Supporting Value-Based Care Transformation through Interoperability and Care Coordination

In recent years, the U.S. Department of Health and Human Services has shifted the focus of healthcare delivery away from fee-for-service payments towards value-based care programs. Value-based care policies aim to improve patient outcomes and lower healthcare costs by emphasizing care coordination and quality over quantity of services.[1] These goals intersect with another core objective of the health system: bringing greater patient-centeredness to research and care.

> "When I think about the value these care models bring to patients, I really think about the actual goals of accountable care and value-based care, which have to do with clinical integration and visibility across the continuum of care."
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Making the transition to a patient-centered, value-based healthcare system involves several significant clusters of activity to strengthen healthcare data infrastructure: gathering patient perspectives and preferences; collecting information on social determinants of health (SDOH); and increasing data interoperability to support care coordination.[2] These changes will help researchers and clinicians use data to maximize care coordination, and draw upon robust patient-centered research evidence to provide quality patient care.

Under the Office of the Secretary Patient-Centered Outcomes Research Trust Fund (OS-PCORTF), the Assistant Secretary for Planning and Evaluation (ASPE) supports and coordinates a range of cross-agency projects to address these challenges by: 1) aggregating data across sources to better reflect patient voices among vulnerable populations; 2) building greater interoperability across electronic health record (EHR) systems to improve coordination across the continuum of care, and 3) linking and standardizing metrics for the collection of social determinants of health data to improve care and reduce health disparities (see Exhibit 1).

Exhibit 1. Information Flow across the Health System to Support Value-Based Care[3]

Gathering Patient Perspectives.
The delivery of value-based care depends in part upon discussing patient perspectives before devising care plans. Patients are more likely to adhere to care plans when they result from collaborative assessment of patient needs, values, and preferences. It also means understanding patient conditions and engaging their other providers to improve the continuity of their care.[4] This is especially important among vulnerable populations and patient populations with multiple chronic conditions who have complex health needs, multiple providers, and often undergo frequent care transitions. Several OS-PCORTF projects focus on bringing patient voices into care planning, coordination, and decision-making.

Data Capacity for Patient-Centered Outcomes Research through Creation of an Electronic Care Plan for People with Multiple Chronic Conditions

In 2019, the Agency for Healthcare Research and Quality (AHRQ) and the National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases (NIH/NIDDK) initiated a project on *Data Capacity for Patient-Centered Outcomes Research through Creation of an Electronic Care Plan for People with Multiple Chronic Conditions (MCCs)*. The project team is seeking to improve care coordination across the continuum of care for people with MCCs by developing an interoperable, accessible provider-facing electronic care (eCare) plan and application for people living with MCCs, beginning with chronic kidney disease and with planned expansion into cardiovascular disease, diabetes, and opioid use disorder.

KEY PRODUCTS

- **Collaboration Website**: To manage tasks, share documents, and facilitate discussions and input from the community.
- **Draft IG**: To implement the eCare Plan software application; the final version will incorporate patient considerations.
- **Draft App**: The clinician-facing and provider-facing app code and materials; the final version will incorporate patient considerations.
- **HL7 Connect-a-thon materials**: Documents testing of the app and the IG.
- Open source repositories for eCare plans will be posted through GitHub and AHRQ's CDS Connect

PROJECT AGENCIES: AHRQ AND NIH/NIDDK

The eCare plan is the first patient-centered eCare plan that aggregates data from multiple sectors, meaning it can serve as a record of the patient's prioritized health and social concerns, goals, interventions, and health status over time. The team is also developing a patient-facing app that allows users to enter their own data on patient reported outcomes, social risks and needs, and person-centered goals and preferences. The app will amplify patient voices across care settings and enhance the availability of essential data for value-based care and research, including data that have historically been lacking within EHRs. The project is currently developing value sets that are part of the Fast Healthcare Interoperability Resources (FHIR) profiles and is in the process of launching the pilot eCare Plan tool for patient use.

Validating and Expanding Claims-based Algorithms of Frailty and Functional Disability for Value-based Care and Payment

The FY 2019 project *Validating and Expanding Claims-based Algorithms of Frailty and Functional Disability for Value-based Care and Payment* is a collaboration among ASPE, AHRQ, and the Centers for Disease Control and Prevention (CDC). The team will refine and validate existing claims-based algorithms to identify functional risk factors within EHR-based data. These functional risk factors play an important

KEY PRODUCTS

- Final Algorithms: Validated EHR and claims-based algorithms of frailty and functional disability [anticipated]
- Final Report [anticipated]
- Implementation Guide [anticipated]

PROJECT AGENCIES: ASPE, AHRQ, AND CDC

role in research studies, quality-related risk-adjustment, and for evaluating performance and payments in value-based care programs. The project team has conducted preliminary research on four categories of functional risk factors: frailty, predictors of functional dependence, mental and behavioral health disorders, and other potentially disabling conditions. The team has also conducted preliminary analyses of the frailty algorithm using post-acute care assessment data. The final set of validated algorithms will enhance claims-

based and EHR-based research being conducted by researchers, health systems, and payers; improve the tools available to identify patients' physical and cognitive risk profiles; and support their use in value-based payment programs and research studies. The final algorithms and implementation guide will be publicly available through CMS' Chronic Conditions Warehouse (CCW).

Interoperability of EHR Data.

Value-based care hinges on coordination among practitioners, meaning that easy access to patient records and data is critical for successful wraparound care. Inaccessible or incomplete patient information creates a barrier to coordinated care, and makes providing effective preventative care nearly impossible.[5] The adoption of EHR systems coupled with ongoing efforts to standardize electronic data and improve interoperable sharing have increased the data available for value-based care, but many challenges remain. To improve care coordination under value-based care, researchers and policy professionals need better ways to access data from different EHR systems without burdening healthcare providers.

Making Electronic Health Record Data More Available for Research and Public Health

The CDC project *Making Electronic Health Record Data More Available for Research and Public Health*, which began in FY 2019, is working to build greater interoperability across EHR systems. Specifically, the project aims to improve the availability and use of patient data by granting researchers and public health agencies easier access to EHR data without burdening providers. Better access to data will enable patient-centered research to understand how best to deliver value-based care. The project is developing a scalable, adaptable FHIR-based app through which healthcare facilities and public health agencies will receive EHR extracted data for three diverse uses: hepatitis C, cancer reporting, and healthcare surveys. The app has been adapted by a strategic initiative called eCR Now[6] that is deploying the electronic care reports (eCR) to improve and accelerate access to laboratory data shared between providers and public health professionals, assisting timely reporting on potential COVID-19 cases. Additionally, the eCR includes comprehensive reporting options for demographic details that will aid in research and care delivery and tools that assist contact tracing efforts.[7]

KEY PRODUCTS

- **Report:** A landscape analysis to evaluate implementation of FHIR and other standards among the EHR vendors [link pending]
- **Website:** A public-facing website, detailing the project's goals and activities.
- **Public-Facing Code:** The code for products developed for this project are available.

PROJECT AGENCIES: CDC

Collecting Social Determinants of Health.

Ensuring that value-based care is patient-centered requires the collection and analysis of data on SDOH.[8,9] SDOH data provide researchers and clinicians with a better understanding of the broad array of factors that affect patient health and outcomes. Many healthcare systems are using or planning to use SDOH data to improve care coordination and the quality of healthcare services for vulnerable populations, and to connect their patients with other supportive services. Increasing SDOH data collection on the macro level also enables researchers to study trends in SDOH that can be used to develop value-based care strategies for improving health at the population level.[10,11] Research has demonstrated that for many SDOH factors, small-area data (at the community or sub-county level) may be necessary to conduct meaningful analyses and target services, but they are not typically available. Multiple federal initiatives are integrating SDOH into value-based payment programs; however, SDOH data is not yet widely collected and data standards are still under development.

Enhancing Patient-Centered Outcomes Research: Creating a National Small-Area Social Determinants of Health Data Platform

AHRQ is addressing the need for granular, standardized SDOH data through the FY 2019 project *Enhancing Patient-Centered Outcomes Research: Creating a National Small-Area Social Determinants of Health Data Platform*. This project will leverage federal data sets and other publicly available data sources to develop a national standardized database with consolidated set of readily linkable SDOH variables at the small-area and other geographic levels. The project has developed a publicly available beta version of SDOH database files and their variable codebooks with 10 years of data in five SDOH domains related to: social context (e.g., age, race/ethnicity), economic context (e.g., income, unemployment), education, physical infrastructure (e.g., housing, crime, transportation), and healthcare context (e.g., health insurance). The files can be linked to other data by geography (county and zip code) and used by researchers working to better understand the impact of value-based care at a small-area level.

KEY PRODUCTS

- SDOH Database and Codebook (Beta Version) with support documentation and codebook.
- SDOH Visualization Tool on Poverty and Access to Internet.
- Environmental Scan of publicly available SDOH data.

PROJECT AGENCIES: AHRQ

Looking to the Future. As the transformation continues towards a patient-centered health system offering value-based care, increasingly sophisticated data, analytics and payment structures are required. Finding ways to develop greater interoperability of data is key to this transformation, as is the expansion of datasets related to SDOH, MCCs, laboratory results, and other key variables for patient and population health. This information will feed research and improve patient-centric clinical practice, and provide much needed data for measuring value-based care progress and assessing their quality and effectiveness.

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