WINTER 2023

GovCIO
MEDIA & RESEARCH

DeepDives

DATA
TRANSFORMING
Health Care

SPONSORED BY

zscaler™
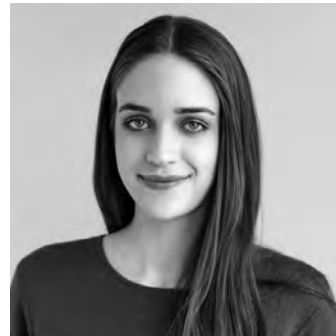
U.S. Government Solutions

From the writer's desk

Katherine MacPhail, Staff Writer

Harnessing the Power of Data to Transform Health Care

Technology is driving new opportunities to harness data, transforming health care as we know it. Health systems are just beginning to unlock the potential of cloud and advanced analytics to connect patients, clinicians and researchers to the information they need. Leaders at the National Institutes of Health are embarking on new initiatives to democratize data and accelerate research.

However, emerging technologies also require new approaches to equity starting with the data. Today, government is seeking to improve health care systems for all patients, especially those who have been historically disadvantaged. Agencies such as the Department of Veterans Affairs are taking a multi-pronged approach by developing responsible AI practices and leveraging data and dashboarding tools to address health disparities.

Digital transformation has also reshaped the security landscape. Privacy remains a core tenant of patient care, and new technologies have brought about new methods for protecting patient data. ❋

Table of Contents

New NIH Data Policy Harnesses Cloud Efforts to Democratize Rising Data

The National Institutes of Health's STRIDES Initiative wants to enable all researchers to share and use data in the cloud.

BY NIKKI HENDERSON

The National Institutes of Health is preparing for a new data management policy in 2023 that will require researchers to plan for how they're going to manage and share their data. Ahead of this and faced with growing pressure to keep up with the increasing amounts of generated data, NIH leadership is working to broaden a key initiative that has made massive amounts of data available to biomedical researchers over the past few years.

Since 2018, the Science and Technology Research Infrastructure for Discovery, Experimentation, and Sustainability (STRIDES) Initiative has harnessed cloud environments to help the agency revolutionize how and who can access data.

"It enables us to connect our data platforms so we're creating more than just a lot of data silos," NIH Officer of Data Science Strategy Director Susan Gregurick told GovCIO Media & Research. The STRIDES Initiative is one of NIH's efforts to implement its overall data science strategic plan, a new version of which is expected in mid-2023. "No matter where you are or who you are in doing research, you can connect across our data platforms to find the data and do the analysis that you want.

That's the goal."

Over the past year, NIH has acquired over 200 petabytes of data, or about two-fifths of Spotify's catalog. By 2025, NIH expects the total amount of genomics data alone to surpass amounts from other large data generators for astronomy and YouTube, for example, as cited in NIH's published strategic plan.

3

Photo Credit: Blackboard/Shutterstock

Susan Gregurick

Director, Office of Data Science Strategy, NIH

Moving forward with the cloud, NIH wants to put that data into the hands of all researchers who need it.

"One of our goals going forward now that we have STRIDES is to really broaden it and think about how all researchers in biomedical science can benefit from the cloud, but it's going to take time and effort. Just having it available doesn't mean it's going to happen, we have to do some work," Gregurick said.

When researchers are thinking about sharing data, they have options. They can decide to share data on the cloud and enable quick and easy access to it, or they can also share data in repositories, such as a community repository or general repository that will be "cloud enabled," Gregurick added.

For instance, the agency's new Generalist Repository Ecosystem Initiative (GREI) improves access to NIH-funded data through seven large general repositories: Dryad, Dataverse, Figshare, Mendeley Data, Open Science Framework, Vivli and Zenodo.

In fact, the cloud has played a key role in data collection during the COVID-19 pandemic, and it's also helping the agency better prepare for future public health crises.

The National Center for Advancing Translational Sciences (NCATS) has been gathering from multiple centers data only related to COVID-19 and putting it in one place on a single platform in the cloud.

"They are now working on how to identify people who have long COVID and make predictions on who likely will have a bad outcome from COVID depending on underlying heath issues," Gregurick said. "That resource is helping us now with the pandemic and will help us address future health emergencies."

Gregurick and the team aim to create a cloud lab for researchers who have limited resources to explore the cloud or who have no experience in cloud computing.

"There will be training modules and peer-reviewed data sets. They can play

"No matter where you are or who you are in doing research, you can connect across our data platforms to find the data and do the analysis you want. That's the goal."

—Susan Gregurick, Director,
Office of Data Science Strategy, NIH

around with analytic processes," Gregurick said. "They can also bring their own tools and data into the cloud lab to try things out and see what they want to do. This in itself will bring more researchers to use cloud computing."

NIH's data management policy effective Jan. 25 will lead to a widespread culture change as it will require researchers to plan for how they're going to manage and share their data.

The idea is that "data sharing should be the default and that we should maximize it to the best of our ability," Gregurick said. "We anticipate researchers will be sharing the data and the results from their scientific endeavors, and we want the data that makes your research reproduceable even if that data is not published."

"Hopefully we will enable STRIDES to improve our data integration and big data analytics," Gregurick added. "I think researchers will be more interested in the cloud as they think about data sharing through the policy." ✿

NIST's Vision for the Future of Smart Health Care Systems

The "P9" framework describes how emerging technology should be used to revolutionize health systems.

PREDICTIVE
EHRs and genomic data are used to predict diseases.

PREVENTATIVE:
Machine learning and analytic tools are used to prevent the onset of diseases.

PARTICIPATORY:
Patients actively participate in the diagnosis and treatment process.

PERVASIVE:
Health care is available anytime, anywhere.

PRECISE:
Based on health data, decision-analytic tools precisely determine the cause of a disease and recommend appropriate therapies.

PRIVACY PRESERVING:
Patient data is private and protected.

PROTECTIVE:
Patients are protected from harm and digital systems are secure.

PRICED REASONABLY:
Health care costs are affordable.

6

Source: Concept developed by Ram Sriram, Eswaran Sybrahmanian and Ramesh Jain for NIST.

GovCIO
MEDIA & RESEARCH

zscaler™

U.S. Government Solutions

Getting Ahead of Threats in Health Care

Zero trust and DevSecOps enable agencies to combat cyber threats to health data.

Danny Connelly, CISO, Americas and Public Sector, Zscaler

What are some lessons learned over the past few years when combatting threats in the health care ecosystem?

Connelly   As we went into the COVID-19 pandemic, there was a significant increase in threats targeting health care organizations and leveraging the pandemic for nefarious reasons. I mean, who didn't receive a COVID-themed phishing campaign back then? At the same time, organizations were trying to sustain operations to support an all-remote workforce, so had to scale up their existing VPN and remote access infrastructure. This became very challenging because attackers will look for any potential pathway into an organization, so adding publicly accessible infrastructure means increasing your attack surface and increasing the risk. We wanted to make our attack surface smaller for our adversaries, not bigger.

Organizations were also trying to prevent infected remote endpoints connected via VPN from spreading laterally and impacting internal systems. But doing so with traditional solutions (aka VLANs, firewall rules, ACLs) doesn't scale and the rulesets quickly become unmanageable, so you are left with big holes an attacker can use to spread laterally. It's very difficult from a frontline security perspective. It became very apparent that applying consistent security regardless of where the user is

located, whether they're on-prem or off-prem, and connecting a user to an application without a persistent tunnel was the way forward.

Traditionally, security stacks were deployed on-prem in data centers or distributed to specific monitoring locations around the world. All traffic to the internet flowed through a centralized point where it could be inspected for malicious threats. This model worked well before cloud services became so prevalent. But that model is no longer efficient or effective, which became apparent with COVID. Users are connecting to software-as-a-service applications and resources on the internet regardless if their organization has approved it, transforming the internet into the new data center. Today, the strategy is to leverage modern cybersecurity solutions so your security policy

can follow the user as opposed to the traditional approach where security is tied to on-prem infrastructure.

How can the federal health sector safely and securely modernize its systems?

Connelly   Having security bolted on after a project doesn't work. It's been the IT model for years, but we need to break down silos so security is incorporated at the beginning. Someone standing up a new project should have their security requirements already built into the project plan.

While a DevSecOps approach helps with IT modernization efforts, security teams are still stretched thin. Responding to incidents or events is their own

"The strategy really has changed to not only embracing zero trust, but to embracing zero trust from a pure operational perspective."

— Danny Connelly, CISO, Americas and Public Sector, Zscaler

priority. That's why security isn't just the security team's problem, it's everybody's responsibility. Education is really key.

❋ What are the keys to harmonizing cybersecurity and user experience?

Connelly User experience is always important. Now more than ever, users will find a way to do what they need to do. In the past, security often negatively impacted user experience by hindering attempts to access data. By using modern cyber security solutions, it is no longer necessary to backhaul traffic through a centralized data center to secure connections to the internet. This reduces latency and fixes routing complexities, all of which contribute to a better user experience.

When a user reports an issue, from a support standpoint, many teams get involved to troubleshoot the issue. The help desk, firewall teams, the DNS team, and the network team all work together to figure out what is causing the user's issue.

A solution like Zscaler Digital Experience (ZDX) looks at the application layer to solve user issues. If they're having a problem on their endpoint — it could be a driver issue, it could be a Wi-Fi issue, it could be some remote cloud issue — ZDX looks at the application layer from end to end and is able to pinpoint where that issue is fast. This alleviates overhead from all the different teams troubleshooting the issue. Ultimately, it helps identify the user's issue quickly and means the user doesn't attempt to bypass security or use an alternate solution that might not be authorized. ❋

9

zscaler™

Modernize your agency securely. Trust the **One True Zero.**

Safeguard your hybrid workplace and accelerate digital transformation.

FR
FedRAMP

Learn more at zscaler.com/federal

VA Ramps Up DEI&A Efforts for Improved Services

White House legislation prompted VA to accelerate diversity strategies across the enterprise and ensure equitable service delivery to all veterans.

BY SARAH SYBERT

President Joe Biden's 2021 executive order on advancing racial equity and support for underserved communities spurred the Department of Veterans Affairs to develop its new 2022 Equity Action Plan, which outlines how the agency will combat historic inequities like racial and gender discrimination.

Over the past five years, VA has expanded programs for underserved communities, including reproductive health care and data dashboarding techniques to better understand minority populations' needs to ensure the agency is delivering equal access to services for all veterans.

"We're fighting like hell to maximize access to world-class care for vets across America," VA Secretary Denis McDonough said during a luncheon at the National Press Club. "We're continuing to fight like hell to make sure all veterans feel welcome and safe at VA. Not some veterans — all veterans."

The executive order calls on agency heads to consult with the Assistant to the President for Domestic Policy and Director of the Office of Management and Budget (OMB) to create a plan to address barriers that limit full and equal participation for underserved communities and individuals seeking to enroll in or access federal benefits, services or programs.

In VA's April 2022 Equity Action Plan, the agency pointed to historically inequitable distribution of services across the Defense Department. These included things like racial discrimination in the armed forces and exlusionary policies such as "Don't Ask, Don't Tell," which discriminated against LGBTQ service members.

"Other instances of inequities faced by underserved veterans include disparities in claim rejection rates, unequal posttraumatic stress disorder (PTSD) compensation rates, and address discipline and discharge disparities faced by underserved veterans," the document states. (ctd.)

Photo Credit: Pictrider/Shutterstock

Denis McDonough

Secretary, VA

The action plan outlines a new strategy to advance an inclusive environment that values diversity and provides equal access to care, benefits and services. The plan called attention to new areas of focus including developing a data monitoring foundation, improving access to services, addressing health equity for underserved veterans and more.

The action plan also highlighted areas where VA will continue to progress efforts supporting LGBTQ veterans and women veterans. Armed with the strategy, VA leaders are now driving aggressive implementation.

"[VA is] trying to improve access for all of our veterans, get them access to high quality care and make sure that they achieve equitable health outcomes," VA's Executive Director of the Office of Health Equity Dr. Ernest Moy told GovCIO Media & Research.

Developing Data Dashboarding

VA's Office of Health Equity will prioritize leveraging and analyzing veteran data to develop reports for specific populations to better understand underserved populations and identify gaps that still need to be filled in fiscal year 2023. The office is using these insights to collaborate with the Veterans Health and Benefits arms, so the agency can deliver unified care.

"One of the things that we do is to try to raise awareness of issues of disparities among veterans and we put out lots of different kinds of products to the general public, to veterans, to providers, to VA policymakers, to external policymakers, to have them best understand the disparities that we do observe in our system," Moy explained.

These data insights are informing policy and making language more equitable and inclusive for all populations, Moy added. This office is also developing data dashboards for VA health networks and providers to increase visibility of specific care needs.

"A lot of what we do is take that data and slice and dice it so that we can

create dashboards that will allow — anywhere from networks to individual providers — to understand their overall quality of care, as well as the care that they're delivering to different groups of veterans, and seeing where there are differences," Moy said. "We also then can direct them to particular interventions that they can then activate to try to mitigate some of the differences that are observed."

The demand for data dashboards and visualization to highlight health disparities and inequities has "grown tremendously," Moy added.

To accommodate the new demands, Moy is leading the charge to develop a more formal structure to communicate information and ensure it gets into the right hands — a top priority in 2023. VA is also building a curriculum that will teach staff about health equity, build it into their scope of work and drive equitable outcomes.

"The ultimate goal is when nobody needs to think about equity because they're always thinking about equity," Moy said. "We want it to be so internalized that, whenever they are looking at a policy problem or a clinical problem, equity is right there. So that they don't have to think about, 'Oh, does this affect equity?' But rather it's just part of their decision-making process."

Expanding Specialized Health Care

President Biden's 2023 budget allocates $9.8 billion for women veterans' health care, including $767 million for women-specific care. VHA aims to increase internal capacity to provide on-site women's comprehensive care and specialty services by ongoing and enhanced provider training, hiring initiatives, using telehealth and improving access to community providers to fill gaps in women's services if needed.

The funding will better support access to comprehensive specialty medical and surgical services for women veterans, increased access to infertility counseling and assisted reproductive technology and zero copayments for contraceptive coverage, a critical focus area following the Supreme Court's June 2022 Dobbs v. Jackson ruling that overturned Roe v. Wade.

"Access has always been a big priority," Dr. Sally Haskell, VHA's deputy chief officer for clinical operations and national director of comprehensive women's health within VHA's Office of Women's Health Services, told GovCIO Media & Research. "One of the things we want to make sure is that we have all the providers we need in our facilities, we have providers who are trained and knowledgeable on women's health, and that we have the space and equipment

we need to provide care to women."

The agency also set a new goal of having at least two specially trained or experienced women's health primary care providers at every site of care, including VA's community-based clinics.

"We're getting very close to that goal," Haskell added. "We have two or more women's health providers at all our medical centers, and we have them at 94% of our community-based clinics."

Haskell said that most of the remaining 6% of community-based clinics are in rural areas that tend to have few women veterans. VHA is training and hiring providers and leveraging digital technologies to help close gaps in these populations, and the agency has been successful with both phone and video telehealth appointments. VHA aims to integrate telehealth as a long-term service to meet more veterans' needs.

Looking ahead, Haskell's division will continue to work toward increasing access to all aspects of health care, including primary care as well as gender-specific care, and ensure those high-quality services are available at every VA site. VHA is also investigating how toxic exposures impact women's health care and certain conditions such as breast cancer following the passage of the PACT Act, as VA begins processing those claims.

"We want women to feel like they belong at VA," Haskell said.

Increasing Visibility Campaigns

Women make up approximately 10% of veterans and are the fastest growing population within the veteran community, but they continue to face significant barriers and challenges to accessing necessary health care and other services, while experiencing a lack of recognition.

"We haven't always done as well by women vets as we should have. So, we're fighting like hell to serve them as well as they've served us," VA Secretary Denis McDonough said at a National Press Club luncheon.   (ctd.)
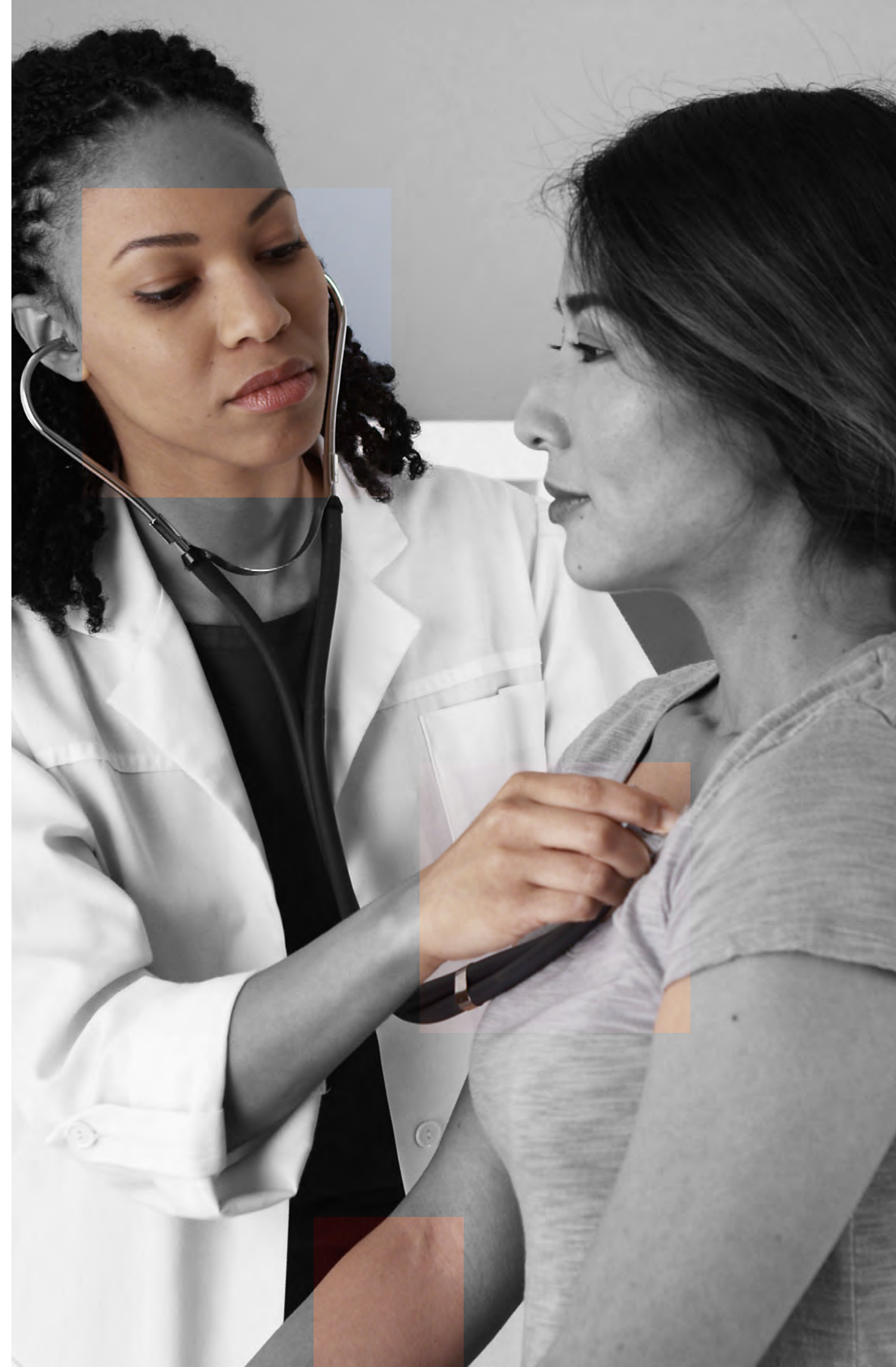
"We're continuing to fight like hell to make sure all veterans feel welcome and safe at VA. Not some veterans. All veterans."

Denis McDonough, Secretary, VA

VA's Center for Women Veterans takes a holistic approach to provide for the women they serve. The center's Director Lourdes Tiglao told GovCIO Media & Research one of the focus areas is advocacy both within VA and to the general population.

"This is a big part of the reason why the Center for Women Veterans exists, is making sure that we provide that context … as well as being an advocate and a champion for women veterans," Tiglao said.

In 2017, Tiglao's center launched the I Am Not Invisible (IANI) campaign to drive visibility of women veterans. The campaign aims to increase awareness and

dialogue about women veterans and recognize their contributions, needs and experiences. The Center for Women Veterans also conducts outreach and engagement programs to increase representation and integrate veterans' voices into the care and services VA offers.

"We are trying to ensure that we're intentional and permeating every different community as much as we can," Tiglao said. "When I first started this job, one of the first things that I said is that we are going to try to reach every woman veteran, no matter where they live, whether it's in a territory, a different country, etc. So, this is one of the intentional ways that we do it is we're trying to

reprioritize and balance the places that we go to."

VA also launched anti-harassment and anti-sexual assault policies and campaigns in 2019 to create a safer environment for veterans, and in 2021, VA assembled the Sexual Assault and Harassment Prevention Workgroup.

The group is charged with advising the secretary and embedding VA's commitment to create a culture where everyone is treated with respect, civility and compassion into the agency's foundation by integrating and accelerating relevant policies and procedures across the agency.

"VA established enterprise governance to oversee harassment, sexual assault prevention and survivor care," Lelia Jackson, director of VHA's Assault and Harassment Prevention Office, told GovCIO Media & Research. "[We are developing] a robust and comprehensive enterprise operating model that will sustain the goals for an inclusive, proactive culture."

As part of its new enterprise governance structure, VA launched its Sub Council on Sexual Harassment and Assault Prevention and Survivor Care (SHAPSCS) in 2021, which is comprised of subject matter experts, survivors of harassment or sexual assault and leaders across multiple VA programs to lead the agency's fight against sexual assault and harassment at VA.

"For far too long, too many veterans who fought around the world to protect our rights and freedoms have had to fight brutal battles here at home for their own rights and freedoms. But at VA, those fights are over. In this administration, no vet has to fight for the quality care and benefits they've earned — no matter who they are, where they're from or who they love," McDonough said. ❈