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DeepDives

MODERNIZING the Health Data ECOSYSTEM

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From the editor's desk

Amy Kluber, Editor-in-Chief

Modernizing the Data Ecosystem

The health industry came together at the annual HIMSS conference in Chicago April 17-21 to showcase exciting developments in the realm of data interoperability. Our federal spotlight at the conference saw key discussions in these areas, including more insights on Centers for Disease Control and Prevention (CDC)'s latest organizational overhaul, federal electronic health records modernization, data security solutions and more about the vision for public health.

We spoke to leaders from both the Defense Department and Department of Veterans Affairs who provided more updates on their massive EHR programs and site rollouts.

CDC's newest office, created as part of an agency-wide initiative to transform public health, shared more about its role overseeing the National Public Health Data Strategy over the next two years. CDC leaders overall highlighted how incorporating new core data standards from the Office of National Coordinator for Health IT (ONC) are furthering their equity and interoperability missions.

Plus, keeping data shareable but secure within any digital modernization journey requires closer looks at the tools enabling those capabilities. Leaders at both NIST and Rubrik talked to us about how to protect data and recover from downtime. ❋

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Data Modernization Prepares Us for Future Health Crises, CDC Says

The Public Health Data Strategy is one element of a robust plan at CDC to create a modern data ecosystem for managing public health emergencies.

BY AMY KLUBER

Public health organizations need greater data modernization to act upon lessons learned from the COVID-19 pandemic, health IT leaders said at the annual HIMSS conference in Chicago.

"We are at a transformative moment to bring together the technology, the leadership, the resources to actually make the capabilities we need to keep Americans safe going forward," said Dylan George, director of operations for the Centers for Disease Control and Prevention's Center for Forecasting and Outbreak Analytics, at a panel. "We are in this transformational moment to build the better data, the better analytics for that better response."

George leads a somewhat new office established in 2021 to improve the nation's ability to prepare for and respond to infectious disease threats with data and analytics.

It's just one example of the agency's broader effort to modernize and better serve the public with real-time data. Another new office — the CDC's Office of Public Health Data, Surveillance, and Technology led by Jennifer Layden — is also contributing to the effort by owning the Public Health Data Strategy.

In the data modernization context, George's office is trying to improve the analytics to translate results to decision-makers. Layden's office is more focused on getting the better data to begin with.

"We're pulling together not just the data on the systems, but technology aspects in data policy standards, and recognizing that we can have the greatest technology out there, but we also have to address the policy, the processing, the governance," Layden said during the panel. "It's critical that we incorporate end-user design principles and really understand what the end user needs."

Partnerships will play a critical role to enable the data modernization ecosystem in public health. What most have not historically considered, especially

Dylan George

Director of Operations, Center for Forecasting and Outbreak Analytics, CDC

in the context of the pandemic, is that CDC is only one cog to the machine.

"Much of the information and control, and really authority, lies within state and local health jurisdictions. We like to yell at the CDC a lot … but the reality is, they can only give us back information that they're able to get in," said Dr. Anne Zink, chief medical officer at the Alaska Department of Health. "It's going to take all of us to solve this problem. … Do you ask the Department of Transportation to make Google Maps?"

Zink pointed to the example of having key information like the weather, maps and traffic analysis to be able to make real-time decisions about her estimated time of arrival for this panel appearance. The same should be said for public health decisions.

"We use data all the time, but at the state level, I had to put National Guard in our lab to enter one positive [COVID] test into three separate systems," she said. "This is not a technology issue, this is a policy issue and this is a priority issue."

Over the next two years, CDC leaders including Layden will focus on various milestones within the new Public Health Data Strategy to tackle some of these data issues and ensure the industry works together to make core data more accessible and interoperable for decision-makers.

In the face of future challenges, such as another pandemic, public health officials expect this plan to establish infrastructure to improve government response at all levels.

"We will have another pandemic," George said. "We need these systems to be ready, we need these systems to be more robust, and we need these systems to keep Americans safe in a time of crisis." ✺

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— Dylan George, Director Operations, Center for Forecasting and Outbreak Analytics, CDC

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How USCDI Advances Health Equity

The Office of the National Coordinator for Health IT has prioritized behavioral health data, which has disproportionate health equity impacts, in new data elements within the upcoming fourth version of USCDI.

Here is a look at some of those new data elements.

Health Status Assessments

Addresses more behavioral health with additions of: alcohol use, substance use and physical activity.

Medications

To further address the extent to which a patient adheres to clinical instructions for medications, ONC added medication instructions and medication adherence.

Goals

New elements enable the use and exchange of perspectives in treatment intervention preference and care experience preference.

Facility Information

A new data class entirely, facility information provides details to patients and providers regarding the physical location where care was received or services were provided, which is critical when care is received in multiple sites.

PARTNER INTERVIEW

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Evolving Cyber Threats Call for Robust Backups

Organizations need robust and secure backup data to have cyber-resilient IT systems that quickly react to evolving threats.

What are the new demands of backup and recovery for IT systems?

Rosiek Backup and recovery systems need to evolve and become cyber-resilient and cyber-enabling systems. Visibility into what data is stored in your backups and which systems — whether it be in the cloud, on premise or virtualized — is also critical to better prepare and react to evolving disasters or cyberattacks. You can't protect what you don't know you have. Knowing where sensitive data resides in your backups, and having historical change log tracking, is another new demand.

How have security challenges evolved as it relates to backup and recovery?

Rosiek Security challenges have evolved dramatically over the past few years. Organizations are starting to realize traditional backups aren't enabling rapid and effective recovery. Backups are one of the first things cyber threat actors target once they gain access to a victim's environment, according to more than 90% of organizations surveyed in Rubrik Zero Lab's latest report.

Organizations have prioritized some of their most critical data by identifying it for backups. This helps combat against cyber threats

Travis Rosiek
Public Sector CTO, Rubrik

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"It's now essential to have robust and secure backup data that is searchable, immutable and built around zero trust principles to help you rapidly recover. Playing whack-a-mole with your data backup recovery is a good way to slowly lose in the cyber domain."

— Travis Rosiek, Public Sector CTO, Rubrik

by identifying their critical data and where it resides. It's now essential to have robust and secure backup data that is searchable, immutable and built around zero trust principles to help you rapidly recover. Playing whack-a-mole with your data backup recovery is a good way to slowly lose in the cyber domain.

How does virtualization pose a unique challenge for organizations seeking the best backup solution?

Rosiek Virtualization adds a layer of complexity in backup and recovery because operating systems, applications and data all run and are dependent on the hypervisor in virtualized environments. Virtualized compute environments can be more dynamic in where they exist and operate and can scale on demand. Ensuring consistent backups of system data — and potentially the entire virtualization environment — is crucial to cyber resiliency.

The rapid ability to back up, analyze and recover virtualized environments to the second can create a large burden on backup administrators for organizations. Being able to live-mount virtual machines, and analyze and recover to a specific point in time is crucial to minimize the burden on your IT workforce as well as maximize the up time for your organization and customers. ❋
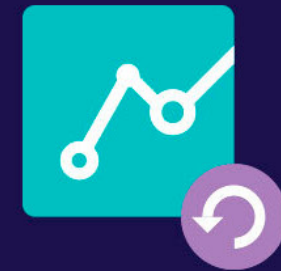
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# Leveraging Tech, Data to Create 'Health Equity by Design'

Leaders from ONC discuss how the concept is using data standards to ensure data privacy and equity in health care.

BY SARAH SYBERT

The Office of the National Coordinator for Health IT (ONC) is developing a new concept, called "health equity by design," to use and collect data in order to better identify health inequities and create mechanisms to mitigate health inequities.

"It's making sure that health equity is a forethought, not an afterthought, as we implement, design and build technology solutions — in the same way that there's privacy by design and security by design — that it's essential that we think about health equity by design when it comes to information technology systems," ONC Chief Medical Officer Tom Mason said at the HIMSS Conference in Chicago.

ONC is focusing a part of the concept on identifying, gathering and structuring data to better identify where inequities exist and develop upstream interventions. A task force at the agency identified key concepts and priority areas for implementing health equity by design, including data collection, data interoperability, the digital divide and artificial intelligence.
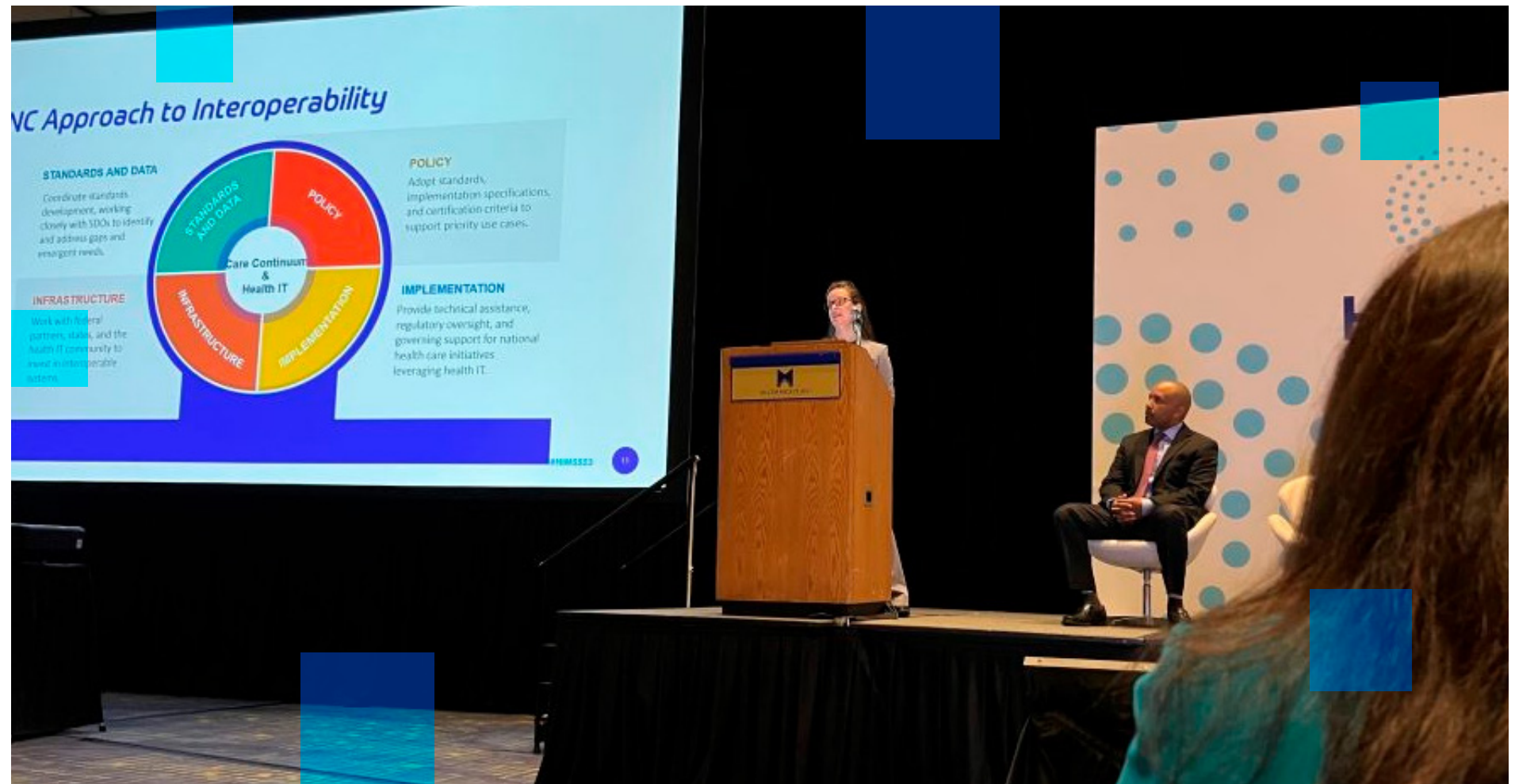
"If we can all be using that same baseline data and infrastructure, we can spend more money on the program and less money in building siloed systems, but we can also ensure that that information coming from clinicians can be used for lots of purposes that it needs to be," said Elisabeth Myers, deputy director of ONC's Office of Policy, at HIMSS.

ONC is also working to ensure data privacy and security to protect against discriminatory practices. As the agency works to standardize data, ONC can leverage tech tools like application programming interfaces (APIs), which aim to create pathways to ensure effective patient care, regardless of demographic or location.

"From policy point of view, how can we create an API that moves the set of data for a lot of different purposes so that we can start to make change? So that we can start to leverage APIs for single piece of data or multiple pieces of data without special effort?" Myers asked. "Clinicians need to be able to use an API to obtain data and share data in a dynamic way."

Ryan Argentieri, deputy director of the Office of Technology at ONC, said that APIs are not possible without a clear understanding and consistent definition of what the data needs to look like, which then enables the efficient exchange of information. This is where the U.S. Core Data for Interoperability (USCDI) comes into play.

The USCDI is a standardized set of health data classes and constituent data elements for nationwide, interoperable health information exchange. ONC recently released a draft fourth version of USCDI and plans to publish that in July 2023.

"We are really proud that we've gotten to a place where we feel like we've heard a lot of different interests from the underrepresented. Communities across the health care system," Argentieri said. "We are using these data elements because we want to have the information, not the anecdotal evidence, but the actual heart, understanding and knowledge of what root causes are, and then how best to solve them through technology and interoperability." ❁

Tom Mason

Chief Medical Officer, ONC

"It's making sure that health equity is a forethought, not an afterthought, as we implement, design and build technology solutions — in the same way that there's privacy by design and security by design — that it's essential that we think about health equity by design when it comes to information technology systems."

— Tom Mason, Chief Medical Officer, ONC

Live from HIMSS 2023

During the HIMSS 2023 conference, GovCIO Media & Research caught up with federal leaders spearheading improvements to patient experience, data management, electronic health records and information security to discuss their key projects and priorities.

The Tech Tools Boosting Veteran Experience

Nathan Sanfilippo, Executive Director, Multi-Channel Technology, Veterans Experience Office, VA

The Veterans Experience Office is developing new strategies to leverage data and technology to be the leading customer experience organization in government. The office's Executive Director of Multi-Channel Technology Nathan Sanfilippo joined us live from HIMSS 2023 in Chicago to explain the evolution of new tools and services like the VA: Health and Benefits mobile application and upcoming voicebot pilot, which incorporates human-centered design principles to meet the veteran where they are.

Big Data Helps NIH Researchers Innovate Critical Care Medicine

Sarah Warner, Data Scientist, Clinical Epidemiology Section, Critical Care Medicine Department, NIH

Decision-making in a clinical setting needs comprehensive, accurate and real-time data. In order to better care for patients, researchers and data scientists are innovating around the technology enabling access to key data from electronic health records driving decision-making. NIH's Sarah Warner, a data scientist in the Clinical Epidemiology Section of the Critical Care Medicine Department, discusses the strategies behind the big data efforts helping clinicians understand and improve treatment for critically ill patients, better define granular data elements that make up patient care, and inform public health policy more broadly.

DOD's EHR Approaches the 'End of the Beginning'

Bill Tinston, Director, FEHRM
Holly Joers, Program Executive Officer, DHMS

The "end of the beginning" is around the corner for MHS GENESIS. The departments of Defense and Veterans Affairs, along with the Coast Guard and now National Oceanic and Atmospheric Administration, are working together to create a single, common federal electronic health record. Bill Tinston, director of the Federal Electronic Health Record Modernization (FEHRM) Office, joins Defense Healthcare Management Systems PEO Holly Joers at HIMSS in Chicago to explain the program's latest progress, lessons learned and how they're working together to implement best practices at future sites. Looking ahead, DOD is focusing on improving the patient experience.

NIST's Secure Data-Sharing Platform Provides a Trusted Gateway to Clinical Data

NIST Researchers Chris Compton, Joanna DeFranco, David Ferraiolo and Joshua Roberts.

Researchers at NIST Chris Compton, Joanna DeFranco, David Ferraiolo and Joshua Roberts during the HIMSS conference in Chicago highlight how the Secure Federated Data Sharing System is breaking down walls across institutions, clinics and other organizations to enable trusted access to the data powering tomorrow's innovations. They discuss how the system can be applicable beyond the health ecosystem to other use cases such as law enforcement.

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