than 5 pages, including the following:

- A **description of the information need(s) your solution aims to solve;** the **target audience** for the proposed tool.
- An **overview of your solution** and your approach to its development **using user-centered design.**
- The proposed **plan to reduce burden** of information transfer during hospital discharge.
- **Feasibility** of tailoring content with the tool **to address varying levels of health literacy** and English language proficiency.
- Information about the tool, with **details on its platform, development structure** (i.e., OS), **and capabilities**, which should include but is not limited to:
  - ▶ How the proposed tool will **leverage existing standards.**
  - ▶ **Usability** of the proposed tool.
  - ▶ How the proposed tool would **protect the privacy and security of the patient** and patient data.

# SUBMISSION REQUIREMENTS



Challenge participants will submit a narrative document, no more than 5 pages, including the following:

- A **work plan** on how you would build out the proposed tool if selected as a semifinalist for Phase 2.
- **Description of the project team** and experience. Resumes may be submitted as Appendix 1. (No more than 10 pages.)
- **Additional reports and data sources** that reviewers can use to confirm accuracy of submission may be submitted as Appendix 2. (No more than 10 pages.)
- **Images, graphics, diagrams, and flowcharts** of the proposed tool may be submitted as Appendix 3. (No more than 10 pages.)
- The application may be supplemented with a **short** (2-3 minute) **video submission**. If a video is submitted, applicants will be expected to adhere to the following [AHRQ video guidelines](#).

# EVALUATION CRITERIA



## **Understanding of the Problem and User-Centered Design (30%)**

- Effectiveness of the applicant's statement and understanding of the need to support patients and caregivers during care transitions.
- Description of the user-centered design methodology that will be used to develop the tool. Applicant's plan to address the needs of both hospitals and health systems discharging patients, and the patients, families, and caregivers being discharged.

# EVALUATION CRITERIA



## **Proposal to Address Needs of Patients and Providers (40%)**

- How well the proposal addresses the information needed for successful care transitions among people with MCC and assists patients and caregivers in understanding hospital discharge instructions and care plans. A list of evidence-based resources to address discharge needs is provided in the “glossary and resources.”
- Plan for design of the tool, including ease-of-use for patients, caregivers, and the integrated care team (physicians, nurses, other professionals and para-professionals); plan for how the proposed tool will reduce burden.
- How innovative the proposed tool is and its ability to be tailored to culturally, linguistically, and technologically diverse audiences, including users with low health literacy or limited English language proficiency.

# EVALUATION CRITERIA



## Technological Innovation and Plan for Scaling (30%)

- Description of how the solution will be based on interoperable HL7/FHIR interoperability standards.
- Plan to leverage existing evidence-based standards.
- Description of how the solution would protect the privacy and security of patient data.
- How well the proposed tool can be integrated into routine workflows.
- Description of how the prototype would be developed if selected for Phase 2 of the challenge.
- Availability of open source version of the tool.

# SUBMISSION PROCESS



**At the bottom of the challenge page (platform),  
click JOIN CHALLENGE**

## Digital Solutions to Support Care Transitions

### Summary:

Create interoperable digital health solutions that are developed with user-centered design, to improve care communications during transitions, develop and use standardized processes for leveraging and transferring data from electronic health records (FHIR), and address the people, processes, and technology needed to send, receive, and use care plans and optimize medication reconciliation.

### Description:

The Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services (HHS), is announcing a competition to develop interoperable health information technology (IT) solutions that engage patients and family caregivers during care transitions from in-patient hospital care to home (community living). To achieve this, AHRQ is interested in receiving applications that propose technological solutions that ease administrative and information management burdens, and support patient activation and engagement, especially among Americans that may have low health literacy or limited English language proficiency. These technical solutions should leverage evidence-based standards. FHIR Standards are valuable to AHRQ as design and architectural components of solutions submitted to this Challenge. Solvers will clearly demonstrate in their submissions how their solution uses standards and will be built to incorporate updates.

### Prize Amount:

175,000

### Tags:



**JOIN CHALLENGE**

# SUBMISSION PROCESS



If you don't yet have an account, create one – you can use your login from Facebook, Google, Amazon, or LinkedIn



At the top of your page, once joined and logged in, click **SUBMIT SOLUTION**

**SUBMIT SOLUTION**

Overview Submissions Phases FAQ Rules My Team Discussion

**AHRQ** Agency for Healthcare Research and Quality

Title:  
Digital Solutions to Support Care Transitions

Summary:  
Create interoperable digital health solutions that are developed with user-centered design, to improve care comm electronic health records (FHIR), and address the people, processes, and technology needed to send, receive, an

# SUBMISSION PROCESS

On the Submission Builder page:

1. Enter a submission title
2. Choose a file to upload
3. Click **UPLOAD**
4. Once uploaded, click **SUBMIT**

## Submission Builder

Valid File Extensions:

avi, mpg, mov, mp4, jpeg, tiff, gif, bmp, png, svg, 3ds, max, pdf,

Submission title:

Submission title

Test Submission

1

Choose File testDoc.pdf

2

UPLOAD

3

SUBMIT

4

# SUBMISSION PROCESS



**On the Submissions page, your most recent submission will always be the one to be considered as your final/official submission.**

**You can download or withdraw it**

<a href="#">Overview</a>	<a href="#">Submissions</a>	<a href="#">Phases</a>	<a href="#">FAQ</a>	<a href="#">Rules</a>	<a href="#">My Team</a>	<a href="#">Discussion</a>	<a href="#">Winner</a>		
Team/Solver	Date					File	Download Solution	Submission Type	Actions
ccc Solver	2020/02/12 05:04:36 PM +01:00					testDoc.pdf	<a href="#">Download</a>	Official	<a href="#">WITHDRAW</a>

# QUESTIONS



Q & A

<https://www.ahrq.gov/mcctransitions-challenge>