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DeepDives

MODERNIZING THE FEDERAL EHR

INSIDE:

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From the editor's desk

Amy Kluber, Editor-in-Chief

EHRs Enable the Patient Experience

The road to a seamless electronic health record is one with careful collaboration across government. It involves a detailed process from policy to execution that modernizes approaches to interoperability, data management, infrastructure, plus all the training that enables physicians and other personnel to use and manage them. This behind-the-scenes work ultimately puts data in the hands of patients when they need it.

For federal efforts like the Defense Department's single system intended to be interoperable with agencies like the Department of Veterans Affairs, that experience entails a service member not having to carry paper records from military facility to facility. The effort has required a rollout schedule across various sites on pace to completion by the end of next year. Other departments have joined in on the effort, including NOAA and the Coast Guard.

Another key aspect not to forget within any EHR is designing with principles like human-centered design in mind to ensure agencies' approaches to data and data access for patients integrate successfully.

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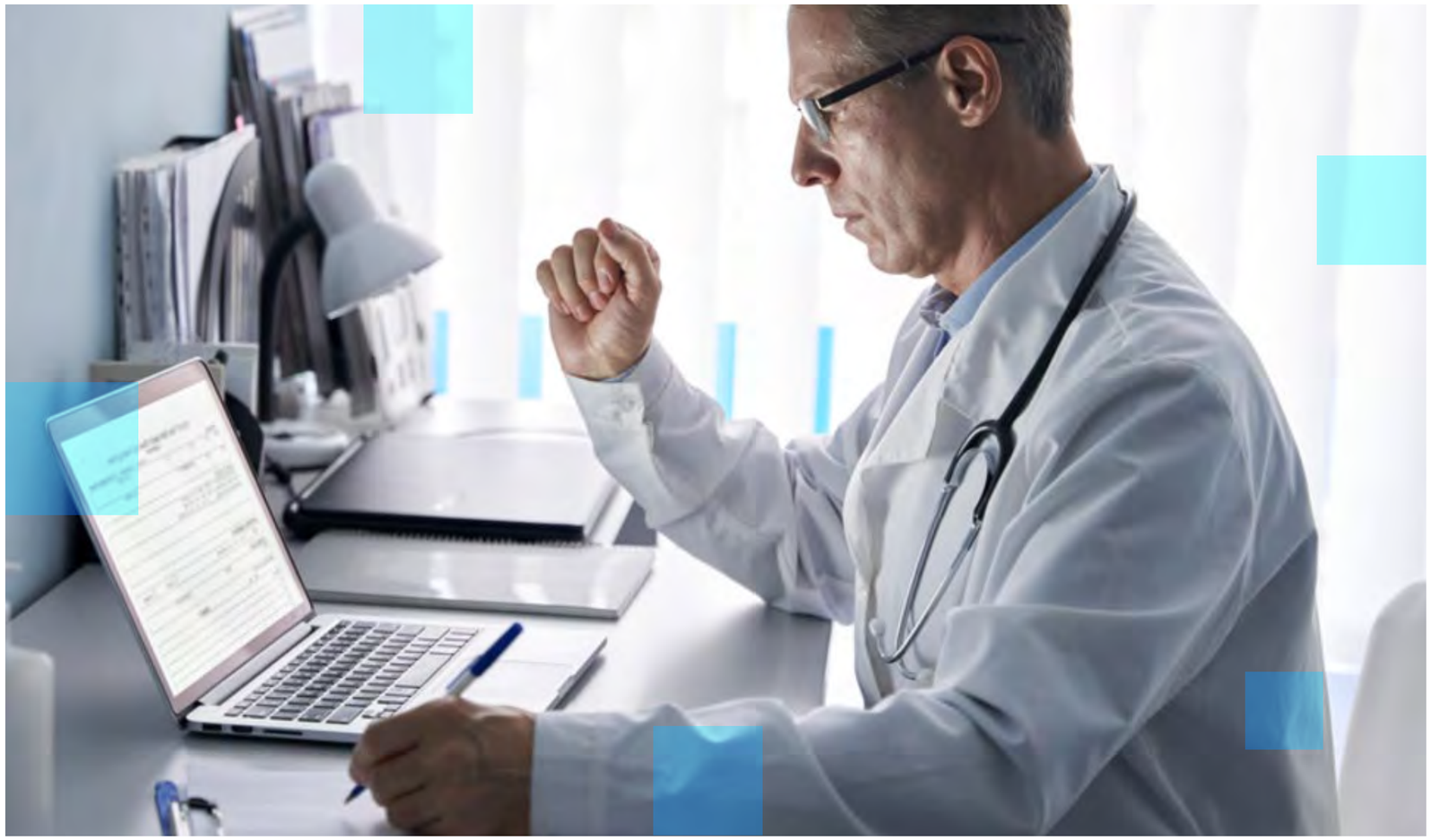
NOAA to Join EHR Collaboration Next Year

NOAA joins the Coast Guard, DOD and VA to provide a seamless, interoperable health care experience.

BY SARAH SYBERT



The National Oceanic and Atmospheric Administration (NOAA) will join the federal EHR led by the Federal Electronic Health Record Modernization (FEHRM) Office in summer 2023, a FEHRM spokesperson told GovCIO Media & Research.

NOAA will join the Defense Department, Department of Veterans Affairs and U.S. Coast Guard to facilitate greater data interoperability for a seamless health care experience.

VA's Electronic Health Record Modernization Integration Office Deputy Chief Information Officer Laura Prietula announced NOAA as the next agency to join the federal EHR during an FCW event in Fall 2022.

"It's not interoperable information that we're shipping left and right to each one of the agencies. Really, it is a common repository of information across agencies," Prietula said at the event. "This joint electronic health record system … will enable us to provide integrated care and services."

NOAA's Office of Marine and Aviation Operations will use the federal EHR to manage the agency's Commissioned Officer Corps records.

"The system meets the security requirements for NOAA uniformed service members' health records and integrates with the medical care system used by all uniformed service officers. The EHR represents a leap from paper charting and secure faxing for communicating between NOAA's medical programs," a

Photo Credit: Ground Picture/Shutterstock

NOAA spokesperson told GovCIO Media & Research.

Since the beginning of the year, DOD deployed the federal EHR to eight waves spanning 45 military hospital and clinic commands and the U.S. Military Entrance Processing Command, which added approximately 62,000 users to the EHR, a FEHRM spokesperson explained.

DOD also deployed its revenue cycle expansion (RevX) capability in November 2022 to 47 military hospital and clinic commands that already had the federal EHR, spanning Fairchild and Madigan from Initial Operational Capability sites and all of Waves Nellis, Travis, Pendleton, San Diego, Tripler and Carson/Carson+. RevX integrates patient accounting, medical coding and patient registration/access capabilities together in the EHR.

Release Manager for VA's EHRM Integration Office Linda Ennis explained how the agency is building security into the federal EHR system. VA is templatizing a process for connecting individual sites with the EHR system to allow information to be securely and automatically connected to the broader enterprise.

"You need to troubleshoot the system in order to mitigate risk. EHR software is complex and far reaching. So be prepared to engage in troubleshooting and review," Ennis said at the August 2022 GovCIO Media & Research Disruptive DevSecOps virtual event.

As of Nov. 18, 2022, there are more than 137,000 DOD, VA and Coast Guard federal EHR users at 92 military hospital and clinic commands, five VA Medical Centers and 109 Coast Guard sites, and more than 5.6 million patients are in the EHR system, a FEHRM spokesperson told GovCIO Media & Research.

"The federal EHR enables a continuity of care that tremendously benefits patients and the providers who care for them," FEHRM's Director Bill Tinston told GovCIO Media & Research. "We are thrilled to have NOAA join the single, common federal EHR."

“The federal EHR enables a continuity of care that tremendously benefits patients and the providers who care for them.”

—Bill Tinston, Director, FEHRM

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The EHR Experience

The single, common federal EHR enables a seamless patient care experience.

The goal of the federal EHR is to develop and maintain a complete patient record that would enhance patient care and health care provider effectiveness. A successful federal EHR would enable multiple agencies like the Defense Department, VA and more to securely exchange health care information electronically and to deliver a seamless health care experience.

AN ELECTRONIC HEALTH RECORD CONTAINS PATIENT HEALTH INFORMATION, SUCH AS:

- Administrative and billing data
- Patient demographics
- Progress notes
- Vital signs
- Medical histories
- Diagnoses
- Medications
- Immunization dates
- Allergies
- Radiology images
- Lab and test results

Source: The Office of the National Coordinator for Health IT (ONC)

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Interoperability is Key to a Successful EHR

Data standardization and interoperability are foundational to effective EHRs.

Dr. Donald Kosiak, Chief Medical Officer, Leidos

What are some of the benefits you've seen across government in creating a single, common EHR?

Kosiak One of the biggest benefits we're seeing from an enterprise record, regardless of the lens you use — as a taxpayer, as a provider, or as a patient or family member — is standardization. With standardization, you can meet the key pillars of quality and efficient care. You can increase quality, decrease costs and improve the experience for the patient and their families.

The Defense Health Agency, for example, transitioned from having policies and protocols that were individually tailored to the various military services and consolidated them to a single, common electronic health record to bring those services together with one standard enterprise way of patient care. Now, from a service member's entry into the military through discharge and then beyond, there will be one continuous EHR — unlocking many benefits around quality and cost savings for the patient and system.

The second major benefit with the

single, common EHR is allowing teams to work together in new ways and pushing interoperability that, in the past, has been difficult to achieve. Historically, the clinical data was everywhere, in various formats and not available to the clinical team or the patient in any meaningful way. Supportive tools and programs like virtual care, chronic disease management and population health management were done in silos. With a common EHR, that changes. As we talk about health care transformation — as the federal government looks to continue the transformation journey — we are starting to see those coalesce with other enterprise opportunities around data and clinical workflow.

What innovation around interoperability is key to EHRs?

Kosiak As we standardize the baseline configuration, we can now view structured and unstructured data at an enterprise level and conduct analytics. As we collect more data in a standard format, we can leverage machine learning and advance analytics techniques to better identify health care trends, identify populations at risk and target interventions based on those insights. For the clinician and patient, the most basic and needed advancement is getting patient data that exists somewhere in the world into the clinical workflow so that it can be used to impact care.

As we move further along in the transformation, the tools that we use to enter the data will become less important, and the ability to aggregate data from disparate sources, wherever it resides, at an enterprise level will be where the innovation happens.

As an example, we are currently looking at one standard EHR as a baseline across the DHA and the Department of Veterans Affairs. It is the needed transformation today to ensure standardization and efficiencies across the enterprise. In the future, there might be multiple different data entry tools, but it doesn't necessarily have to be the same standardized EHR for every user in every situation because we have figured out how to collect that data differently. The input device becomes less important than where the data flows and how it is used.

(ctd.)

"One of the lessons that we're learning about interoperability is that, as you start to standardize the baseline, structured data can now be viewed at an enterprise level, and you can do amazing things with data analytics."

Dr. Donald Kosiak, Chief Medical Officer, Leidos

The future of medicine is getting to a point where we can incorporate more tools, devices and data from different sources to have a more holistic view of the patient. That's the exciting part. Having trusted insight in what happens in the 8,500-plus hours per year when the patient isn't interacting with the doctor's office could be very valuable.

Where does human-centered design play into the EHR effort?

Kosiak Health care is an interesting industry because it is still very much a health care entity-centered approach. You can find pockets of transformation, but you still find plenty of frustration with the lack of coordination, lack of follow up and the inability to schedule an appointment, even within a health system. Anyone who has visited a provider recently probably has a story to tell that is less than positive. But that will change.

We're seeing more of a human-centric or patient-centric design in many areas of health care. This is driven by patient expectations and transforming how we pay for health care interactions. For many decades, the health care industry has lived in an environment where the health IT products made us bend our clinical workflow to fit the solution. Now, it is much more common that the clinical workflow is bending the health IT and that then drives how we

interact with the system and how we care for our patients. All this is leading to innovations like advanced patient portals with access to all your clinical data in real time, messaging with your care teams, visualization into scheduling with options to coordinate your own care and receiving care in the way you want, such as through a virtual visit.

What are some of the gaps you see in EHR modernization that still need to be filled?

Kosiak The first gap is certainly around sharing data and scheduling care. Depending on where you live and where you obtain your health care, you'll have a different experience. You may have an integrated system, you may have to interact with different provider networks, and you may need to interact with multiple patient portals to get one system of record, especially if you are seeking care outside of the federal system. From a provider standpoint, if I'm not in the same EHR, I still have a challenge of sharing data with another clinical team in a meaningful way. To make the information consumable and usable for the clinician and for the patient and family members is still difficult.

Second, care coordination — the longitudinal journey of the patient — is still very difficult to see, even with modern technology and integrated systems. In that realm of chronic disease management, we still see that it's very "in the moment," instead of showing you a health care journey and helping you plan out those next steps. The coordination of care inside the walls of the health system should be a big next step. The onus is still largely on individuals today, but that is changing. These gaps around health care system navigation and how to be successful can really impact care and patient satisfaction.

Lastly, finding and using clinical data about your patient that you know exists in the world and is not readily available in the clinical workflow is still very challenging. While data exchange is much better than it was in the past decade, it is still difficult to ingest data into the clinical workflow so that it is actionable during a clinical encounter.

As an example, I am an emergency physician that sees many patients with chest pain; it would be great to know if a previous electrocardiogram (ECG) or heart tracing exists somewhere in the world that could be used for comparison on my patient. It would be even better if the system was smart enough to know that I would be looking for an old ECG and it pushed the information to me instead of me having to go look for it.

What tools, technologies or solutions could be leveraged to close these gaps?

Kosiak We're starting to aggregate data so that we can apply more rigid discipline to things like machine learning, artificial intelligence and augmented intelligence. It's really going to be a game changer for health care as we start to standardize data. Though we hear about predicting cancer risks and curing advanced diseases, we still have some very basic clinical insights that could drive clinical improvements. Potential for EHRs and data innovation to tackle major health issues like cancer are there, but health care still needs to solve some of the basic blocking and tackling of today, like scheduling an appointment. We don't have the needed tools and technologies in most modern health IT stacks to do that simple blocking and tackling.

We need more insight into what happens to patients when they're not in the clinical realm. We need more insights into the social and behavioral determinants that really help drive health care outcomes.

For technologies, there are a lot out there. I'm sure there's a company being started today that will transform health care tomorrow. We have to continue to look for them and look for opportunities to engage them.

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Human-Centered Design's Role in Data Interoperability

VA is honing in on interoperability to serve as the foundation of key programs like EHR modernization.

BY SARAH SYBERT

The Department of Veterans Affairs is focusing on human-centered design as it improves interoperability across key programs, Paul Tibbits, executive director at the agency's Office of Technical Integration, said at an ACT-IAC event.

"[With] human-centered design, journey mapping, value stream analysis [we] begin to better understand … 'the why.' Why do we want to do this stuff? With human-centered design, I think as a body of knowledge, brings to the table for us an institutionalized way to focus on real people who have real problems and use an approach … [called] empathetic observation to look at real people, to look at real problems," Tibbits said.

By putting human-centered design at the center of its interoperability efforts, VA will be better able to identify discontinuities in both services and systems. Then, the agency will bridge those gaps with technology solutions like APIs or interfaces. The "top-down" focus, as Tibbits described, will provide greater understanding of internal operations, as well as deliver more effective services to veterans.

"At the end of the day, we should wind up making the VA easier for the staff to operate, and we should make it easier for veterans to access the services of VA that they deserve," Tibbits said.

VA recently created an internal group, the VA Interoperability Leadership Team (VAIL), comprised of senior executive service-level members who pick use cases and apply a measurement framework. The framework has three primary components: business, data and technical assistance. Each of those components has subcomponents, and it takes a maturity index approach, where there's two measurements at two points in time.

These measurements show the initial baseline. Then, following corrective actions to fix gaps and challenges, they show improvements. These use cases all revolve around the maturation of interoperability across key programs at VA. Tibbits said that VAIL has the initial results of these tests, and the agency plans

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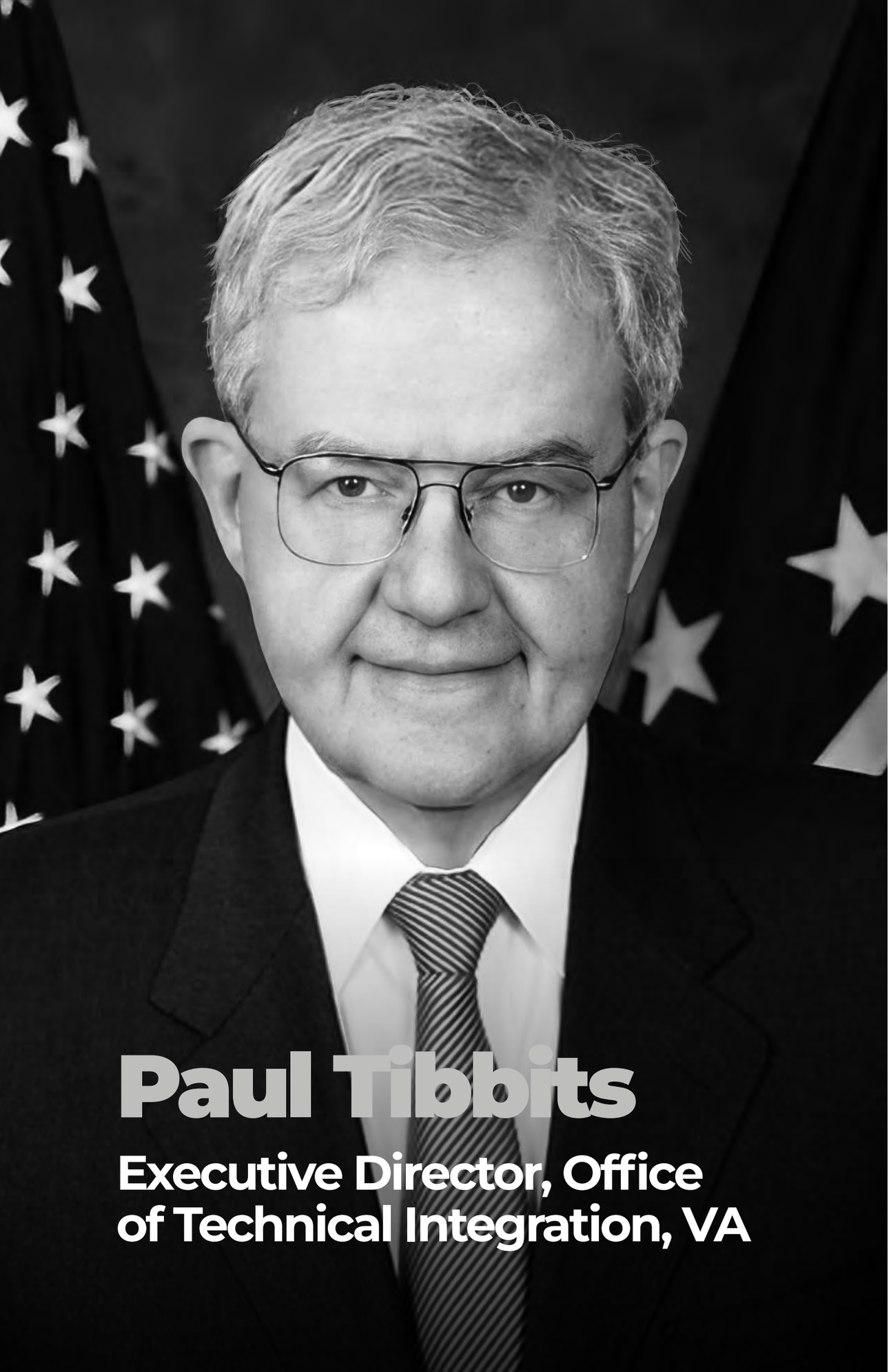

to publish its results soon.

"We'll be continuing to apply that framework across the department. The people who own that particular endeavor can use that information in various ways, [like] how they want to [and] where they want to focus their own change management," Tibbits said. "That's the advantage of the business sponsor having these kinds of measurements. It's ammunition to go ask for policy changes, additional resources, whatever it happens to be."

VA could also leverage these results to improve user experience by creating a feedback loop to continuously improve and iterate veteran solutions.

"We're doing all these measurements, we're measuring all this impact, we got these maturity indexes here. Is it making a difference to the person who is on the frontline delivering service, or is it making a difference to the veteran who's trying to figure out their claim? Those two kinds of big areas," Tibbits said.

One of VA's key programs, Electronic Health Record Modernization (EHRM), is modernizing its infrastructure with a focus on interoperability to improve access to patient data. Although health records are now digital, Tibbits said the agency needs to develop a way to categorize and organize the records to make data discovery easier for the end user.

By applying human-centered design and gauging point of service, Tibbits said that VA will "cascade enablement" and drive greater information sharing and interoperability. Moving forward, Tibbits is working to assemble a "coalition of the willing," or people that will share data to improve interoperability, to spark enterprise change across VA and its programs.

"If we had applied human-centered design to this whole data management problem 10 years ago, we would have recognized that sending people an electronic version of an unindexed telephone book is just not going to work," Tibbits said. "We [need to] get serious about that empathetic observation, understanding what is needed at the point of service. ... I would contend we do not know how to prioritize our efforts without that frontline empathetic observation."

“If we had applied human-centered design to this whole data management problem 10 years ago, we would have recognized that sending people an electronic version of an unindexed telephone book is just not going to work.”

Paul Tibbits, Executive Director, Office of Technical Integration, VA