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Cerner

2022 Year-End Congressional Report

Federal Electronic Health Record Modernization
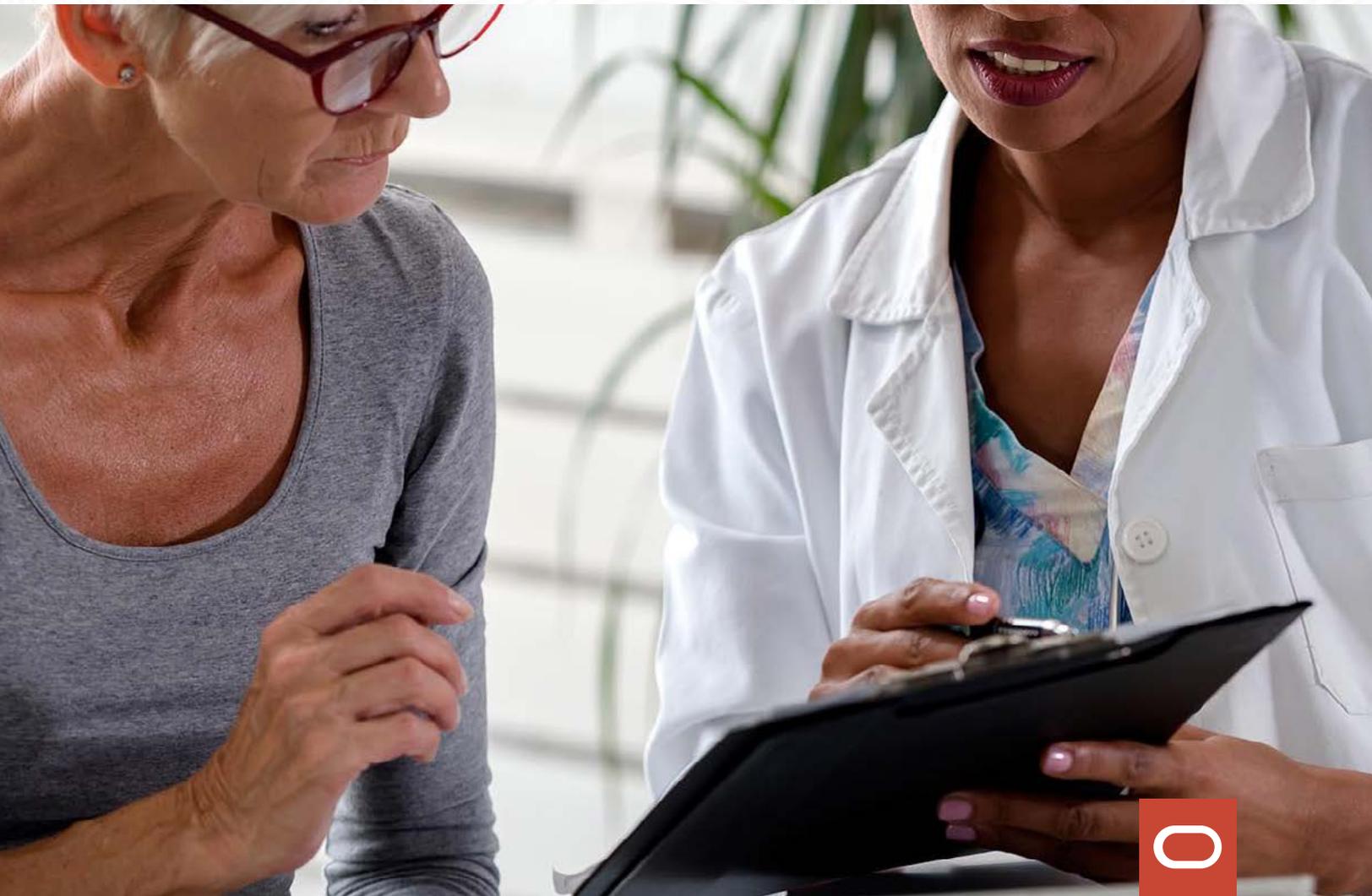
"We are on a mission to bring together the clinical expertise within Cerner and the technological expertise within Oracle to create the world's first truly modern health care ecosystem."

— MIKE SICILIA, EXECUTIVE VICE PRESIDENT, ORACLE GLOBAL INDUSTRIES

Oracle is a leading technology company with more than 40 years of experience securing the world's most sensitive data and helping businesses and governments solve their most pressing problems.

Oracle's second-generation cloud delivers **better performance, better security, and better reliability** for mission critical enterprise applications delivered at scale.

Oracle is utilized **by more than 430,000 customers across 175 countries** to accelerate their digital transformation.

170,000 employees

48,000 developers & engineers

$64B+ in R&D since FY2012

World's first & only autonomous database

Industry's broadest & deepest suite of cloud applications

INTRODUCTION

In June 2022, Oracle acquired Cerner Corporation, which overnight changed the trajectory of the Department of Veterans Affairs' (VA) Electronic Health Record Modernization (EHRM) program. The combination brought the world's only enterprise infrastructure and enterprise applications company together with one of the world's leading health care software providers. Oracle's core competency is running mission critical enterprise applications securely and at scale. Oracle brings orders of magnitude more engineering capability and resources to this project ensuring the program's long-term success.

Moreover, Cerner is now a central component of Oracle's industry strategy, and we are committed to delivering the world's first modern, intuitive web application to the VA first. It will have an entirely new user interface, and feature modern design, mobility, and analytics to improve patient care. This will be provided to our nation's veterans as a free upgrade to the system already under contract.

We need to keep in mind that the point of this effort is so that our nation's service members and veterans have a seamless, interoperable medical record from enlistment through lifetime care. When complete, the Department of Defense's (DoD) MHS Genesis modernization and VA's EHRM will produce better health outcomes, increased access to care, less burden on healthcare providers, and a future where this technology enables providers to spend more time with their patients and make better decisions about their care because they have all the information they need at their fingertips.

Deployment at DoD facilities is on schedule and on budget, with full deployment on track to be completed in 2023. As regards the VA, we inherited a system that was behind schedule and has experienced challenges. After an initial assessment we have catalogued lessons learned from the initial VA deployments and issues that require improvement have been made clear. Modernizing legacy systems is always hard to do and always worth doing.

As a result of our initial efforts since June 2022, system performance has improved, with the most severe type of outages down 67 percent. Oracle delivered ahead of schedule critical enhancements for VA's pharmacy system and implemented fixes to address scheduling and numerous other issues. We have brought on additional capability to improve training. Much additional work is in-process currently.

We have also committed to transparency. In the pages that follow is an update on the progress we have made toward meeting these goals and a summary of future work to come.

With the DoD largely complete we now can showcase the potential for replacing a national tangle of scattered healthcare records with a seamless record maintained in a modern secure, accessible and intuitive system. Turning back is not an option as the commitment to our veterans is too important and success is within sight.

We look forward to keeping you updated and stand at the ready to answer any questions.

Why Modernization is Important

Modernizing DoD and VA EHR systems will dramatically improve healthcare for more than 18 million service members and veterans—and their families.

A SINGLE, COMMON EHR ACROSS VA AND DOD WILL RESULT IN:

Better health outcomes
by always arming providers with the full patient picture

Improved medical treatment
through state-of-the art clinical decision support tools

Increased access to care
with records available at VA, DoD and participating community facilities

Less administrative burden
on healthcare providers and patients who will no longer rely on paper records

Interoperability
Improving Access to Quality Care

EHRM improves interoperability by allowing any facility using the Oracle Cerner system—whether VA, DoD, or a participating community provider—to share data and view a single longitudinal patient record:

VA to VA

By replacing 130 unique instances of VA's legacy EHR (VistA) with a single enterprise system, the new EHR will empower any VA facility to view a patient's full medical record, no matter where a patient has received previous care or testing.

DoD to VA

With both departments on a single system, data is now longitudinal, bidirectional, actionable and consumable. Not only does this help patients seek care at the facility that offers the best or most convenient care, it empowers future modernization and innovation across the federal space.

VA to Community Providers

Only a single query is now required to retrieve a patient's health information from both departments leveraging Joint Health Information Exchange (JHIE) connections to more than 60,000 community partner facilities.

Department of
Veterans Affairs

Department of
Defense

Community
Providers
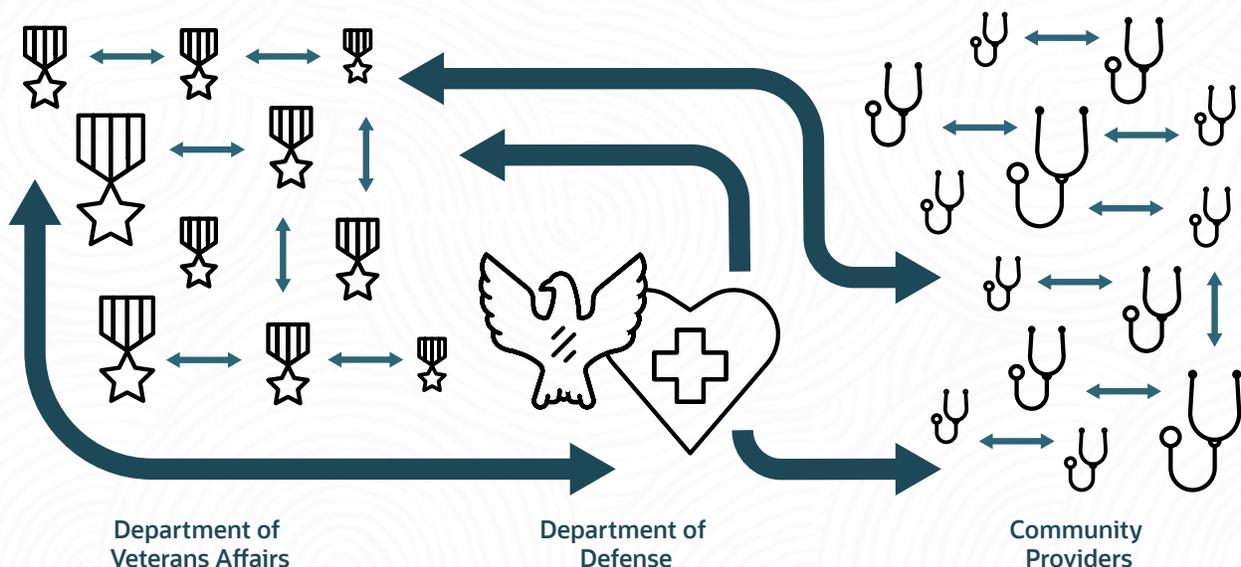
Data Migration is Complete
Jumpstarting a Modern EHR

The most comprehensive legacy health data migration in history has been completed, copying 35 years of legacy health data including 23.7 billion record elements belonging to 23.5 million veterans from VA to the secure federal enclave.

23.7 Billion
Health Record Elements Migrated

23.5 Million
Patients
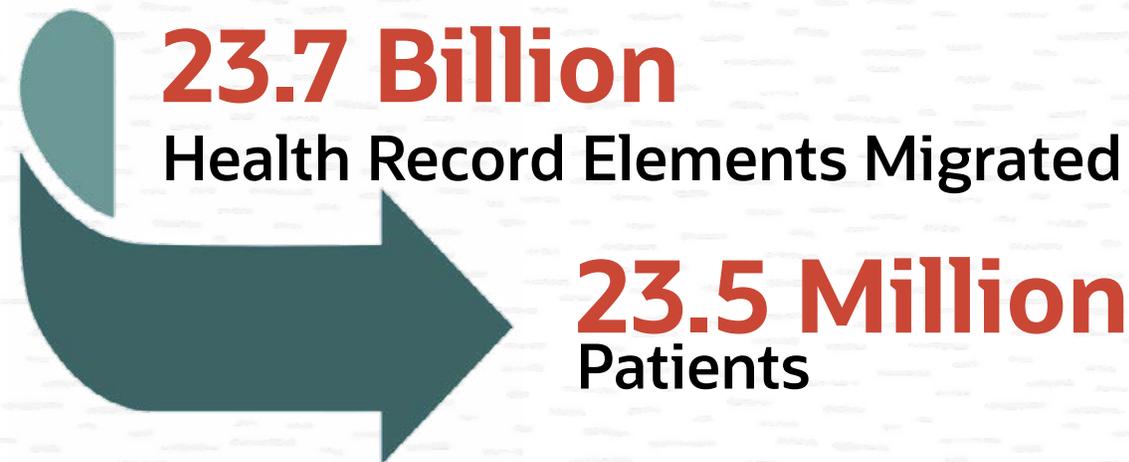
This data migration laid the foundation for a longitudinal health record that supports continuity of veteran care and will fuel future research and innovation to positively impact VA patient outcomes.

EHR Deployment Status

Implementation in the Federal Space

2022 EHR Deployment Status
Federal Healthcare Modernization at a Glance

Dept. of Defense

- On schedule and on budget
- 67% of facilities have deployed the system as of the end of 2022, bringing online:
  - 92 Commands
  - 127,000 End-users
  - 5.6 million Beneficiaries
- Full deployment is on track for completion in 2023
- Additionally, implementation at United States Military Entrance Processing Command (USMEPCOM), at 67 facilities, for use by more than 400 physicians who process more than 300,000 applicants a year

Dept. of Veterans Affairs

- Rollout paused due to implementation and system stability challenges
- System currently implemented at 5 VA Medical Centers and associated facilities
- Aggressive plan, developed in partnership with VA, launched to institute system and training enhancements
- Rollout to resume in June 2023

U.S. Coast Guard

- Full deployment complete across the entire service as of Nov. 2021
- EHR now supports:
  - 101 facilities
  - 100+ physicians
  - 40,000 Beneficiaries
  - 250,000+ medical examinations per year

> Modernizing DoD and VA's EHR systems provides an opportunity to showcase the tangible health benefits of replacing a national tangle of scattered healthcare records with a seamless record that lives in a modern, secure, accessible and intuitive system.

DoD - Current Operations

As of Waves JACKSONVILLE/EGLIN Go-Live

DoD Deployment 67% Complete…

1,129
Total Locations Preparing

73,628
Total Users Preparing (as of OCT 14, 2022)

Current Operations by the Numbers…

92
DoD MTF Commands

127K
Provisioned Users

5.6M of 9.6M
Beneficiaries Served

● CURRENT DHA MARKETS

WAVES LANDSTUHL/ LAKENHEATH

WAVES OKINAWA AND GUAM/ SOUTH KOREA

Deployment Waves Completed

DoD sites deployed (completed) ●

IOC SITES (2017)
WAVE TRAVIS SITES (2019)
WAVE NELLIS SITES (2020)
WAVE PENDLETON SITES (2020)
WAVE SAN DIEGO SITES (2021)
WAVE CARSON+ SITES (2021)
WAVE TRIPLER SITES (2021)
WAVE BAMC SITES (2022)
WAVE LACKLAND SITES (2022)
WAVE BRAGG SITES (2022)
WAVE HOOD SITES (2022)
WAVE BEAUMONT SITES (2022)
WAVE GORDON SITES (2022)
WAVE EGLIN SITES (2022)
WAVE JACKSONVILLE SITES (2022)

USCG sites (completed) ●

USCG PILOT SITES (2020)
USCG PACIFIC SITES (2021)
USCG ATLANTIC SITES (2021)

USMEPCOM SITES (2022) (completed) ●

NOAA SITES (2023) ●

Future DoD sites (Parent Commands)

9 waves "in flight" ●

WAVE DRUM (2023)
WAVE PORTSMOUTH (2023)
WAVE WALTER REED (2023)
WAVE BELVOIR (2023)
WAVE WRIGHT-PATTERSON (2023)
WAVE LANDSTUHL (2023)
WAVE LAKENHEATH (2023)
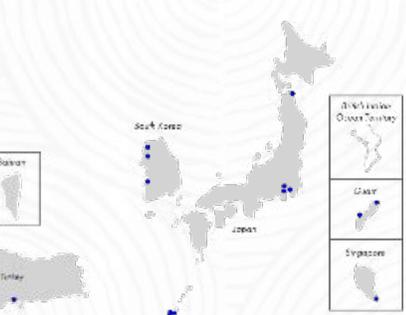**WAVE GUAM/SOUTH KOREA (2023)**
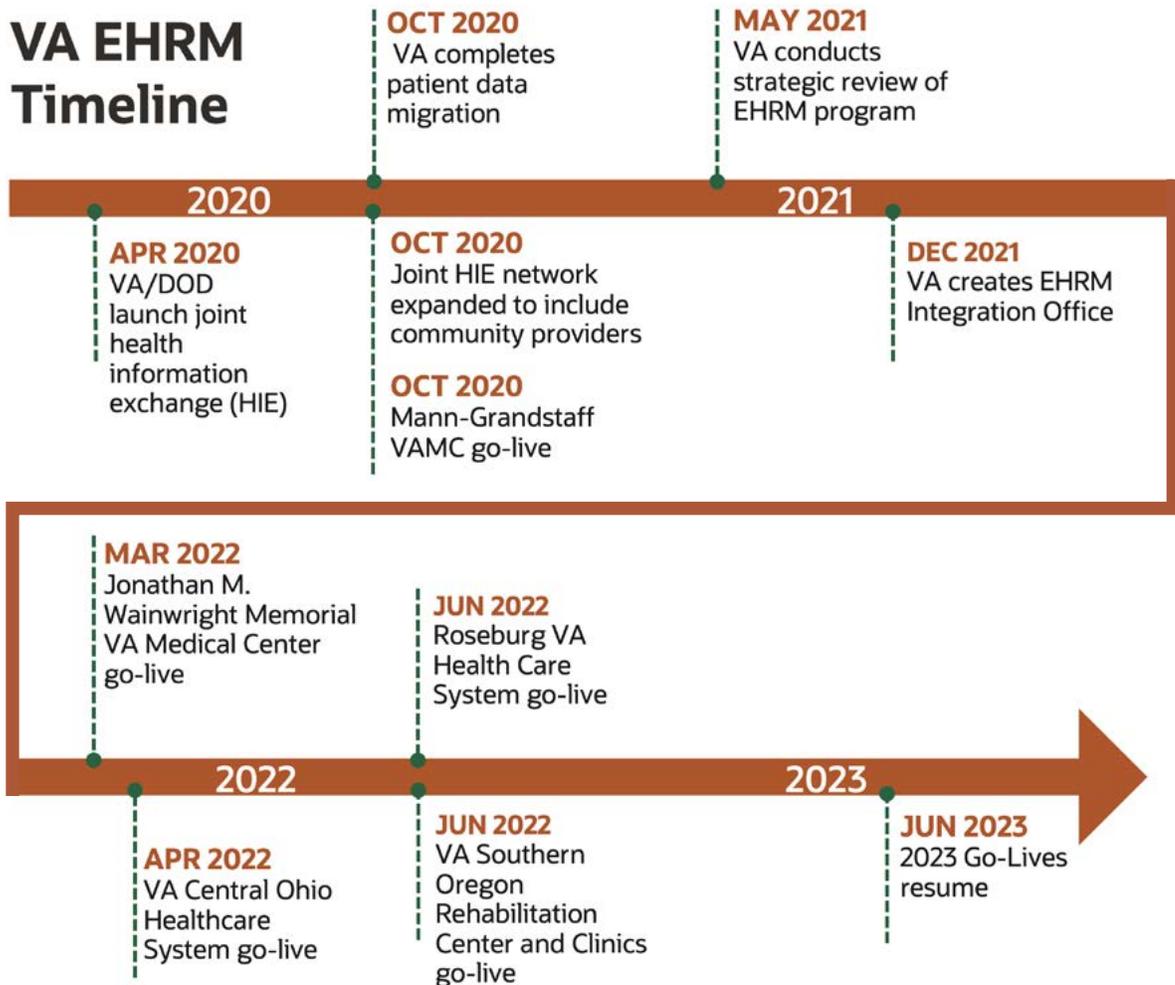**WAVE OKINAWA (2023)**

VA Deployment Status

Deployment of the new EHR is complete at 5 VA medical centers and 22 associated clinics and facilities, supporting 10,000 end users.

VA's EHRM program is slated to resume go-lives in June 2023, following a strategic pause that began after VA and Oracle Cerner began developing a plan, in close cooperation, to fix system stability and enhance functionality.

Lessons learned and weaknesses revealed during Initial Operating Capability (IOC), and enhancements implemented during the current strategic pause, mean 2023 go-lives will improve and not disrupt patient care.

VA EHRM Timeline

OCT 2020
VA completes patient data migration

MAY 2021
VA conducts strategic review of EHRM program

2020 — **2021**

APR 2020
VA/DOD launch joint health information exchange (HIE)

OCT 2020
Joint HIE network expanded to include community providers

OCT 2020
Mann-Grandstaff VAMC go-live

DEC 2021
VA creates EHRM Integration Office

MAR 2022
Jonathan M. Wainwright Memorial VA Medical Center go-live

JUN 2022
Roseburg VA Health Care System go-live

2022 — **2023**

APR 2022
VA Central Ohio Healthcare System go-live

JUN 2022
VA Southern Oregon Rehabilitation Center and Clinics go-live

JUN 2023
2023 Go-Lives resume

VA Deployment Status
Implementation Priorities

System performance, system improvements, and fiscal responsibility are our priorities in deploying the EHR. These priorities underpin patient safety and our responsibility to our customers and taxpayers.

System Performance

System performance has improved significantly since Oracle closed the acquisition of Cerner in June 2022, shortly after which Oracle worked with VA to develop a plan to address concerns over system stability and functionality. This plan has resulted in a **67% decrease in the most severe type of outages** across the federal enclave.

System Improvements

System improvements have accelerated with resources gained through the acquisition, resulting in ahead-of-schedule delivery of critical fixes and enhancements for VA's pharmacy system, Unknown Queue scheduling challenges and behavioral health flags. Additionally we are working directly with VA to simplify workflows for providers in the EHR.

Fiscal Responsibility

Oracle is committed to being a good steward of both public and private funds. Our work with DoD, VA, the U.S. Coast Guard and other federal stakeholders is no exception. For example, despite challenges with VA's EHRM project, Oracle committed in Sept. 2022 testimony to the Senate Appropriations Committee to keep costs in line with the contract ceiling, barring unforeseen new requirements from VA. This commitment includes supporting the development of new, critical system enhancements at no additional cost—for example future upgrades to move the EHR to a modern, cloud-based system—to ensure the system works for all stakeholders including patients and health care providers.

System Performance and Improvements, Progress Made

Safer Healthcare Through Modern Capabilities

System Performance
August Summit

Oracle hosted a summit in August 2022 in Kansas City, attended by VA, DoD, the Federal EHRM office (FEHRM), and Leidos (the prime contractor for DoD).

The summit focused on actions all participants could take to improve functioning of the federal enclave, which is the data center that hosts VA and DoD's EHR systems, as well as dozens of other complementary and necessary systems.

In a follow-up letter to VA dated September 2, 2022, Oracle identified a roadmap of 41 projects to improve EHR system performance.

As of the end of 2022, 13 projects are complete as noted in the table below. Since the start of 2023, an additional 13 projects have been completed and completing remaining pending projects is a priority for our teams who will work to complete them as quickly as possible.

Workstream / Theme	Total Projects	High	Medium	Completed
Certificate Management	7	1	5	1
Configuration	11	9	0	2
HIE	5	0	2	3
Infrastructure	1	0	1	0
Interfaces	6	1	1	4
Multi-Client Governance & Comms	2	1	1	0
Testing	4	0	2	2
WebSphere App Server	5	0	4	1
TOTAL	41	12	16	13

System Performance (cont.)

Since the August summit, the Oracle technical team has done a thorough review of the federal enclave, creating and implementing an overall roadmap to improve stability. This plan has resulted in dramatic improvements, **including a 67% reduction in the number of the most severe downtime incidents,** by tackling the following three areas:

- Metrics
- Operational Rigor
- Technical Stability

2/3

The reduction in severe downtime incidents—those commonly referred to as outages—from June to December.

Metrics

August Summit Area of Focus #1

After the August summit, Oracle, VA, DoD, and Leidos agreed upon a set of standard metrics that are representative of overall health and performance of the federal enclave. These metrics track incident free time, major incidents, and lesser degradations or user interruptions which impact a provider through system crashes or slow performance.

These performance metrics are evaluated weekly. If anomalies are found, preventative action plans are created to prevent a failure from occurring again.

The chart on the following page covers metrics for system performance for the entire federal enclave which includes all federal users (e.g. VA, DoD, Coast Guard, etc.). Data is included regardless of responsible party. For example, an incident that impacts Outage Free Time could have been caused by Oracle, Leidos, VA or DoD. Oracle-owned incident minutes represent 31-59% of the monthly Incident Free Time over the period displayed overall.

Overall trends in these metrics are positive and improving and would be even better if not for an issue in December that impacted Televox. Televox is our provider that delivers patient reminders of appointments and referrals.

1. Metrics (cont.)

August Summit Area of Focus #1

Federal Enclave - KPI	June	July	August	Sept	Oct	Nov	Dec
Availability: Outage Free Time (OFT)**	99.6	100	99.6	100	99.1	100	100
Incident Free Time (IFT)**	80.0	75.0	84.8	86.3	77.9	79.9	33.0
Major Incidents (SEV 1|2)	11 | 34	0 | 21	1 | 19	0 | 9	1 | 10	0 | 14	0 | 22
Mean Days Between Major Incidents	1.53	2.5	2.31	4.14	3.33	2.90	2.50
Mean Minutes to Recovery, Major Incidents	106	187	137	141	525	283	971
Major Incidents Caused by Change (SEV 1|2)	1 | 12	0 | 5	0 | 7	0 | 3	1 | 7	0 | 5	0 | 7
p99 User Interruptions	420	441	477	346	387	340	222

** October OFT, IFT, and MTTR experience influenced by the DEERS incident (~4k incident minutes recorded in SOA); December IFT impacted by extended vendor incident

*** OFT / IFT : (Minutes Free of Incident / Total Minutes)   X 100% (All incidents are included, regardless of responsible party)

Glossary

Outage Free Time (OFT) – Percentage of time the Core EHR is available for use. Minutes subtracted for Severity 1 events.

Incident Free Time (IFT) – Percentage of time in which all solutions function as intended for all users. Minutes subtracted for Severity 1, 2, and 3 events. Accounts for all events tracked in our Service Outage Attribution (SOA) tool which includes events caused by Oracle, Leidos, VA and DoD owned services.

Major Incidents (SEV 1|2) – Count of distinct major incidents for the given severities.

Mean Days Between Major Incidents – Mean days between distinct Severity 1 and 2 incidents.

Mean Minutes to Recovery, Major Incidents – Mean time to recover an unhealthy system for Severity 1 and 2 incidents.

Major Incidents Caused by Change (SEV 1|2) – Count of distinct major incidents for the given severity where the root cause was due to updates to the environment (eg. software upgrades).

p99 User Interruptions – 1 out of 100 users experienced this many, or more, application crashes or application pauses greater than 5 seconds.

2. Operational Rigor

August Summit Area of Focus #2

Since the August summit, Oracle has implemented change management controls, dedicated incident response, rigorous root cause identification, and preventative action processes. Together this rigorous, high standard will result in far fewer incidents caused by code changes. When an incident does happen, it means we respond faster, more effectively, and institute fixes to prevent repeat issues.

This kind of "block and tackle" rigor is needed to ensure high performance of the federal enclave.

While we've made progress, we are not yet satisfied and continue to:

- Use automation to deploy and test software updates, which improves reliability by reducing the number of manual steps which can introduce human error

- Improve certificate management tools to achieve better automation and integration

- Improve collaboration with partners who run key components of the federal enclave, such as the Defense Manpower Data Center which manages DEERS, the system housing authoritative identity and demographics data for service members and veterans, which experienced a severe issue in October

- Create a higher, single standard for change management across Oracle which will apply to all organizations working on EHRM and thus reduce human error

3. Technical Stability
August Summit Area of Focus #3

Since August, Oracle has conducted a deep-dive review of federal enclave components that have had the most issues and quickly implemented key stability fixes including:

- Deploying an updated site-based architecture to support more concurrent users as new sites go-live
- Improving the system's capacity sizing model
- Fixing scaling bottlenecks in key servers that now will be properly sized to support rollout volume for next 18 months
- Resolving scaling issues that impacted the HealtheIntent system
- Hardening critical database failover improvements so that service is maintained
- Implementing a new process and code fixes for managing exception messages in the system

Our goal, as we continue to improve stability in the Federal Enclave, is to further improve Incident Free Time (IFT) and Outage Free Time (OFT) metrics and continue to decrease instances of frustrating customer experiences such as crashes or "hangs" which cause the system to be unresponsive for 5 or more seconds.

To support these overarching efforts, we have taken a three-step, iterative approach.

Gathering Data and Feedback

To support these efforts, we have combined quantitative data from our internal tracking with qualitative feedback from sessions like the "Voice of the End User" in Columbus, Ohio.

Fixes and Enhancements

From this valuable end-user feedback, we developed fixes including one for the revenue cycle scheduling application that reduced daily hangs by 80% and freezes by 55%. More fixes, for deployment in February, will further reduce crashes by 40% and freezes by 15%.

Stability Testing

We have setup a separate federal enclave-like system that allows us to test how the federal enclave will perform when new users or functions are added. This enhanced testing process is essential to reduce incidents caused by system updates. It will improve performance and stability by allowing us to validate code and configurations in circumstances similar to those in which they will operate once deployed.

System Enhancements Through Improved Engineering Velocity

One of the greatest benefits of the Oracle Cerner merger has been the combination of resources **with Oracle bringing deeply experienced technical personnel** to bear in support of quick engineering fixes and enhancements.

A Case Study: VA Pharmacy Enhancements

After the acquisition, one of the most frequent complaints we heard about the EHR for VA was the need for system enhancements to better adapt the EHR to VA's unique pharmacy system. Cerner's original projection to implement the enhancement was up to three years.

Following the Oracle acquisition, Oracle allocated senior technical resources to the effort, re-evaluated the existing approach, and consequently delivered the most critical pharmacy enhancements to VA for validation in 4 months. Remaining pharmacy enhancements are on schedule to be delivered in 2023.

Oracle will continue to bring an increased velocity to critical enhancements and fixes that are necessary for the EHR system.

VA Pharmacy Enhancements: Delivery Ahead of Schedule

TASK ORDER (TO)	Pharmacy Capability	Targeted Desktop Release*	Targeted Desktop Version	Client Validation Ready in Non-Prod	Current VA PROD Desktop Upgrade Timing
VA TO 31	E-Rx Monitor Filtering	Released	2018.13	Dec 2022	Block 8: Feb 2023
VA TO 31	Weekly Multum Release	Dec 2022	Content Package	--	--
VA TO 52	#1: Toggle Prescription Synonym Visibility	Released ~~Apr 2023~~	2018.13.02, 2018.15	Nov 2022	Attempting Block 8: Feb 2023 ~~Block 9: Aug 2023~~
VA TO 52	#2: Optional Order Stop Date in Retail Med Manager	Released ~~Jan 2023~~	2018.13.02, 2018.14	Nov 2022	Attempting Block 8: Feb 2023 ~~Block 9: Aug 2023~~
VA TO 52	#3A: Display Rx Legal Expiration Date in Orders	Released ~~Jan 2023~~	2018.13.02, 2018.14	Nov 2022	Attempting Block 8: Feb 2023 ~~Block 9: Aug 2023~~
VA TO 52	#3b: Display Rx Dispensing Details in PowerOrders	Dec 21, 2022 ~~Jul 2023~~	2018.13.04, 2018.16	Dec 2022	Attempting Block 8: Feb 2023 ~~Block 9: Aug 2023~~
VA TO 52	#4: Support mCDS Discontinue in Retail Med Manager	Apr 2023	2018.15	Q2 2023	Block 9: Aug 2023
VA TO 52	#5: Enable PowerOrders Renewal Action on Retail Med Manager Prescriptions	Mid 2023	TBD	Q3 2023	Block 10: Feb 2024
VA TO 52	#6: Optional Pharmacist Verification for Pharm Tech Refills	Mid 2023	TBD	Q3 2023	Block 10: Feb 2024
VA TO 52	#7: Request Refills from PowerChart to Outpatient Pharmacy	Mid 2023	TBD	Q3 2023	Block 10: Feb 2024
VA TO 31	Three Drug Image	July 2023	2018.16	Q3 2023	Block 10: Feb 2024
VA TO 31	Mobile Inventory Scanning	July 2023	2018.16	Q3 2023	Block 10: Feb 2024

System Enhancements Through Improved Engineering Velocity

Unknown Queue

Shortly after the acquisition closed, the media reported on and then a VA Office of the Inspector General report was issued regarding the Unknown Queue. Oracle immediately looked into the issue, which while poorly named is actually a process built into the EHR system to account for patient scheduling tasks that were entered by a provider in a way that the system could not properly recognize and route.

Instead these orders were sent to the Unknown Queue for manual review and processing.

In July 2022, Oracle promised that by August 1, 2022, we would deliver fixes to VA that would alleviate the problem of orders entering the Unknown Queue. On-time, we delivered updates to the system that alert providers about orders that cannot be scheduled and must be corrected.

VA recently adopted these fixes, which along with previous enhancements that limited drop-down location results to those where a particular service could be rendered, have resulted, on average, in **only 4 orders per day** entering the Unknown Queue across all sites using the EHR, or less than 1 per day at each of the current live 5 VA Medical Centers.

Unknown Queue Enhanced Alerts

MESSAGE CENTER NOTIFICATION
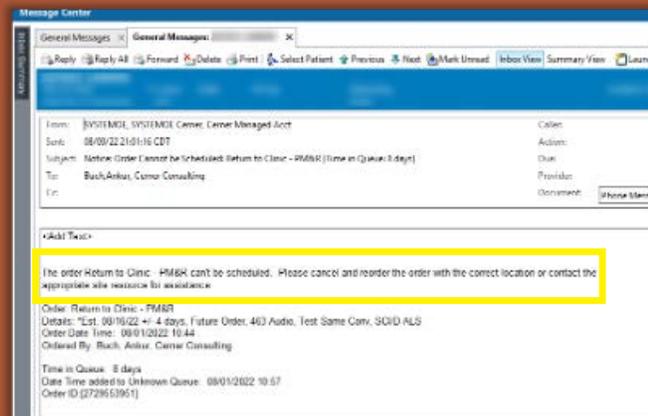
CLOSE CHART NOTIFICATION

System Enhancements Through Improved Engineering Velocity

Patient Record Flags

VA developed patient risk flags within patient charts to notify healthcare professionals when veterans are at risk of suicide or have certain behavior health risk factors that require special attention.

By providing a single, common system across all VA Medical Centers, EHRM enables VA to standardize patient record flags. This means the patient flags will travel with a veteran wherever they receive care. We continue to work with VA to expand how and where these behavior health flags are viewed, no matter an end-user's entry point into the new record.

Over the last few months Oracle has compressed the delivery time of this work to allow for more flags to go into the VA's February 2023 updates, with additional updates to come later in 2023.

Type	Capability	Targeted Desktop Release*	Targeted Desktop Version	Targeted Cloud Release	Client Validation Ready in Non-Prod	Current VA PROD Desktop Upgrade Timing
Patient Record Flags	Radiology: The RadExamManagement workflow will be enabling open chart alerts within this application	Released	2018.13	--	Dec 2022	Block 8: February 2023
Patient Record Flags	Laboratory: The specimen collect/phlebotomy workflow will be enabling open chart alerts within the Department Order Entry (DOE) application	Released Nov 9 ~~Jan 2023~~	2018.13.01 2018.14	--	Dec 2022 ~~Jun 2023~~	Block 8: February 2023 ~~Block 9: Aug 2023~~
Patient Record Flags	Registration: Pop Up alert would be designed to occur after selecting patient from person search window as well as when opening a patient record from a Work Queue or Patient Tracking. A user-defined field will still be utilized within Revenue Cycle.	Apr 2023	2018.15	--	May 2023	Block 9: Aug 2023

Accountability and Transparency

Addressing VA Patient Safety

Over the last several months, we have established an effective working relationship with VA's National Center for Patient Safety (NCPS) team to:

- Ensure alignment on what is considered patient safety
- Determine how to quickly address patient safety concerns identified by VA healthcare professionals.

Our partnership with NCPS includes the launch of a patient safety command center during each EHR go-live, to ensure emerging patient safety concerns are immediately addressed.

In early September 2022, VA's EHRM-Integration Office (EHRM-IO) awarded a new task order "EHRM Quality and Patient Safety Strategic Support." This task order enables us to expand our specialized patient safety team to work with key stakeholders focusing on cross-agency collaboration and to take a more holistic approach to governance and processes around patient safety.

Ensuring EHR safety is a shared responsibility and requires cohesion between Oracle, EHRM-IO, VA and local VA Medical Centers (VAMCs).

Oracle will promote the safe use of the EHR by:

- Bringing these agencies together to carefully integrate efforts.
- Providing subject matter experts' support from pre-go-live through sustainment.

Enhancing Clinical Decision Support

Our state-of-the-art clinical decision support tools offer healthcare providers in-EHR clinical decision support tools that help them render safer, more effective treatment. These are among our most powerful capabilities to improve patient care and safeguard patient safety. For example, they help providers quickly identify patients at risk for pressing public health concerns of particular import to the veteran and defense communities like opioid abuse and suicide.

Opioid Advisor

The new EHR allows clinicians to simultaneously check data from 47 state Prescription Drug Monitoring Programs (PDMP) and DoD facilities to prevent improper prescribing of controlled substances. Previously clinicians had to leave a patient's record and access PDMP data through each state's website with different passwords for each site.

The opioid advisor tool has alerted providers in the VA system more than 1600 times and the DoD more than 17,700 times representing more than 19,000 prescriptions where a provider could make a better choice for patient safety regarding opioid use.

Suicide Prevention

Suicide screening tools within the EHR help clinicians easily assess patients for risk of suicide using the Columbia Suicide Severe Rating Scale (C-SSRS) assessment tool.

In late 2022, Oracle introduced a new feature that uses an algorithm that looks at a dozen factors within the patient record to automatically alert clinicians of patients who might have an increased risk of suicide and prompt screening.

The EHR will soon be able to identify the number of times this assessment tool is used on a site-by-site basis.

Working with VA to Improve Functionality & Workflows

Apart from changes to safeguard system performance and stability, workflow updates will have the greatest positive impact for providers using the system.

Clinical workflows are the alignment of EHR technology with scenario-based clinical processes by various roles within and between care environments to ensure cohesion consistency in the delivery of care. We have heard repeatedly from VA providers that some workflows are not intuitive or are overly complicated. While workflows are directed by VA's National Councils, in coordination with DoD, we are in a close, collaborative dialogue with them, and leadership from the office of VA Under Secretary Shereef Elnahal, to simplify workflows.

In November, we coordinated a functional summit with VA and DoD to collaborate and gain consensus on high impact areas for prioritization. Senior VA leadership reaffirmed their commitment to work with us to make workflow changes. Changes span from simple (limiting the number of choices in drop-down list to top actions) to complex (revising how a provider enters an order into the system).

Oracle's belief is that the system should be intuitive and easy-to-use. This ongoing process will require new direction from VA, but we look forward to quickly implementing changes that will make the system more intuitive.

Training Improvements

The EHRM training program, one of significant size and complexity, is executed in accordance with government-defined requirements and government-determined priorities. While VA has contracted with Oracle to provide technical training on the new EHR, end user feedback reflects more expansive expectations.

To better understand these needs and associated opportunities, **Oracle, at its own expense, engaged a third-party to conduct an independent assessment of the EHRM training program** and offer recommendations for improvement. The result of this effort was the identification of various recommendations to improve the training program.

In order to put these recommendations to work, **Oracle engaged Accenture to implement the needed changes and work with us to make training more efficient, applicable and useful.** VA recently issued an Authority to Proceed for Accenture to begin work, and **we expect to see changes to the training program in early 2023.**

Dashboard

On June 27, 2022, Senate and House Veterans' Affairs Committee leaders sent VA a letter with a list of dozens of items that they believed required attention to improve the EHR. As of the end of 2022, twenty of the thirty-six items on the Congressional list are the responsibility of Oracle.

Believing transparency is critical to accountability and oversight we have posted a public dashboard showing status of priority items, eight of which are now complete.

In addition to the public dashboard, we have provided two substantive technical briefings to the authorizing committees reviewing changes made and improvements to the system.

Laying the Groundwork for a Future Modern EHR

Laying the Groundwork for a Future Modern EHR

PACT ACT

The Oracle Cerner EHR will undoubtedly empower VA to fulfill our promise to veterans under the PACT Act by tying their records of service and medical care to presumptive eligibility.

Not only will a single, seamless, lifetime record avoid lost paperwork or other records gaps that could complicate disability eligibility, the data driving the EHR will help us get ahead of the next generation's service-related health crisis by flagging concerning health trends across the entire DoD and VA patient population.

Centralized patient data to support other VA modernization

EHRM's centralization of veterans health data from data silos throughout the country into a single place sets the foundation for VA's other modernization efforts.

New supply chain system can have a single source of data to better inform the VA health system on the connection between system utilization and demands on its supply chain.

Benefits processes can be streamlined to assist veterans who often have to navigate two tandem, but very different disability processes. Rather than having to manually provide service and VA disability rating records through manual processes that can take weeks or month—and in some cases still require faxing documents—a Veteran can authorize the nearly instant digital transfer of their records in a small fraction of the time.

Next Generation EHR

Even as Oracle works to maintain and enhance our current EHR, our engineers remain hard at work developing a next-generation EHR. Mike Sicilia, EVP for Global Industries at Oracle, testified in September 2022 to the Senate Appropriations Committee about what this future version of the EHR will look like, stating:

"We are currently investing substantial resources to progressively rewrite the Oracle Cerner Millennium EHR as a modern, stateless web application, which will include pharmacy functionality. The system will have a modern web-based user interface. It will be mobile friendly, meaning users can bring their own device. It will include voice recognition, and ML-based clinical decision support and analytics that are built-in from the ground up. In short, it will be a fully modern cloud-based EHR system.

"Not only will this deliver the longitudinal record from enlistment through retirement and lifelong care at VA, but also includes the hierarchical view of the entire DoD/VA population against which analytics, AI, and machine learning can be deployed. We will keep VA, DoD and Coast Guard updated and engaged as we work on this modern EHR system, and of course will seek appropriate approvals for deployment as necessary. And while I don't want to over-promise here, our intent is to deliver a beta version of the new EHR, with pharmacy functionality included, in 2023.

"Our plan – and our commitment to you – is to deliver all this functionality as an upgrade to the current system as part of our existing obligations under the current contract, at no extra cost to the government.

"Let me say that again – we plan to deliver a fully modern cloud-based EHR for the DoD, Coast Guard, and VA as part of our existing contract with the government."

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