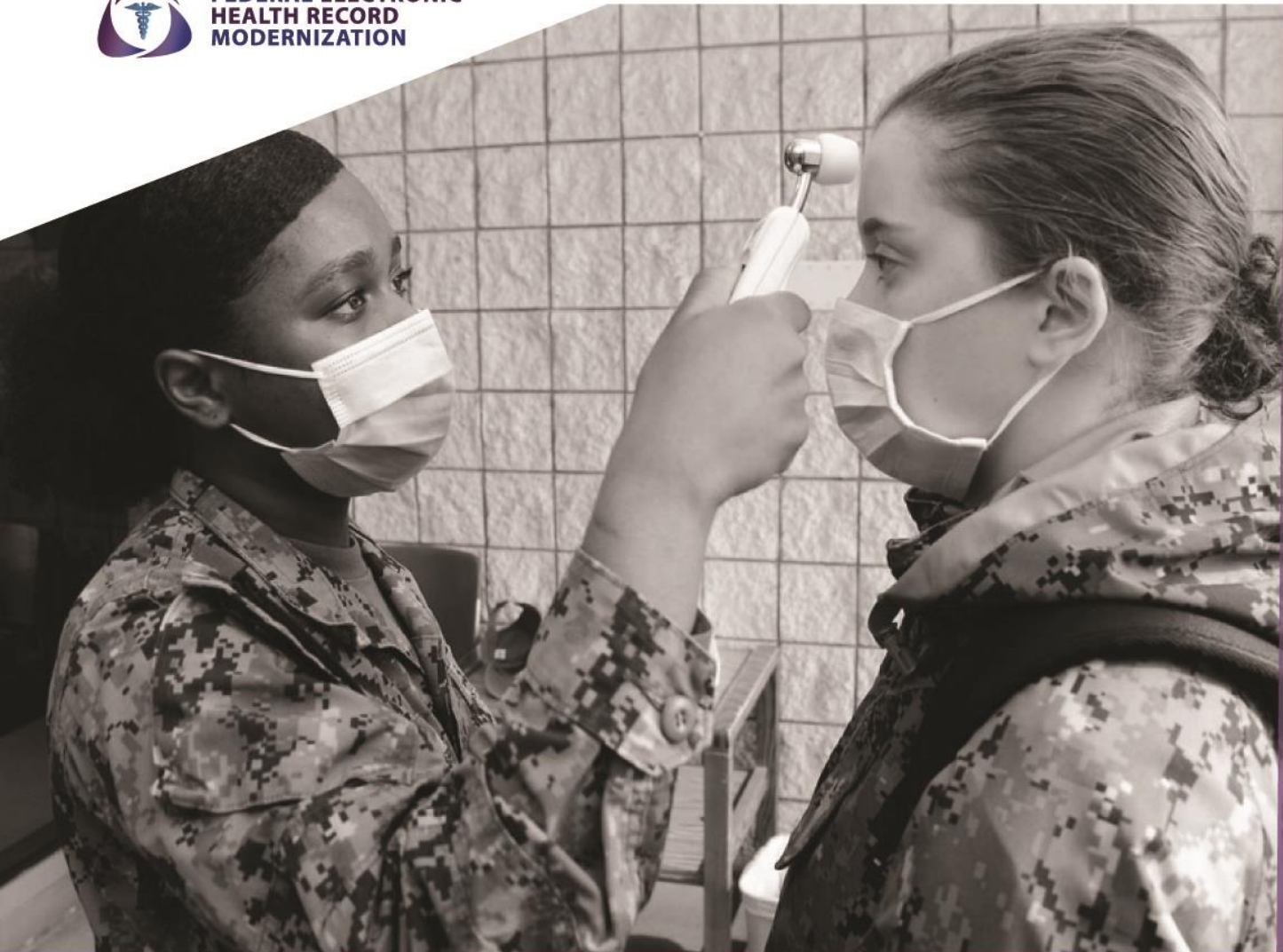**FEDERAL ELECTRONIC HEALTH RECORD MODERNIZATION**

FEHRM

Interoperability Progress Quarterly Report

FIRST QUARTER, FISCAL YEAR 2024

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Introduction

Purpose of this Report

The Federal Electronic Health Record Modernization (FEHRM) Interoperability Progress Quarterly Report responds to House Report 118--121, page 270, accompanying H.R. 4365 – Department of Defense Appropriations Bill, 2024.

FEHRM Office Overview

During the first quarter of fiscal year 2024 (Q1 FY2024), the FEHRM prioritized a strategy of operationalization and convergence in its mission to implement a single, common federal electronic health record (EHR) to enhance patient care and provider effectiveness, wherever care is provided. This operationalization and convergence strategy unified efforts across the federal EHR ecosystem and delivered common capabilities. The common capabilities the FEHRM delivers include:

- Governing and overseeing the Federal Enclave, a shared environment containing the federal EHR and supporting systems.
- Governing and overseeing the joint health information exchange (HIE), a data-sharing capability.
- Overseeing configuration and content changes to the EHR agreed on by the Departments through a joint decision-making process facilitated by the FEHRM.
- Tracking and facilitating software upgrades and solutions to optimize EHR performance.
- Tracking joint risks, issues, and opportunities as well as lessons learned regarding EHR implementation to inform continuous improvement.
- Maintaining an integrated master schedule to help coordinate EHR activities.
- Developing and updating deployment maps to show real-time status of deployments.
- Advancing interoperability, the meaningful use and exchange of data, to improve continuity of care among and between public and private-sector providers.
- Leading analysis and integration of deployment activities at joint sharing sites (JSS), sites where resources are shared between the Department of Defense (DOD) and Department of Veterans Affairs (VA).
- HealtheIntent and federal EHR reporting.

Federal Electronic Health Record Strategy

Joint Configuration Management

The FEHRM manages and optimizes the Joint Sustainment and Adoption Board (JSaAB). This joint governance body approves all federal EHR content and configuration changes. The JSaAB directly informs the Federal Change Control Board and is essential to operating the

federal EHR, providing DOD, VA, the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), and Department of Homeland Security's U.S. Coast Guard (USCG) functional oversight of all configuration decisions impacting the production baseline.

In Q1 FY2024, the JSaAB approved 402 content and configuration changes. In addition, the JSaAB reviewed and concurred with 203 content and configuration changes approved at a lower level by DOD and VA Solution Teams.

During the reporting period, the JSaAB continued to optimize quarterly updates to the JSaAB Catalog, which represents the full scope of the types of changes within the JSaAB's authority. Updating approval authority levels and clarifying change types with the catalog allows for efficient and effective issue resolution at the lowest level with DOD and VA. There were 24 changes made to the JSaAB catalog in Q1 FY2024. The FEHRM coordinates an e-JSaAB process for urgent and emergent issue resolution during off-hours and successfully used it twice during Q1 FY2024.

Additionally, the FEHRM manages the Functional Decision Group (FDG), a body of senior clinical, business, and health informatics leaders from the VA Electronic Health Record Modernization Integration Office (EHRM-IO), Veterans Health Administration (VHA), and Defense Health Agency (DHA). The FDG reviews, analyzes, and makes decisions on critical joint federal EHR issues.

The FDG expanded on an initiative to evaluate proposed DOD and VA configuration change requests for convergence. FDG staff evaluated the possibility of combining functional subject matter expert (SME) councils into joint DOD/VA workgroups.

The Federal Inpatient Working Group focuses on aligning common inpatient workflows that enhance both the user experience and patient outcomes mapping the common EHR's capability to a standardized inpatient experience. Additionally, the FEHRM has established the Federal PowerPlans Working Group. Like the other FEHRM federal working groups, this working group aligns informatics professionals, including DOD Solution Owners and VA Solution Experts, with clinical and business SMEs into a joint federal team, under the FEHRM, to execute common configuration changes to the common EHR. The Federal PowerPlans Working Group is specifically committed to normalizing the plans, order sets, and other patient care components that can be shared and managed between the Departments, leading to better patient outcomes.

Convergence on configuration items continues to be a primary focus of the FEHRM with projects underway to not only identify past divergence decisions and requirements to converge but also create processes to obviate future divergence decisions. Such efforts will reduce future maintenance.

Joint Functional Requirements

During Q1 FY2024, the FEHRM continued to engage DOD and VA in collaborative projects occurring in the federal New Requirements workspace for the federal EHR.

The FEHRM continues to collaborate with DOD and VA with the pre-implementation of a fully electronic Separation Health Assessment (SHA), a single separation examination which supports both the VA's disability compensation process and the DOD's separation and retirement process. The SHA Joint Data Quality Working Session weekly meetings facilitate DOD and VA working in partnership. The discussions and issues addressed, including questions or concerns regarding DOD/VA SHA data sharing, are tracked so that the FEHRM is prepared to provide support when needed.

As onboarded partners, NOAA, USCG, and other federal agencies have deployed the federal EHR and started to direct their efforts toward their own specialized needs. Further, the FEHRM assisted DHA Health Informatics (DHA HI) engagement to help partners such as the United States Military Entrance Processing Command (MEPCOM) navigate the DoD Healthcare Management System Modernization (DHMSM) New Requirements process.

The FEHRM facilitates monthly FDG meetings for DOD's Emerging Capabilities and VA's New Service Requests (NSRs). With primary focus on the Captain James A. Lovell Federal Health Care Center (Lovell FHCC), priority was placed on tracking and reporting change requests that resolved issues involving the 14 Lovell FHCC Patient Safety NSRs. The FEHRM continues to monitor and inform leadership on all pertinent activities, whether they include workflow, configuration, or new functionality additions, that support the improved performance of the federal EHR.

Joint Enclave Data Management

During the Q1 FY2024 reporting period, several ongoing projects addressed different focus areas, including data and analytics governance, Oracle Cerner code sets, and terminology.

Executive Data Management Board

The Executive Data Management Board (EDMB) establishes a formal data management and governance function for FEHRM data and analytics assets and authorizes and prioritizes joint data management activities impacting the Federal Enclave. Under this executive body, data and analytics are governed by the Data Governance Board (DGB) and Analytics Governance Board (AGB), respectively.

The FEHRM established integrated processes and workflows between governance boards focusing on efficiency, effectiveness, and traceability. In support of governance integration, workflows, and processes were developed into the FEHRM data management solution.

Data Governance

Under the EDMB, data is governed by the DGB with stakeholder representation from constituent bodies.

In Q1 FY2024, the FEHRM established and chartered the Data Quality Committee (DQC) and Test Patient in Production Work Group (TPIP WG). The DQC was established to provide guidance and drive resolution for issues raised by the DGB and recommend actions to promote data quality improvement. The TPIP WG provides guidance and resolution of test patient issues and promotes policies that control the creation and management of test patients and related issues. It is assigned for action by the DQC and adjudicated by the DGB.

Concurrently, the FEHRM Data Management Team implemented a process to identify and retrieve data-quality-related ServiceNow Helpdesk tickets to streamline the IBM Jazz tool's intake process. Through ongoing analysis of inbound tickets, each issue is categorized for suitable governance board assignment and entered into the Data Management workflow leveraging the newly revised governance process. This new process expeditiously identifies potential data-quality-related issues that may have not reached proper destination as efficiently for resolution.

Analytics Governance

Under the EDMB, analytics are governed by the AGB with stakeholder representation from constituent bodies.

In Q1 FY2024, a quality review process was implemented to ensure reports met developed standards for naming, filter usage, use of abbreviations, and general look and feel. To decrease report development time, a pre-development review was implemented to ensure requested elements remained constant and SMEs were identified for rapid reach back if questions arose.

In addition, efforts to streamline and clean reports continued. Through weekly convergence meetings and other mechanisms under the direction of the AGB, more than 100 reports were identified as not functioning appropriately and were replaced by other reports; those with inaccurate output were archived out of production. The AGB approved the cleanup of more than 150 reports.

Lastly, a focus on efficiently processing and approving reports continued as email templates were developed and implemented to improve communications and decrease processing time. An AGB Approval tab was implemented to compile information from various other tabs in the IBM Jazz tool and consolidate the data into one place, where board members could easily access the information needed to complete reviews and approvals.

Federated Interagency Terminology Service

The Federated Interagency Terminology Service engaged with the vendor and Departments to jointly review and manage critical terminology projects. FEHRM terminologists supported Health Level Seven (HL7) Beneficiary voting members by reviewing implementation guides and other standards. The terminologists continue to monitor and normalize Joint Longitudinal Viewer (JLV) and Clinical Health Data Repository legacy and federal EHR clinical domains, including allergens, medications, and document types.

FEHRM Revenue Cycle/Business Processes

During the reporting period, the FEHRM, DHA. and VHA continued to work with the Federal Charge Services Workgroup, which was created to implement a standardized process for reviewing proposed modifications to the charge master shared by VA and DOD in the federal EHR.

The FEHRM also continues to facilitate the Ancillary Business Service Workgroup weekly meetings, which have been focused on a solution that is satisfactory to VA and DOD for interdepartmental billing of order-based shared services. JSS have Resource Sharing Agreements (RSAs), where DOD often provides laboratory and radiology services for VA. Since a VA provider sends requests for these services directly to DOD, no authorization is sent with the order request because the service provision is written in the RSA. This process causes a gap in the billing process; hence, the workgroup is working on a solution for this issue.

Identity, Credential, and Access Management

In Q1 FY2024, the FEHRM hosted four working sessions with DOD, VA, Department of Homeland Security (DHS), and vendor partners. The Defense Manpower Data Center presented the cost to scale the Electronic Data Interchange Personal Identifier (EDIPI) at the October ITEC committee meeting. The FEHRM is tasked with providing guidance on funding the effort, advising on any policy ramifications that may arise with using EDIPI as the long-term solution, and providing feedback on a second quarter (Q2) FY2024 ITEC meeting. The ICAM team advised on the Lovell FHCC dual credentialed users' requirement that they authenticate to both the VA and DOD Storefront applications.

Implementation Support to Joint Sharing Sites

In Q1 FY2024, the FEHRM applied lessons learned from previous DOD deployments to improve the content of its Scope of Services questionnaire. The Scope of Services questionnaire is a tool to collect relevant information and validate understanding of joint clinical sharing relationships. This effort's collected data assisted in determining the number of VA clinical and administrative staff who were accessing the DOD legacy EHR systems to: 1) document care and order ancillary services for both DOD beneficiaries and Veterans at

these sites, or 2) extract medical record data in support of Veterans' disability determination processes.

The FEHRM engaged in the planning, execution, and analysis activities to support the unique operational, clinical, and business needs of one identified JSS that would be impacted by DOD Wave GUAM—that is, Naval Hospital (NH) Guam with its sharing partner. the VA Guam Community-Based Outpatient Clinic (CBOC), a subsidiary of Pacific Island VA Health Care Services. These activities were conducted to assess potential risks of the asynchronous deployment of the federal EHR by our interagency partners, DHMSM Program Management Office (PMO) and EHRM-IO. Further data analysis led to the identification of risks (system access) for some of the VA Guam CBOC staff who support the DOD/VA Transition Center at NH Guam. The FEHRM JSS-FHCC Team coordinated with DHMSM PMO and EHRM-IO teams to ensure that these VA users were included on the DOD User Role Assignment List, trained, and could access the federal EHR from the VA Storefront.

The FEHRM engaged its DOD/VA health informatics partners to look for interim solutions that alleviate issues captured by FEHRM JSS-FHCC Team members. Specifically, the FEHRM JSS-FHCC Team collaborated with the DHA HI Team to find a suitable solution to support identification in the federal EHR of the more than 700 DOD TRICARE Plus beneficiaries empaneled at the 88th MDG and receiving care in its VA Patient Aligned Care Team Clinic. Through this effort, a solution was identified and is being applied. Once fully implemented, its effectiveness will be assessed to determine if this solution could be implemented at other JSS to increase access to care for both DOD and VA beneficiaries being cared for by staff in the joint space.

Additionally, in collaboration with the DOD/VA Resource Sharing Office, the FEHRM JSS-FHCC Team engaged the Naval Health Clinic Charleston and the Naval Hospital Beaufort to gain a better understanding of their reported issues since these JSS migrated to the federal EHR as part of Waves JACKSONVILLE and EGLIN in September 2022. Preliminary data collected revealed that, as part of their sharing agreement, these two JSS must send to the TRICARE network their empaneled DOD patients needing specific specialty services that could be offered onsite by VA clinical staff. The FEHRM JSS-FHCC Team and Chief Health Informatics Officer (CHIO) Team are actively working together to perform adequate analysis of the data collected before engaging DHA HI partners for further discussion.

During this period, the FEHRM JSS-FHCC Team continued to work with its collaborating partners (i.e., DHA HI, VHA Office of Health Informatics, both EHRM PMOs, and its supporting vendors) on reviewing an existing set of Joint Users Provisioning Scenarios which outline the process to provision joint users at a deploying site. The focus was to ensure that these use cases mapped out the process to provision the largest number of joint users working at Lovell FHCC. This effort aims to validate the process supporting these specific scenarios, as they will be used by the VA to provide system access to joint users once it resumes its deployment effort.

More specifically, using the FEHRM JSS Risk-Analysis Process, the FEHRM developed a questionnaire portraying its understanding of the current clinical and business-sharing relationships. The questionnaire was provided to NH Guam and VA CBOC for validation. This questionnaire aimed to confirm data collected to date and identify key personnel who can serve as points of contact throughout the DOD deployment process and afterward. At the same time, these facilities operate in the interim state. The collected information clarified essential operational procedures to support care delivery in the joint space, such as how and who had system access to each Department's EHR, and the screening process used to determine Veterans' eligibility. The analysis of this information influenced the scope of service calls, along with follow-up questions from the DOD/VA team at impacted JSS, directly supporting the delivery of the shared services.

The FEHRM then identified risks and developed mitigation steps in collaboration with its partners. For example, the FEHRM worked closely with both Departments to ensure that the VA users working at NH Guam and those working remotely accessing its EHR systems would have access to the common federal EHR, either from the VA or DOD access point. A reference document explaining how to perform this task was provided as a guide to these individuals before go-live.

Captain James A. Lovell Federal Health Care Center Federal EHR Implementation

The FEHRM collaborated with DHMSM PMO and EHRM-IO to lead several onsite events and deployment-related activities to advance the Lovell FHCC Federal EHR Implementation Project. The FEHRM provided direction and guidance to the multi-agency Lovell FHCC Federal EHR Implementation Team on several solution-design-related topics and key deployment-related activities.

Lovell FHCC Deployment Activity Support: The multi-agency Lovell FHCC Federal EHR Implementation Team successfully conducted several key activities and milestones on the deployment schedule during the quarter, including Super-User Training, Scan Fest, Lab Validation, and Awareness Fairs. Additionally, the FEHRM continued efforts to support solutions design and configuration via the sub-workgroups. Notable outcomes include the following:

- **Functional Sub-Workgroup:** Began providing monthly updates to the FDG. These updates include progress on configuration changes related to convergence efforts from the Enterprise Requirements Adjudication (ERA) process, and status on additional functional items identified during deployment.
- **Technical Sub-Workgroup:** Organized efforts in support of federal EHR access management questions at Lovell FHCC, including on-site and virtual events to validate dual-role user solutions for functionality in DOD and VA environments.
- **Communications Sub-Workgroup:** Focused on ensuring all communication audiences were identified and activities were incorporated into the integrated communications schedule to ensure alignment of key events. The team led and

facilitated discussions about beneficiary communications and finalized the Patient Portals for Dual-Eligible Beneficiaries and Federal Electronic Health Record Benefits documents to support user adoption.

- **Sustainment Sub-Workgroup:** Began multi-agency discussions to draft and operationalize the Facility Sustainment Guide for Lovell FHCC and developed an information paper in tandem with the Lovell FHCC Information Technology (IT) Department's leadership to describe DOD and VA agency goals for an integrated help desk solution at Lovell FHCC.
- **Risk Sub-Workgroup:** Employed the consolidated risk repository to manage significant risks from the FEHRM and the Departments for review and coordination, providing a centralized review and escalation point.
- **Schedule Sub-Workgroup:** Continued to maintain the Lovell FHCC deployment schedule; during the quarter, the risk and schedule teams collaborated to ensure that risks associated with schedule milestones were accurately identified and represented in that schedule.

Throughout the reporting period, the FEHRM provided oversight and monitored key localization and adoption events at the site. User Functional Testing concluded in November and provided VA EHRM end users an opportunity to test and validate council-approved enterprise 1 VA workflows. Findings from this event will be remediated, which in turn validates VA configuration readiness for Integration Validation events. Additional activities will continue leading up to deployment:

- Ancillary Services Testing including Lab Validation, Scan Fest, and Blood Bank Validation commenced.
- Interface Localization Validation will continue to test site-specific configuration of an enterprise interface. Scheduled Integration Validation events (referred to as IV1 and IV2) will also occur, as vendor solution SMEs execute Patient Experience scripts that mimic the flow of data through the federal EHR, with activity broadcasted virtually for stakeholder awareness.
- Data Migration Validation began will continue through the deployment. The vendor created test scenarios, test cases, test data, and test results to execute and report on data migration testing activities in accordance with the Joint Master Test Plan. Lovell FHCC users validate the data once the automated loads complete.
- Medical Device Integration testing has been underway since March 2023, confirming that the federal EHR systems and FHCC-based systems can communicate in advance of scheduled test events.

In the final months of deployment, the FEHRM will continue to lead solutioning and execution activities for the interagency Lovell FHCC Federal EHR Implementation Team, including management of sub-workgroups across multiple disciplines charged with adjudicating items that require multi-party decisions related to execution and implementation of the federal EHR at Lovell FHCC. With an increase in the operational tempo and on-site activities, the FEHRM led efforts to coordinate and centralize FHCC travel

into the vendors portal (Vector). This tool is used and continues to be used by the site and implementation teams to maintain awareness of on-site activities and logistical needs.

The FEHRM continued to monitor the schedule, and to date, no major impediments have been identified impacting go-live. In addition, the FEHRM has documented and tracked risks, issues, and opportunities, as well as watchlist items, through established risk management processes.

For Q1 FY2024, the FEHRM followed up on the execution of the course of action (COA) agreed upon by DHA HI, VHA Office of Health Informatics, and the FEHRM. ERA topics executed include CarePathways/Referrals (#13), Maternity Care Coordination (#18), Emergency Department Pediatrics Documentation (#39), Clozapine (#54), Banner Bar (#103), and Formulary Status (#101). The implementation of the COAs via configuration adjustments were successfully addressed and finalized by the FEHRM through the collaboration with sub-workgroups within the implementation team. The resultant actions significantly augment the configuration of the federal EHR, a collaborative effort endorsed by both DOD and VA functional community teams. These enhancements aim to further optimize the federal EHR. These actions did not impact the overall Lovell FHCC project deployment schedule. The ERA EDM highlights the importance of this first-of-its-kind collaborative approach of the FEHRM office.

On-Site Clinical Lead Support of Required Deployment Activities: The FEHRM CHIO Pharmacy Solution Lead accompanied the Oracle Health Supply Chain Management Team to Lovell FHCC to complete Barcode Scan Validation of the pharmacy inventory, addressing facility-specific requirements for medication dispensing and support of bedside barcode scanning.

The Sustainment Sub-Workgroup began multi-agency discussions to draft and operationalize a Sustainment and Optimization Plan for Lovell FHCC. The FEHRM continues to lead project coordination, solutions, and execution activities for the interagency Lovell FHCC Federal EHR Implementation Team, including management of sub-workgroups across multiple disciplines charged with adjudicating items that require multi-party decisions related to execution and implementation of the federal EHR at Lovell FHCC. The FEHRM also continues to work with the Lovell FHCC Informatics Steering Committee to advise on change management, technical capabilities, and future-state workflows.

Lovell FHCC Federal EHR Legacy Operations

Medical Single Sign-On Context Management

Medical Single Sign-On Context Management (MSSO-CM) handles information that is critical to the support of deployed and contingency forces. The MSSO-CM system allows users (i.e., authorized government, military, and contractor personnel) to interoperate seamlessly and securely among clinical applications, such as Armed Forces Health Longitudinal Technology

Application (AHLTA), Composite Health Care System (CHCS), Veterans Health Information System and Technology Architecture (VistA), and Computerized Patient Record System (CPRS). MSSO-CM does not determine the authorized users. The MSSO-CM program inherits the users from each system it interfaces with as well as the number and type of users defined by these interfaced systems. The single sign-on component eliminates the need for health care providers to sign on each time they switch applications, thereby automating the user login process using credentials stored in a secure database. It enables users to enter their credentials only once and access multiple applications.

The Context Management component synchronizes patient context data across multiple applications, eliminating the need for health care providers to duplicate patient searches from one application to other participating clinical applications.

Key MSSO-CM accomplishments include the completion of the Imprivata OneSign 23.2 HF2 and the Imprivata 2023-2-1 Quarterly Oracle Patch installation and testing in the Integration environment. In addition, the team completed the installation and testing of the October and November 2023 Context Management Information Assurance Vulnerability Alert (IAVA) patches in the Development, Integration, and Production environments and the installation and testing of the October 2023 Microsoft Security Server IAVA patches in the Integration environment. Finally, the team completed the MEDCIN V22 Codes Update 21.0 installation and testing in the Integration environment and the OpenJDK 21.0.1 installation and testing in the Development and Integration environments.

Enterprise Service Bus/Orders Portability

Enterprise Service Bus/Orders Portability (ESB-ORP) capabilities enable DOD and VHA clinicians to place orders that are actionable and displayed within CHCS, AHLTA, VistA, or CPRS.

The VA Orders Portability Sustainment Team completed testing and implementing several functional enhancements and sustainment fixes to improve the end-user experience and patient safety in collaboration with VA.

The key ESB-ORP accomplishments include the completion of the following Order Portability interface sustainment fixes and enhancements in Q1 FY2024: The first enhancement, "View Supplemental Reports Prior to Sign Off," allows users to view drafts of supplemental reports before signing them off, ensuring accuracy and completeness. Additionally, the "Delete Supplemental Reports" feature enables users to edit or delete any supplemental reports made in error before they are signed. Another enhancement called "Search by OID" allows users to find specific terminology sets by object identifier (OID) across the Terminology Manager Term Sets Tab. Furthermore, two new search enhancements have been added to the Terminology Manager. These are the "Terminology Mgr. Map Sets Tab Search" and "Terminology Mgr. Message Type Search," which allow users to search by OID and Message Type options, respectively. Lastly, the VA Orders Portability Sustainment Team developed the

"Term Mgr. Source/Target System Search" enhancement, which lets technicians search for Source/Target Systems across the Terminology Manager Field Term Mappings Tab.

Lovell FHCC Technical Partner Integration

Federal Interfaces Team

During Q1 FY2024, the Federal Interfaces Team (FIT) began prioritizing efforts on the Critical Net New Interfaces, which are required for deployment of the federal EHR at Lovell FHCC. The team is focused on gaining a firm understanding of the status of all Critical Net New Interfaces, identifying areas where leadership should place additional attention and providing detail on potential risks for Critical Interface delays.

Additionally, the FIT has initiated the process of drafting simplified architecture diagrams as a visual representation of interfaces to serve as a resource for interface stakeholders to assess impact and risk related to interface deployment for Lovell FHCC.

While the focus for the FIT has been Critical Interfaces for Lovell FHCC deployment, the team has begun tracking interfaces overall to document and sort the various types of interfaces in the federal EHR and identify potential opportunities for future development of a unified Interface Catalog.

Testing and Evaluation

During Q1 FY2024, under the direction of JSS-FHCC Workstream, the FEHRM collaborated with EHRM-IO, DHMSM PMO, and Leidos Partnership for Health to successfully establish a bi-weekly Sub-Workgroup to foster ongoing collaboration of joint testing. The main goal is to develop a holistic testing approach for current and future sessions. In Q1 FY2024, the sub-workgroup supported ongoing assessments and reviewed testing efforts for Lovell FHCC's federal implementation with the objective of making patient data visible between DOD and VA in a federal EHR.

The FERHM Test and Evaluation (T&E) Team identified key testing events crucial for go-live and focused on identification of critical path items that require testing. Additionally, the team reported test findings and identified risks to support early resolution of key issues with potential impact to Lovell FHCC Go-Live. To mitigate the key issues, COAs were developed regarding pre- and post-go-live in-patient pharmacy and pharmacy medicine dispensing cabinet systems at Lovell FHCC, design decisions were coordinated on the in-patient pharmacy systems and timing of solutions were assessed to determine feasibility of achieving desired COAs by go-live.

The T&E Team outlined post-go-live timelines and actions, including networking, cybersecurity, contracting, personnel, and other IT work required to achieve outcomes desired by Lovell FHCC, EHRM-IO, and DHMSM PMO.

Lovell FHCC Cybersecurity

In the first quarter of FY2024, the Lovell FHCC Cybersecurity Team actively worked on enhancing collaboration among the VA, DOD, and external partners. The focus was on prioritizing the security impact analysis of critical new interfaces and effectively communicating related changes to stakeholders. This effort involved close coordination with cross-functional teams to assess the current system architecture for compatibility and integration requirements. The teams also conducted a thorough review of interface control documents. They analyzed necessary ports, protocols, and service management changes required to support the connection, leading to approval and endorsement for the Joint Request Form (JRF) from both DOD and VA authorizing officials and the establishment of firewalls for the Radiology Picture Archiving and Communication System (PACS) connection to Enterprise Clinical Imaging Archive (ECIA).

Successful teamwork with Lovell FHCC stakeholders led to the review and update of interconnection security agreements (ISAs). The team addressed corrective actions by identifying and mitigating information security and privacy concerns. Additionally, the Lovell FHCC Cybersecurity Team negotiated delivery deadlines in partnership with the local site, VA, and DOD, ensuring that risks were appropriately limited within the organization to maintain a more robust cybersecurity posture.

Military Advisement Team

In Q1 FY2024, The Military Advisement Team (MAT) continued to focus on the deployment activities of the federal EHR at Lovell FHCC. While the MAT tracked overall deployment activities, the focus was on addressing clinical challenges to help facilitate smooth clinical adoption.

The MAT was instrumental in identifying access and identity management as a key challenge and highlighting the possible risks. Dual-hat users who support both DOD and VA and have both DOD and VA roles, will need to be provisioned for federal EHR profiles in both the DOD and VA domains. The MAT also focused on another challenge, the Integration Validation event.

In this event, all clinical and financial functions are validated to ensure that any end user will be able to successfully interact with the new technology on the first day of go-live in Q2 FY2024. The impact of the MAT on a successful clinical adoption is highlighted by these two key and other ongoing activities (e.g., end-user device testing, ECIA documentation for radiology PACS, Microsoft Office 365 business-to-business deployment).

Operations and Sustainment

In Q1 FY2024, under the direction of the FEHRM Technology Office, the Operations and Sustainment (O&S) Team completed the PACS Visio block diagram for Lovell FHCC and effectively collaborated with key stakeholders from VA and DOD to validate the model. The

model was used to facilitate meetings with key stakeholders to discuss establishment of the connection between the Compass Router (VA West Campus) and ECIA (DOD East Campus). Additionally, during Q1 FY2024, the O&S Team brokered an agreement between the DOD and VA leading to the approval and signing of the JRF by the stakeholders.

The O&S Team continued to monitor Lovell FHCC hardware delivery, deployment, and validation activities. In efforts to facilitate a joint sustainment framework, the team set up an Operations, Sustainment, and Support Model for FEHRM Partners for Future Joint Sites, which involves help desk incident tracking, end-user devices performance, and other sustainment activities for successful future go-lives.

FEHRM Lessons Learned Repository Management

The FEHRM Lessons Learned (LL) Repository End-of-Year Showcase, held on December 7, 2023, provided an overview of the most impactful lessons reported from the Departments, the FEHRM Risk-Issue-Opportunity (RIO) Repository, Joint Sharing Sites Integration Workstream, and the Enterprise Operations Center (EOC). The presentations added depth to the most frequently viewed and shared lessons-learned categories, such as go-live training and stakeholder coordination. Below are some of the overall accomplishments for 2023 and goals set by key LL stakeholders for 2024:

2023 Accomplishments
- Collected and maintained 211 lessons from the Departments and other FEHRM partners.
- Established FEHRM LL management processes and incorporated them into the FEHRM RIO/LL Management Plan.
- Presented a FEHRM Lunch and Learn on the FEHRM LL Repository as a refresher and utilized slides in educational opportunities.
- Shared in demonstrations and conducted interviews about individual Department and FEHRM Program Area LL processes.
- Collected qualitative and quantitative survey data to learn more about the implementation of lessons.

Federal Electronic Health Record Operations

Enterprise Operations Center

The EOC is critical to operationalizing the FEHRM. It prepares federal EHR system partners and ecosystem colleagues for the intense schedule of go-live activities. The EOC supports cross-organizational collaboration and executive-level reporting on the Federal Enclave and ecosystem during federal go-live events. During Q1 FY2024, in addition to monitoring planned activities that could impact FEHRM partners, the EOC monitored and reported 77 unplanned incidents impacting the federal EHR or partners and supported executive

updates for the deployment of Wave PACIFIC. These reports included root-cause analyses, when known, and corrective actions taken for unplanned incidents. The EOC added value to the federal EHR by automating analysis tools, enabling shared agency reporting, refining response processes, participating in joint problem management improvement efforts, sharing observations regarding traceability of incidents and changes in the ecosystem, and expanding and enriching stakeholder engagements.

Federal Enclave Management

The FEHRM drove regular enterprise technical activities, including Enterprise Technical sessions, Enterprise Technical/Functional sessions with clinical leaders, technical/programmatic sessions, Environment Management Operations Center (EMOC) sessions and EMOC-Cyber sessions. These activities focused on the Federal Enclave, in partnership with DOD, VA, and DHS; vendors; and key stakeholders responsible for segments of the federal EHR ecosystem. In Q1 FY2024, those activities included sessions on Zero Trust Architecture, JOMIS: Operational Medicine Data Service, and 724 Downtime Viewer. The 724 Downtime Viewer EMOC resulted in a resolution that was agreed upon by DOD and VA on issues first discussed in 2020.

In Q1 FY2024, the FEHRM continued to produce and deliver the Enterprise DOD, VA, and DHS Monthly EHR Health Report to all technical directors, chief engineers, systems engineers, and their organizations despite challenges with the availability and fidelity of incident management data. The FEHRM continued to analyze Oracle Cerner LightsOn Network availability and Oracle Cerner federal Key Performance Indicator metrics. The DHMSM Major Incident Response Team's weekly and monthly incident accounting and reporting were discontinued as of September 2023. The FEHRM now receives the DHMSM Downtime Report, which lacks the utility for validating information on an interface level. As such, the FEHRM Enclave and Ecosystem Management Team is relying solely on LightsOn for interface-level specifics in this report. Regardless of these challenges, the monthly EHR health report continues to provide a month-by-month analysis of service availability and performance trends of the federal EHR Core, federal HA-CAS, CAS/VAN, infrastructure (i.e., the Defense Enrollment Eligibility Reporting System, or DEERS), and other solutions.

The FEHRM works with DOD and VA to actively manage the domains comprising the Federal Enclave to meet the needs of the Departments using the federal EHR.

Federal Release and Domain Management

In Q1 FY2024, the FERHM continued to support the federalization of the joint release management process and the Federal Release Working Group. The FEHRM maintains the standard operating procedures document and Federal Release Working Group (FRWG) Charter, both of which represent the agreed upon process of the FRWG. The FEHRM continues to deliver meeting documentation records for every FRWG meeting to more than 200 stakeholders across the enterprise.

During Q1 FY2024, the FEHRM continued to support domain management in disseminating and updating domain availability schedules across multiple workstreams within the enterprise. This effort continues to support Solution Owners and Experts in working within the correct domain as the path to production and reduces the impact of domain availability.

Federal Electronic Health Record Cybersecurity

Cybersecurity – Interagency Cybersecurity Assessment

In Q1 FY2024, the project mission was established to plan, coordinate, and conduct an independent cyber assessment on the operational readiness of the federal EHR system and its clinical support infrastructure in the DOD and VA health care delivery ecosystem. Working with stakeholders, the FEHRM expects the outcome in future quarters to include an assessment report with a set of actionable recommendations to improve the resiliency of the federal health care delivery ecosystem.

Cybersecurity – Joint Incident Management Framework

Documenting and optimizing a framework for jointly responding to cybersecurity incidents is foundational to the cybersecurity posture of the federal EHR. In Q1 FY2024, the FEHRM continued to facilitate the development of a joint cyber incident response framework that included identification, escalation, roles and responsibilities, management, and reporting across the Federal Enclave. The FEHRM's efforts continued to engage stakeholders to ensure that consistent incident management and reporting procedures are in place across the Federal Enclave supporting joint communications, situational awareness, and cyber-threat intelligence sharing.

Cybersecurity – Memoranda of Agreements

The FEHRM continued to facilitate working sessions with all stakeholders to review, update, and consolidate existing joint Memoranda of Agreements related to Federal Enclave operations. For Q1 FY2024, the FEHRM engaged with SMEs from DOD and VA to ensure that Memorandum of Understanding/Memorandum of Agreement content is complete, accurate, and up to date. This ongoing activity is also required for National Institute of Standards and Technology and Federal Information Security Management Act compliance.

Cybersecurity – Joint Security Operations Center

The FEHRM is facilitating the creation of a Joint Security Operations Center (JSOC) that shares the responsibility of monitoring, detecting, and responding to cybersecurity incidents. JSOC participants also shared information and coordinated responses to incidents. For Q1 FY2024 and beyond, the FEHRM shall work with stakeholders to design a JSOC to incorporate joint processes and procedures to manage, monitor, analyze, detect, prevent,

and respond to threats and ensure the confidentiality, availability, and integrity of the Federal Enclave.

The development of a JSOC will establish robust communication between VA Cybersecurity Operations Center and DOD Cybersecurity Service Provider that handles notification, communication, and reporting of Cyber Threat Indicators across all partner agencies. Furthermore, the JSOC will address relevant Mission/Capabilities Assurance entities and management and facilitation of cybersecurity incident processes and procedures. A key component of this effort is the ongoing development of a JSOC Project Plan that identifies key milestones, challenges, mitigations, and potential COAs by embracing a unified approach to facilitate cyber-threat intelligence sharing and coordinate rapid response capabilities, the JSOC will bolster the resiliency of the Federal Enclave and stand as a beacon of continuous improvement, leveraging of shared experiences, trend analysis, and best practices to drive innovation.

Cybersecurity Risk Mitigation

In Q1 FY2024, the FEHRM continued to produce a monthly Authority to Operate (ATO) Status Report for all systems in the federal EHR that tracks individual ATO lifecycles. The FEHRM worked with stakeholders to ensure that ATOs are current.

Interoperability Modernization

Joint Health Information Exchange

The FEHRM continues to maintain and enhance the joint HIE to create efficiencies while maintaining access to multiple private sector networks and frameworks. In Q1 FY2024, joint HIE optimization updates resulted in a 15–17% reduction in patient retrieve transactions from joint HIE to DEERS and a 54% reduction in transaction execution times for joint HIE patient retrieves, resulting in less load on DEERS and less wait times between internal DOD systems. The joint HIE maintains access to eHealth Exchange and CommonWell Health Alliance and fully implemented its connection to Carequality in Q1 FY2024, allowing exchange with more than 4,000 facilities.

Immunization Exchange with State IIS

Immunization Exchange is the capability that utilizes the Centers for Disease Control and Prevention (CDC) Immunization (IZ) Gateway to allow DOD and VA clinicians to report administered vaccines to and query from state and jurisdictional immunization information systems (IIS) and import immunization records into the federal EHR database. With DOD's initial implementation in Washington, Oklahoma, California, Florida, and North Carolina and VA's implementations in Washington, Idaho, Montana, and Ohio, DOD and VA continue to incrementally grow the immunization exchange connections. DOD is preparing to implement

connections to four additional states, while VA is coordinating implementation for Illinois and Wisconsin.

Seamless Exchange

Seamless Exchange is an advanced interoperability tool that aggregates, deduplicates, and normalizes data from various sources into a comprehensive view of patient information within the clinician's workflow. On November 7, 2023, the VA piloted Seamless Exchange at the La Grande Clinic within the Walla Walla VA system. The implementation was well received by VA stakeholders and expansion of the Seamless Exchange functionality at Walla Walla is planned, followed by an enterprise-wide deployment during FY2024. The FEHRM focused on expanding Seamless Exchange across the enterprise. This capability will save clinicians time, while also providing them more relevant health care information for treating their patients.

HealtheIntent

In Q1 FY2024, the FEHRM Data Exchange Team has continued to lead the HealtheIntent Data Upload Utility data ingestion effort into HealtheIntent, contributing to improvements in population health outcomes. DoD Colonoscopies for the last 10 years and mammograms for the last five years have been ingested into HealtheIntent from the legacy data lake in the Military Health Systems Information Platform, managed by Enterprise Intelligence and Data Solutions. Planned updates for Q2 FY2024 include ingesting lab results for the last two years followed by purchased care data in the future. In FY24 Q1, VA Ingested: 1 CTBIE file, 1 VADIR extended file, 1 DimFacility6a, and partially ingested several PCMM Web files via HIDUU to HealtheIntent.

New HealtheAnalytics reports and HealtheRegistries measures continue to be configured to enhance the quality of care. Significant capacity, enhanced performance, and other platform upgrades have been implemented in Q1 FY2024 to meet the increased demand with more planned in the future.

Military Service Exposures and the Electronic Health Record

Several provisions of the Sergeant First Class (SFC) Heath Robinson Honoring our Promise to Address Comprehensive Toxics Act of 2022 will have direct and implied effects on the federal EHR and the Federal EHR Individual Longitudinal Exposure Record (ILER) Interface. ILER is a novel IT system that correlates occupational and environmental exposures with individual Service members based on their work history and geographic proximity to known exposure events.

The FEHRM maintains several lines of effort focused on advancing the interoperability of exposure information and incorporation of the exposure information into the federal EHR.

- **Delivery of the Individual Exposure Summary to Clinicians and Veterans.** ILER's main output is the Individual Exposure Summary (IES), which is a list of potential occupational and environmental exposures experienced by individual Service members. Access to the IES by clinicians at the point of care supports the evaluation and treatment of potential health outcomes related to exposures. Documenting exposure-related conditions and health effects helps expedite the processing and adjudication of exposure-related claims. The FEHRM coordinated the delivery of DOD and VA functional requirements to the configuration team to make IES data available directly within the federal EHR to improve clinician workflow and reduce cognitive burden. Phase 1 integration of clinical functional requirements was completed in November 2023. Clinical users are now able to access exposure information and the IES directly from the EHR rather than having to access ILER separately, streamlining clinician workflow and enhancing provider satisfaction. As of mid-December 2023, nearly 1.8 million IESs have been returned from within the EHR using the new functionality. DOD clinical users have access to exposure info in the EHR. Although the VA requirements have been included, VA role configuration to access the data will be complete by the end of calendar year 2024.

- **National Standards for Exposure Exchange.** At present, military-service-related exposure names lack standardization, hindering information exchange between IT systems and impeding clinical decision support and research efforts that require aggregating individuals with similar exposures. The FEHRM leads efforts to identify existing health data standards and terminologies that could facilitate the standards-based exchange of exposure information. One effort, detailed in the following section, is examining the HL7 Fast Healthcare Interoperability Resources (FHIR) resource known as "U.S. Public Health Contact Information," which can serve as the basis for the exchange of an exposure. Another is analyzing the Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) to understand how it may be expanded to encode concepts related to exposures. The FEHRM worked to identify exposure concepts (i.e., substances, events, and locations) frequently tracked in ILER but unavailable in SNOMED CT. The FEHRM continues to research missing concepts and identifies academic citations to justify inclusion in SNOMED CT. Following the successful submission of its first batch of exposure terms that were accepted for clinical use in September 2023, the FEHRM submitted a second batch of terms in November 2023 for potential inclusion in the March 2024 release. FEHRM will continue to develop SNOMED terms for submission to include exposure substances and events tracked in ILER, called out in legislation, and considered high visibility and high priority by the Departments. The FEHRM is taking special consideration for inclusion of per- and polyfluoroalkyl substances, chemicals related to toxic burn pits, dioxins and jet fuels. The FEHRM continues to collaborate with experts from the Office of the National Coordinator for Health Information Technology (ONC), the National Institute of Environmental Health Sciences and the Departments to advance these efforts for all federal partners involved in exposure-related clinical care and research.

- **Participation in the Toxic Exposure Research Working Group.** Section 501 of the SFC Heath Robinson Honoring our Promise to Address Comprehensive Toxics Act of 2022 established a Toxic Exposure Research Working Group. This Working Group is charged with identifying collaborative research activities and resources available and to develop a five-year strategic plan to carry out collaborative research activities related to toxic exposures. The FEHRM's Interoperability Workstream is a member of this Working Group and contributes to the advancement of the group's priorities.

Enterprise Reporting and Performance Measurement

One of the most important and anticipated benefits of the federal EHR is the convergence of clinical information for multiple federal organizations into one electronic system. The Health Data Interoperability (HDI) Dashboard displays key metrics that describe and trend progress toward increased levels of inter-organizational interoperability. Metrics are divided into four categories—Department Integration, Community Partnerships, Patient Engagement, and Federal Partner Onboarding. The current HDI metrics are presented and discussed in Appendix A. The FEHRM continues to review new and existing measures for presentation on the dashboard in future quarters.

Standards Development and Adoption

Interoperability regulations, policies, standards, and technologies are vital to the exchanging and interpreting health data. A collaborative endeavor is essential to achieve the highest level of interoperability for the federal EHR. Our collaboration effort involves coordination among federal agencies, health care providers, and information technology vendors. Their collective goal is to implement interoperability standards and best practices. By doing so, we ensure that Service Members, Veterans, and their families receive the best possible care.

The FEHRM recognized the need to establish standards guidance to advance interoperability between the federal EHR and legacy and community partner systems, so the FEHRM's Digital Health Standards developed a strategy that achieves operational excellence to influence the development and promote the awareness and adoption of standards.

To influence the development of interoperability standards, the FEHRM engaged with Standards Developing Organizations (SDOs), aligning the FEHRM standards subject areas or domains with National Defense Authorization Act (NDAA) FY2020 and stakeholder priorities. The FEHRM Standards Group works diligently with selected working groups to contribute expertise in the standards development. The workgroup endeavors involved daily analysis and collaboration with leaders across federal agencies, health care providers, software developers and other interoperability experts to improve the quality of the data that the federal EHR captures. The FEHRM influenced the standards development process by

keeping joint interoperability and federal EHR requirements at the forefront of the discussion.

In addition to SDO work group participation, the FEHRM engaged with other federal agencies, such as the ONC, to influence interoperability regulation and policy development. The FEHRM not only reviewed and provided subject matter expertise but also coordinated reviews across multiple federal agencies and consolidated feedback representing one voice to accelerate the policy development process.

To promote the awareness and adoption of health interoperability, the FEHRM hosts and participates in multiple forums to share knowledge of interoperability standards, policies, and trends with stakeholders and provided guidance, as needed. Specifically, the FEHRM hosts VA Interoperability Leadership Standards Work Group meetings, FEHRM Standards Stakeholder meetings, and HL7 Government Birds of a Feather meetings. These forums provide the platforms to collaborate and influence health care standards and interoperability at the Department level, across federal partner organizations, and internationally. More than 112 guests attended the September 2023 HL7 Government Birds of a Feather event with positive feedback received from participants.

Below are current interoperability standards initiatives and activities that are anchored to the FEHRM's mission.

Standards and Strategy Development

The FEHRM's Digital Health Standards Group refined and expanded its involvement with federal partners and SDOs during Q1 FY2024 to advance standards and strategy development, monitor progress and report on trends to the greater stakeholder community. These activities ensured continued alignment with FEHRM's NDAA FY2020 mandate and the office's subsequent mission, goals, and objectives.

The Standards Group engaged in standards development at HL7, ONC, and the Institute of Electrical and Electronics Engineers (IEEE) to influence interoperability and data exchange in various subject areas or domains. The Standards Group selected the subject areas based on their alignment with NDAA FY2020 and national and stakeholder priorities. The FEHRM expanded on its collaboration with the ONC and the American Dental Association (ADA) to promote enhancement and clarification of the existing dental data elements in the United States Core Data for Interoperability Plus (USCDI+). This is to promote federal and international dental standards and interoperability of dental electronic health data.

The FEHRM also engaged the VA Interoperability Leadership (VAIL) Team to collaborate with VA leaders on the next iteration of the Department's strategy for the advancement of joint interoperability. The FEHRM Digital Health Standards Lead, along with VA's Health and Medical Informatics Office's Health Architect, signed a charter to establish and co-chair the VAIL Standards Work Group (SWG). The SWG is a joint work group between VHA and the

FEHRM that provides a venue for standards collaboration, coordination, and awareness. This charter represents a success in maintaining VA's trust of the FEHRM's expert advice and track record in improving standards interoperability adoption and best practices. The FEHRM created the SWG high-level work plan as well as a work plan for 2024 and applied subject matter expertise to develop joint interoperability standards content for the VA Interoperability Roadmap 2024–2028, including goals, approach, and targeted metrics to measure success.

Federal Agency, National, and International Standards Collaboration

The FEHRM regularly collaborates with numerous stakeholder organizations in its pursuit of the development and implementation of standards that will improve interoperability. This includes engagement with federal partners, national and international SDOs, and industry.

Health Level Seven International

HL7 is an international SDO dedicated to providing a comprehensive framework and related standards for exchanging, integrating, sharing, and retrieving electronic health information. SDOs are member-supported organizations, often accredited by the American National Standards Institute, that develop and maintain standards to meet government and industry needs. The FEHRM's engagement with HL7 benefits the Departments by improving interoperability with external health care organizations. During Q1 FY2024, the FEHRM engaged with HL7 through numerous mechanisms and forums, including:

- **HL7 Balloting.** HL7 Ballot Cycles and the associated working group meetings provide valuable opportunities for FEHRM to influence the direction of interoperability initiatives and standards development. Balloting on emerging standards occurs each January, May, and September and is the culmination of months of work from sponsoring HL7 working groups. The FEHRM prioritized six ballots for review of the 36 ballots release by HL7 for the January 2024 balloting cycle. Prioritization focused on ballots that had a direct impact on interoperability between DHA and VHA, including the following:
  - HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes.
  - HL7 FHIR Implementation Guide: Canonical Resource Management Infrastructure (CRMI).
  - HL7 FHIR Implementation Guide: US-Core, Release 7.0.0.
  - HL7 FHIR Release 6
  - HL7 Guidance: AI/ML Data Lifecycle.

  The balloting cycle began on December 22, 2023, with a one-month duration, ending on January 22, 2024. The resulting standards improve HDI, positively impacting health care for Veterans and their families and improving patient outcomes.

- **HL7 Government Birds of a Feather (BOF).** The BOF meeting is the only forum during HL7 working group meetings that brings together government agencies to discuss standards and exchange ideas. This includes federal partners from the Centers for Medicare & Medicaid Services (CMS), ONC and CDC; stakeholders from DOD and VA; industry representative payers; EHR vendors; and experts in health standards.

  The FEHRM Standards Group initiated planning for the January 2024 BOF meeting during Q1 FY2024 through scheduling and logistics coordination with HL7, promotion of the event via communication to more than 150 invited stakeholders, and close collaboration with federal partners to identify speakers and develop presentation materials. Focus areas for the meeting included topics such as:
  - The Food and Drug Administration's use of generative artificial intelligence in health care and the increasing importance of health care terminology.
  - VA's Immersive Program and how it is defining a new reality in health care delivery and experience using immersive technology (e.g., extended reality, virtual reality, augmented reality),
  - CDC's advancement of the nation's preparedness and response for public health emergencies through data and information interoperability.
  - Progress towards USCDI acceptance of ADA recommended wording changes regarding ADA Code on Nomenclature (CDT) codes, with continued analysis of the efficacy of an approach to developing a separate USCDI+ dental domain.
- **HL7 Working Groups.** The FEHRM participated in and contributed to several HL7 working groups, which allow federal agencies, stakeholders and the HL7 community to work on standards and network with global industry leaders. During Q1 FY2024, the FEHRM engaged with, co-chaired, or led the following HL7 workstreams with the areas of focus noted:
  - **Gender Harmony**. HL7 is developing standards to improve data accuracy for sex and gender information in health IT systems as a change from the current common situation for a single data element to be used to capture both sex and gender information. The FEHRM leveraged its participation in the Vocabulary Work Group sessions to review and comment on the Sex and Gender Representation ballot to ensure alignment with the Departments' position on gender fields.
  - **HL7 EHR Working Group—Toxic Exposures.** The FEHRM continued to identify existing health data standards that could be enhanced to enable the standards-based exchange of exposure information. The FEHRM is advocating for the addition of "Toxic Exposures" as part of the ONC's USCDI to support additional improvements in national HDI and will continue to collaborate with the ONC and Departments to advance these efforts for all federal partners involved in exposure-related clinical care and research.
  - **HL7 Affinity Group.** This forum serves as a key platform for reviewing and guiding the design of Consolidated Clinical Document Architecture (C-CDA) and FHIR. By uniting federal partners from the Department of Defense (DoD),

Veterans Affairs (VA), and the Office of the National Coordinator for Health Information Technology (ONC), it fosters vital collaboration on healthcare technology and policy. Additionally, it acts as a technical hub for experts to exchange ideas, driving innovation and providing guidance for implementing ONC's USCDI. The outcomes of these meetings significantly influence HL7 standards and national interoperability efforts. In Q1 FY2024, the FEHRM facilitated this group meeting to discuss the FHIR Roadmap for the Trusted Exchange Framework and Common Agreement (TEFCA) version 2.0 and Qualified Health Information Networks, in addition to contributing to the identification of examples for Social Determinants of Health and coordination of the January HL7 ballot review cycle.

International Organization for Standardization

International Organization of Standardization (ISO) is an independent, non-governmental international organization with a membership of 170 national standards bodies. ISO brings together experts to share knowledge and develop international standards that support innovation and provide global solutions. The FEHRM has held a sustained engagement posture with ISO through numerous mechanisms and forums. The Digital Health Standards Group co-authored and co-led the development and Q1 FY2024 release of the final Public Health Emergency Preparedness standards, ISO Standard 5477 Interoperability of Public Health Emergency Preparedness and Response Information Systems. These standards are significant at both the national and international levels, including countries like Australia, Canada, Japan, and South Korea. The new standards will help countries, including the United States, collect, manage, and predict public health emergencies, ensure preparedness and effective responses, and more specifically, cover aspects of toxic exposures.

FEHRM Monthly Stakeholder Collaboration

The FEHRM hosts monthly Standards Stakeholder Group meetings to share updates and advancements in the national and international standards landscape with the Departments and key stakeholders. The Standards Stakeholder Group meeting is a venue to promote standards that are released by HL7, International Organization for Standardization, and IEEE working groups. The FEHRM continued to enhance the scope and depth of these meetings during Q1 FY2024 through the addition of presentations from federal agencies, such as the VHA on FHIR guidance for successful adoption, CDC on public health, DHA on artificial intelligence in dentistry, and ONC on USCDI+.

U.S. Department of Health and Human Services

The FEHRM collaborates with U.S. Department of Health and Human Services (HHS) agencies to advance health care interoperability. It supports ONC's ISA maintenance, Dental Information Exchange, CMS, and the Workgroup for Electronic Data Interchange (WEDI).

Centers for Medicare & Medicaid Services

CMS continues to release policies to advance nationwide HIE, reduce the administrative burden for providers and incentivize effective use of health IT in 2023 and beyond. CMS incentivized the HIE under TEFCA. TEFCA is anticipated to be a strong catalyst for the maturation of FHIR and many other standards. During Q1 FY2024, the FEHRM engaged in and contributed to the CMS Interoperability & Standards Collaborative forums. Focus areas included 1) Optimizing Healthcare Delivery to Improve Patient Lives and 2) Enabling Patient Access to Health Data for Actionable Results.

Workgroup for Electronic Data Interchange (WEDI)

WEDI is recognized and trusted as a formal advisor to the Secretary of HHS whose main mission is to advance standards for electronic administrative transactions and promote data privacy and security. The FEHRM joined discussions at numerous WEDI forums and monthly seminars, including Understanding the Potential Benefits and Implementation Challenges of ICD-11.

ONC continues to encourage stakeholders to implement and use the standards and implementation specifications identified in the ISA as applicable to the specific interoperability needs that must be addressed. Along with the release of standards approved by USCDI and the Standards Version Advancement Process, the ISA Reference Edition annual update is a critical way to advance standards. During Q1 FY2024, the FEHRM developed a summary and coordinated federal partner review of the updated ISA Reference Edition to create enhance awareness of its intent and solicit feedback for inclusion in the next release.

Additionally, the FEHRM collaborated with ONC to better understand and contribute to the development of USCDI versions 4 and 5 and USCDI+ and met with ONC Standards Director and ADA Coding/Dental Data Exchange Director regarding USCDI changes to the ADA CDT code wording. Discussions were held around the possibility of developing a USCDI+ dental domain and the Standards Group will continue to provide expert advice to assist in the creation of this domain. The FEHRM also participated in the WEDI Dental Sub-Workgroup to provide subject matter expertise in support of collaborative discussions on the mapping of the claims process from a macro perspective.

Federal and Industry Stakeholder Engagements

In keeping with the FEHRM's charter to advance interoperability across the federal and private sectors, the FEHRM collaborates with federal and private organizations that develop policies, provide guidance regarding standards, and advance the development of health information technologies. The FEHRM monitors and analyzes publications from federal

agencies, meets with their staff to share knowledge and provide input and informs internal leaders of significant developments that may affect the deployment of the federal EHR.

Through various events, the FEHRM collaborated with both federal and industry organizations to learn and elevate new ideas in health care interoperability and IT modernization. During Q1 FY2024, the FEHRM:

- Hosted the quarterly FEHRM Interoperability, ONC, and CMS Joint Coordination Meeting to exchange interoperability initiatives and current projects and explore potential collaboration opportunities.
- Participated in the Federal Health IT Advisory Committee (HITAC) to recommend to ONC policies and standards relating to implementation of a health IT infrastructure that advances electronic access, exchange, and use of health information.
- Participated in the ONC HITAC Annual Report Workgroup meeting to contribute to and review the HITAC Annual Report, which is submitted to the HSS Secretary and Congress each fiscal year.
- Participated as a member of the Federal Health IT Coordinating Council, chaired by ONC, which brings together 30-40 federal partners involved in health IT activities.
- Participated in the 2023 Annual ONC Meeting.
- Collaborated with ONC stakeholders through participation in numerous ONC engagements, including the ONC Technical Forum and Clinical Decision Support Series to share and learn about advances in health technology to improve patient care, health equity, data exchange, and interoperability. The FEHRM also provided comments to support the advancement of the USCDI and the 2024 Interoperability Standards Advisory.
- Participated in the CMS Conference on Optimizing Healthcare Delivery to Improve Patient Lives, where leaders from the federal government, health provider organizations, and the patient advocacy community focused on opportunities across the health care enterprise to reduce administrative burden, strengthen access to quality care, and make it easier for clinicians to provide care.
- Participated in the CMS-ONC Joint Forum on Enabling Patient Access to Health Data for Actionable Results and the CMS Interoperability & Standards Collaborative Forums, where federal and industry organizations collaborate and learn about technology and interoperability innovations at CMS.
- Participated in the Defense Strategies Institute's DOD/VA and Government Health IT Summit, where FEHRM leaders presented on Delivering a Secure and Interoperability Health IT System for Patient-Centered Care in the Federal EHR.

User Engagement and Assessments

Federal Electronic Health Record Annual Summit

The congressionally mandated Federal EHR Annual Summit is an opportunity for the federal EHR end-users, those who have been trained on the platform ahead of deployment and stakeholders involved with the federal EHR to connect with one another and Solution Owners and Experts around a set of specific topics. The outcome of such engagement includes insights into how end-users can use the platform successfully and opportunities for improvement. Participants also learn about the most recent updates and advances to the platform, share best practices and engage in valuable discussions that help enhance the federal EHR to better serve Service members, Veterans, and other beneficiaries.

During Q1 FY2024, the FEHRM hosted the 2023 Federal EHR Annual Summit, October 24 – 26, 2023, and completed the review and analysis of feedback collected before, during, and after the event. FEHRM staff members and affiliates attend each session to take notes and capture information, which serves as valuable feedback to the Department leadership teams. While the notes are specific to a session or topic, the FEHRM End-User Engagement Team conducts analysis to also provide a thematic review of feedback collected before (Registration Survey), during (notes collected in sessions), and after (Post-Summit Survey) the summit. Analyses of outcomes have been included in Congressional testimony and preliminary drafts of several reports, including a standalone End-User Feedback Summary and sections of a report that was delivered to Congress. In each case, the outputs focused on two threads of information: first, the positive and negative thematic impressions from participants and, second, action items that were raised during the 2023 Federal EHR Annual Summit—those that had been addressed during the summit and through continued dialogue after the event concluded. A total of 127 action items were created after the 2023 Federal EHR Annual Summit. Continued follow-up work by DHA and VHA Solution Owners and Experts and peers ensures that all these items are on track to be completed by the conclusion of Q2 FY2024.

More than 1,000 end users registered for the three-day event, held October 24 – 26, 2023. Staff from the VA, DOD, USCG, the FEHRM, Indian Health Service (IHS), Government Accountability Office, HHS, National Institutes of Health, NOAA, congressional staffers, and the VA Office of Inspector General were among summit registrants.

The summit included 19 separate sessions, each organized around a topic in which end-users had expressed interest. Examples include End-user Engagement, Ambulatory Medicine, Inpatient Physician, Inpatient Nursing, and Pharmacy. A series of Wellness sessions were also introduced in this iteration of the annual summit. Attendees had the opportunity to earn continuing education units (CEUs) for each hour spent in a session, with a maximum of 38 CEUs available.

Registrants were able to engage directly with Solution Owners and Experts, Oracle Health staff, and peer end-users during each session. This engagement loosely focused on a series of questions that FEHRM staff pulled from relevant open-text responses to the Annual Summit Registration Survey. The FEHRM parsed through at least 987 unique open-text responses recorded in the Annual Summit Registration Survey to select the 303 pre-populated questions posed across the summit's 19 sessions. Each session included between one and 24 pre-populated questions available to the moderator to help prompt discussion and engagement.

The FEHRM integrated data from several sources to develop the agenda and scope of the 2023 Federal EHR Annual Summit. Lessons learned from previous annual summits were applied, as were responses to the registration survey and data obtained from a series of interviews conducted as part of a listening tour with VA and DOD end-users during Q4 FY2023. The different data points helped the Federal EHR Annual Summit Planning Team to select the 19 most relevant session topics and populate each session with a series of questions, or prompts, to spur engagement between participants and Solution Owners or Experts.

End-user understanding and feedback are essential in the design, development, and improvement of the summit. End-user insight serves as a pivotal cornerstone in the development and improvement of future EHR deployments and functionality. By directly incorporating user experiences and perspectives, the FEHRM is better positioned to create solutions that are genuinely tailored to user needs, enhancing functionality, usability, and overall user satisfaction.

Clinician and Patient User Satisfaction

During the reporting period, the FEHRM continued to collaborate with DOD and VA clinician and patient satisfaction SMEs and joint working groups, which previously established the common instruments and methodologies to survey and measure clinical and patient use and satisfaction with the federal EHR. The FEHRM received results during each quarter of FY2023 for the Patient Satisfaction Survey from DOD and VA peers. The DOD provided FY2023 Clinician Satisfaction Survey results in Q1 of FY2024, while their VA colleagues await clearance to share the data they collected in FY2023.

The FEHRM established collaborative joint working groups to equally assess satisfaction across DOD and VA, among both clinicians and patients, to meet NDAA FY2020 requirements, ensure agreement across the agencies, and save government resources. FEHRM efforts ensured that DOD and VA both apply the same question sets to clinicians and patients, respectively. The clinician- and patient-based data collection efforts both rely on nationally recognized assessments: The "KLAS Arch Collaborative for Clinician Satisfaction" is applied to the DOD and VA clinician surveys, while the "Consumer Assessment of Healthcare Providers and Systems Health Information Technology (CAHPS-HIT)" item set is used to assess DOD and VA Patient Satisfaction.

In Q1 FY2024, the FEHRM also supported the Patient Satisfaction Joint Working Group to improve the survey itself, as the working group members noted that the CAHPS-HIT questions no longer adequately served their needs for a satisfaction assessment. While this improvement remains a work in progress, the FEHRM has explored the processes necessary to update the DOD and VA patient satisfaction surveys. Also, the team drafted an initial set of questions that could replace the CAHPS-HIT set in a manner that more effectively captures information regarding a patient's satisfaction with the federal EHR. The Patient Satisfaction Joint Working Group expects to install the new questions before the end of FY2024. Representatives from the VA introduced a similar need to update satisfaction questions in the Clinician Satisfaction Joint Working Group during Q1 FY2024. The FEHRM will support any efforts to improve the VA Clinician Satisfaction Survey, working to (as possible) ensure that DOD and VA continue to pose an identical set of questions.

Federal Electronic Health Record Partner Onboarding

The FEHRM actively collaborates with various federal agencies to advance their health care operations through the implementation of the federal EHR.

NOAA successfully implemented the federal EHR in June 2023. Since then, the FEHRM has been engaged with NOAA to champion their specific post-deployment requirements, including the investigation of creating templates that mirror standard occupational medicine documents. MHS GENESIS is indispensable for officer candidate screening and documentation collaboration with the Military Entrance Processing Station. NOAA has found MHS GENESIS to be an essential tool for clearing interservice transfer applicants stationed overseas.

The Occupational Health Office in the National Security Agency (NSA) continues progress toward joining the federal EHR in 2024. In September 2023, a support agreement for MHS GENESIS was signed. The DHMSM Implementation Team is coordinating the implementation of MHS GENESIS to be synchronized with the implementation of the Medical Community of Interest, or Med-COI, at the NSA Main Clinic.

The Armed Forces Retirement Home (AFRH) has two physical locations in Washington, D.C. and Gulfport, Mississippi, collectively caring for approximately 1,124 Veterans. These locations provide onsite ambulatory clinics which offer services including primary care, dental, podiatry, optometry, case management, rehabilitation, and long-term nursing care. The AFRH Functional Requirements Document and Cover Page Memo were finalized, signed by the AFRH Chief Operating Officer, and sent to the DHMSM Implementation Team in Q1 2024.

The U.S. Customs and Border Protection (CBP) West Virginia Advanced Training Center Health Care Clinic is in their Collaborative Discovery Phase. Their federal EHR functional requirements document is available for their review and consideration of next steps.

Conclusion

Throughout Q1 FY2024, the Departments remained committed to measuring, assessing, and enhancing HDI with the single, common federal EHR as well as with their private sector partners who care for DOD, VA, USCG, and NOAA beneficiaries. Enabling HIE serves as the foundation for a patient-centered health care experience, seamless care transitions, and improved care for Service members, Veterans, and their families. The FEHRM will monitor and report data sharing among the Departments as part of its broader support of the Departments' commitment to advance HDI through interoperability modernization strategic planning.

![Federal Electronic Health Record Modernization logo]

Appendix A: Health Data Interoperability Metrics Details

HDI Metrics Details: Throughout Q1 FY2024, the FEHRM, DOD, and VA continued to collaborate to monitor baseline HDI metrics and the progress toward modernization and enhancement of HDI by both Departments. Each section displays a different interoperability dimension, as derived from the FEHRM's HDI Measurement Framework: Department Integration, Patient Engagement, Community Partnerships, and Federal Partner Onboarding. Figure 1 represents a snapshot of the Q1 FY2024 HDI Metrics Dashboard.

Figure 1. Q1 FY2024 HDI
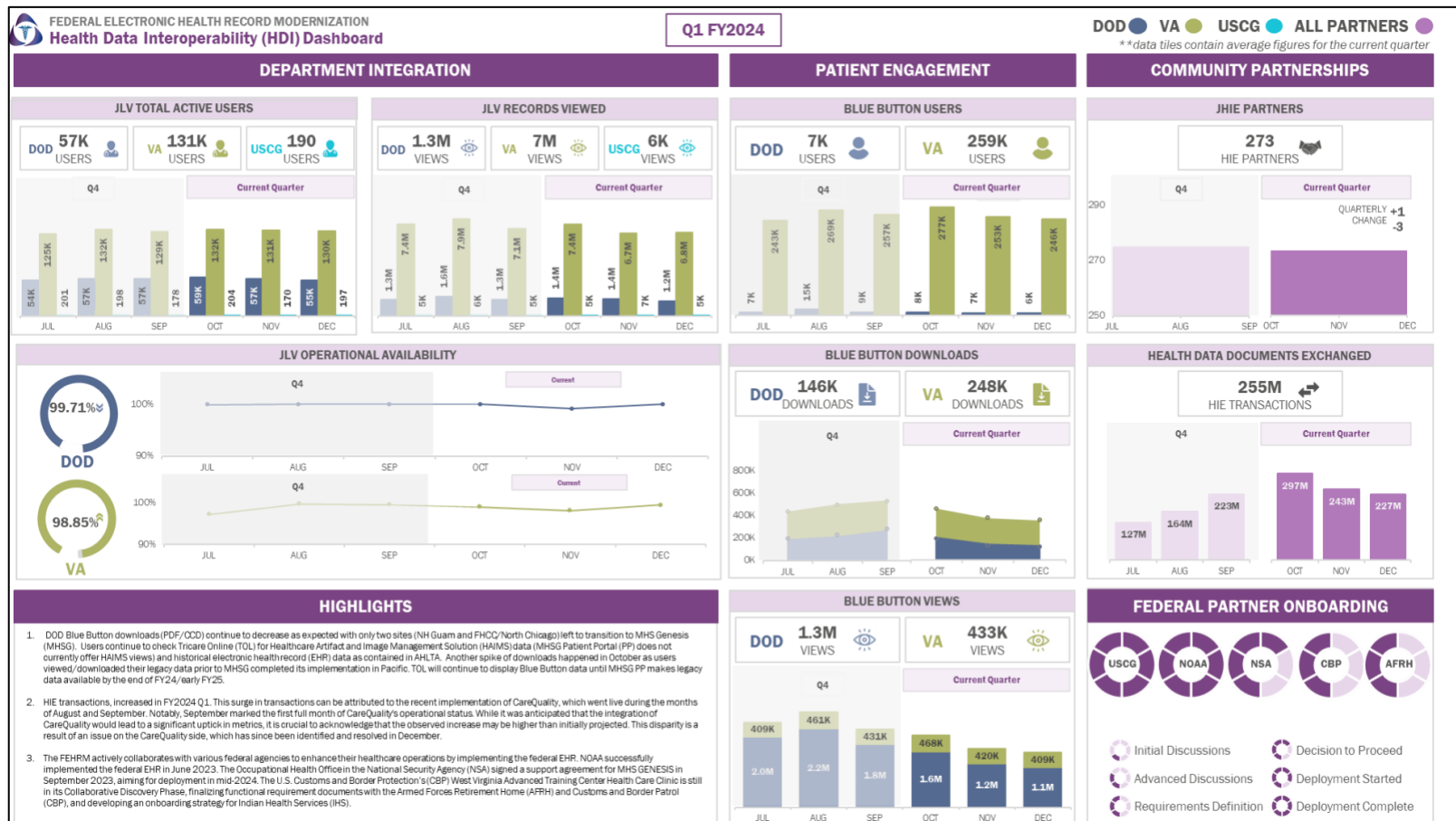
Q1 FY2024 Highlights: Metric highlights are captured in Table 1 below.

Table 1. Quarter Highlights

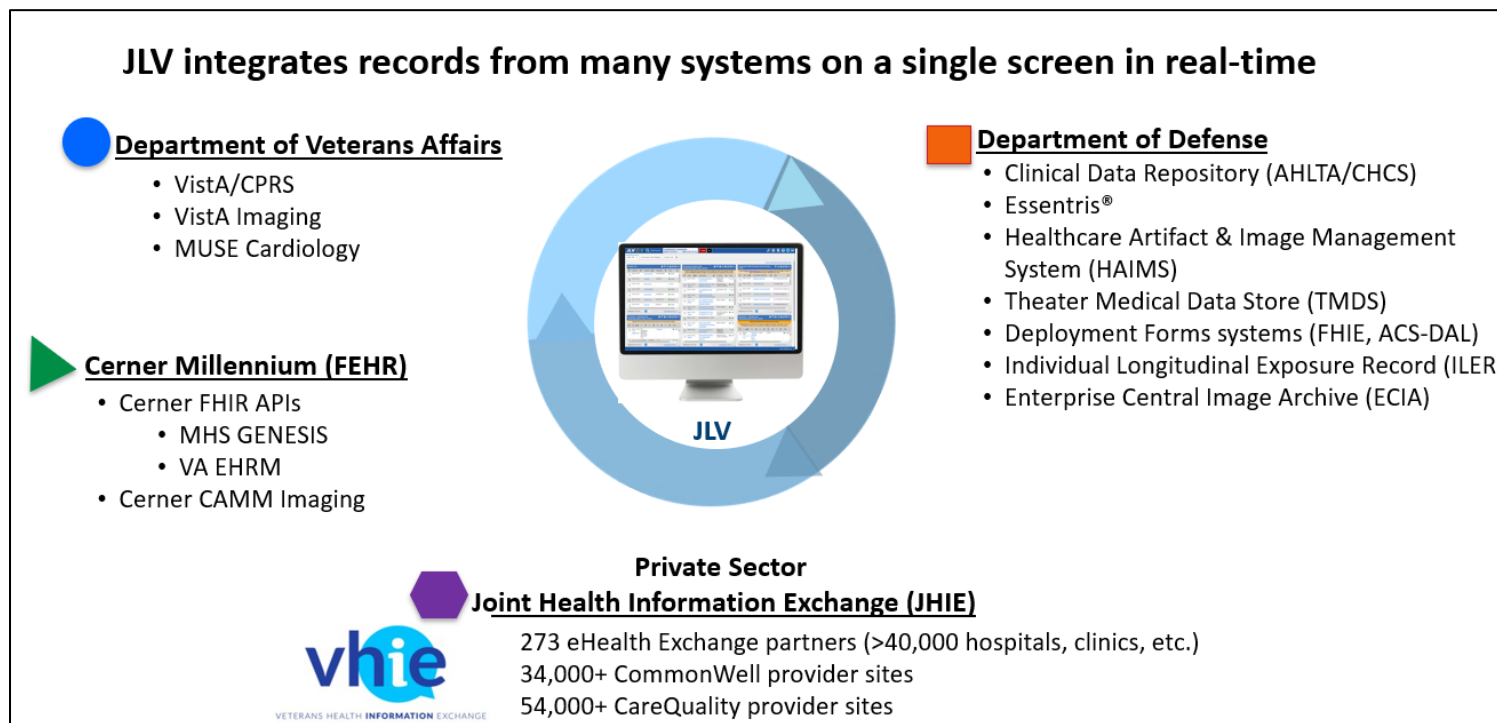| Metrics	Highlights
Blue Button Downloads (DOD)	DOD Blue Button downloads (PDF/CCD) continue to decrease as expected with only two sites (NH Guam and Lovell FHCC/North Chicago) left to transition to MHS GENESIS. Users continue to check Tricare Online (TOL) for Healthcare Artifact and Image Management Solution (HAIMS) data (the MHS GENESIS Patient Portal does not currently offer HAIMS views) and historical EHR data as contained in AHLTA. Another spike of downloads happened in October as users viewed and downloaded their legacy data prior to MHS GENESIS completing its implementation in the Pacific. TOL will continue to display Blue Button data until the MHS GENESIS Patient Portal makes legacy data available by the end of FY2024/early FY2025.
HIE Transactions	HIE transactions increased in FY2024 Q1. This surge in transactions can be attributed to the recent implementation of Carequality, which went live during the months of August and September. Notably, September marked the first full month of Carequality's operational status. While it was anticipated that the integration of Carequality would lead to a significant uptick in metrics, it is crucial to acknowledge that the observed increase may be higher than initially projected. This disparity is a result of an issue on the Carequality side, which has since been identified and was resolved in December.
Federal Partner Onboarding	The FEHRM actively collaborates with various federal agencies to enhance their health care operations by implementing the federal EHR. NOAA successfully implemented the federal EHR in June 2023. The Occupational Health Office in the NSA signed a support agreement for MHS GENESIS in September 2023, aiming for deployment in mid-2024. CBP West Virginia Advanced Training Center Health Care Clinic is still in its Collaborative Discovery Phase, finalizing functional requirement documents with AFRH and CBP, and developing an onboarding strategy for IHS.

DOD and VA use the software applications and tools described below to support EHR data interoperability:

1. **JLV.** The JLV, released in 2013, is a web-based graphical user interface jointly developed by DOD and VA to provide a near real-time, integrated, and chronological view of EHR information. It allows clinicians to view an integrated, read-only display of patient data from DOD, VA, and joint HIE participating provider organizations within a single application. JLV retrieves clinical data from numerous native data sources and systems, displayed in Figure 2.

Figure 2. JLV Data Sources and Systems

JLV integrates records from many systems on a single screen in real-time

Department of Veterans Affairs
- VistA/CPRS
- VistA Imaging
- MUSE Cardiology

Cerner Millennium (FEHR)
- Cerner FHIR APIs
  - MHS GENESIS
  - VA EHRM
- Cerner CAMM Imaging

Department of Defense
- Clinical Data Repository (AHLTA/CHCS)
- Essentris®
- Healthcare Artifact & Image Management System (HAIMS)
- Theater Medical Data Store (TMDS)
- Deployment Forms systems (FHIE, ACS-DAL)
- Individual Longitudinal Exposure Record (ILER)
- Enterprise Central Image Archive (ECIA)

JLV

Private Sector
Joint Health Information Exchange (JHIE)

273 eHealth Exchange partners (>40,000 hospitals, clinics, etc.)
34,000+ CommonWell provider sites
54,000+ CareQuality provider sites

vhie
VETERANS HEALTH INFORMATION EXCHANGE

2. **Joint HIE.** The joint HIE is a secure network that shares Veteran and Military Health System beneficiary health care information electronically with MEPCOM, NOAA, and participating provider organizations who join the eHealth Exchange[1] and CommonWell.[2] Community partners who join undergo stringent security requirements to access patient records and health information securely, regardless of whether the facility is a civilian provider, military hospital, outpatient clinic, or VA Medical Center.

3. **Blue Button.** Blue Button enables patients from DOD and VA to access their personal health data from their EHR, including allergies; laboratory and radiology results; vital signs; and outpatient medications, problem lists and encounters. The new MHS GENESIS Patient Portal also allows TRICARE beneficiaries to exchange secure messages with their care team; schedule medical and (active duty) dental appointments online; access notes, labs, and medications; and request prescription renewals online.

The FEHRM, DOD, and VA continue to expand HDI by improving upon the more than eight million patient records currently shared monthly between the two Departments, as defined by the total number of JLV records viewed by the Departments reported as of December 31, 2023.
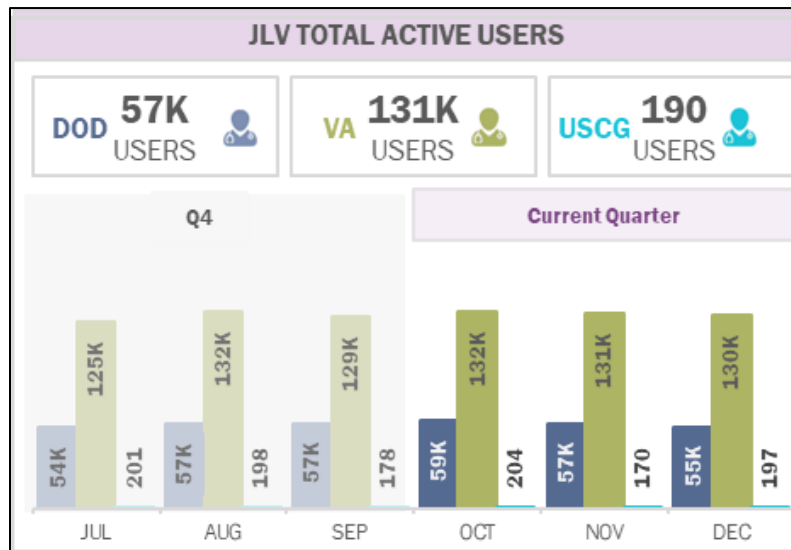
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[1] eHealth Exchange - Network of Networks connecting federal agencies and non-federal health care organizations so medical data can be exchanged nationwide. eHealth Exchange online, October 14, 2022, https://ehealthexchange.org/

[2] CommonWell – A service that collectively allows individuals and caregivers to find and access records associated with a patient regardless of where the care was delivered. CommonWell Alliance Online, October 14, 2022, https://www.commonwellalliance.org/about/faq/

Department Integration

Value Statement: The FEHRM tracks utilization of legacy and modern EHRs, which enables Departmental leadership and Congress to assess the reliability of legacy systems and evaluate the Departments' progress in transitioning from legacy systems to the single, common federal EHR.

JLV TOTAL ACTIVE USERS

DOD **57K** USERS

VA **131K** USERS

USCG **190** USERS

	Q4			Current Quarter		
	JUL	AUG	SEP	OCT	NOV	DEC
	54K / 125K / 201	57K / 132K / 198	57K / 129K / 178	59K / 132K / 204	57K / 131K / 170	55K / 130K / 197

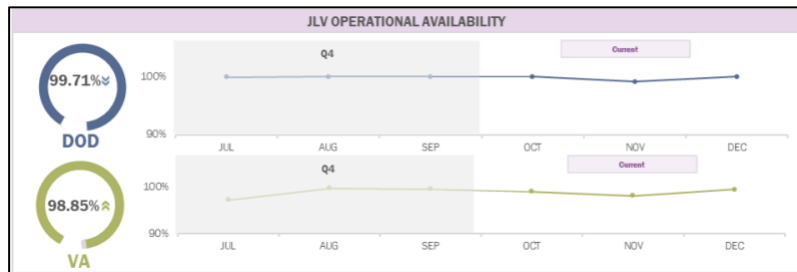### JLV Total Active Users

Definition

Active User: A unique user who has logged into JLV in a given month.
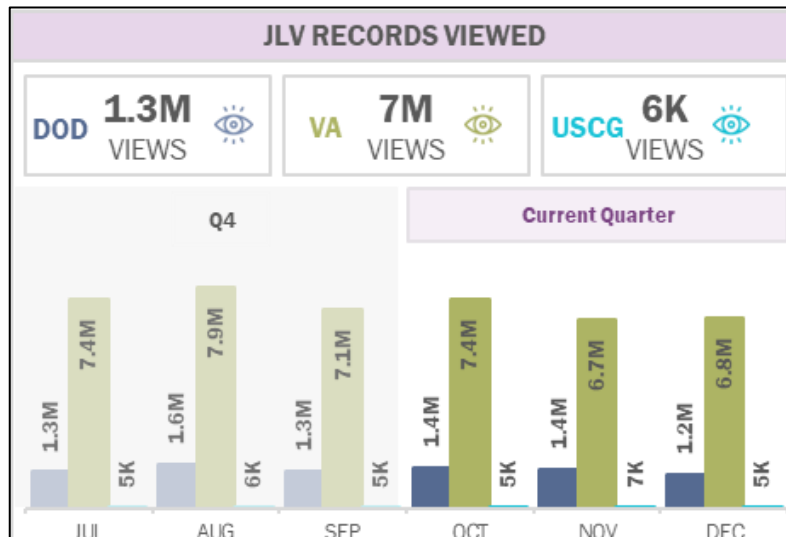
JLV Records Viewed

Definition

Monthly total number of patient records viewed using the JLV for DOD, VA, and USCG.
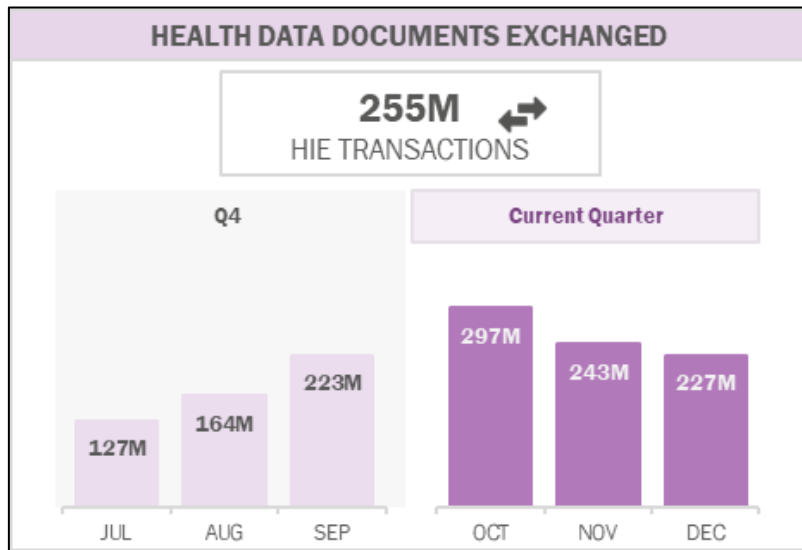
JLV Operational Availability

Definition

DOD: The percentage of time during the month that the JLV was available for login and functionally operational by DOD and VA users (i.e., available for users to conduct a patient search and to access both DOD and VA EHR data in the cloud environment).

VA: The percentage of time during the month representing the end-user experience, where JLV was available for login and functionally operational (with users able to conduct patient search/lookup and retrieve DOD, VA, and federal EHR data in production environments).
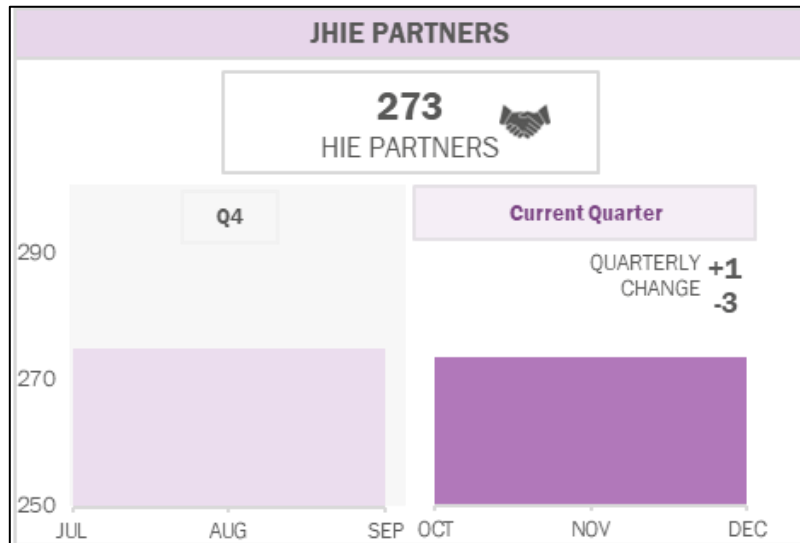
Community Partnerships

Value Statement: The FEHRM monitors the Departments' progress toward consistent, secure, and reliable health data exchange by tracking joint HIE partner onboarding and joint HIE transactions between the Departments and private care partners as best practices and improvements are implemented.

HEALTH DATA DOCUMENTS EXCHANGED

255M ⇄
HIE TRANSACTIONS

Q4			Current Quarter		
127M	164M	223M	297M	243M	227M
JUL	AUG	SEP	OCT	NOV	DEC

Joint HIE Transactions

Definition

Monthly count of C-CDA, C32, or C62 (document architecture that facilitates interoperability of health data between EHR systems) documents exchanged between the Departments and private partners.

JHIE PARTNERS

273
HIE PARTNERS

Q4	Current Quarter

QUARTERLY **+1**
CHANGE **-3**

290

270

250

JUL   AUG   SEP   OCT   NOV   DEC

Joint HIE Partners Onboarded

Definition

Monthly and cumulative count of participating provider organizations who are partners in the joint HIE: A provider organization is counted as one partner if the provider has one or more data-sharing agreement with DOD or VA.
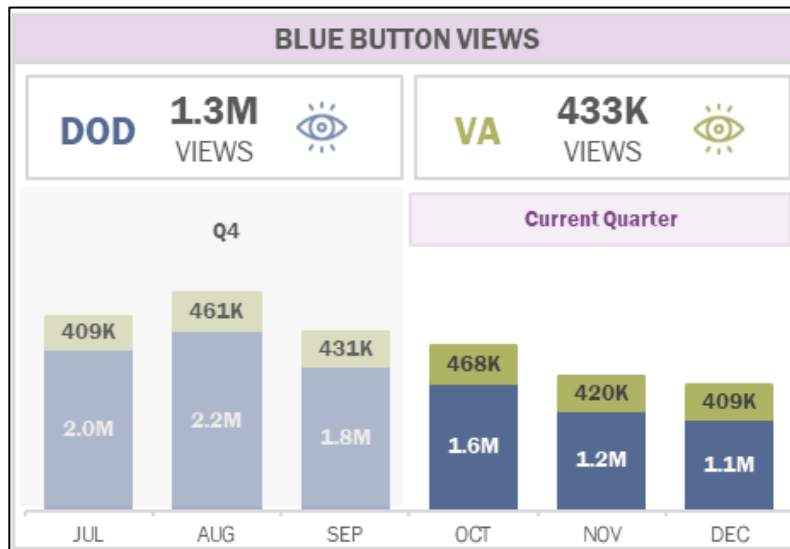
Patient Engagement

Value Statement: Blue Button serves as the foundation for broader patient engagement activities within the Departments, enabling patients to have easy access to their own health information in a usable format. The FEHRM monitors several metrics associated with Blue Button that show patient engagement with their integrated and consolidated health records from DOD and VA legacy systems' patient portals over time.
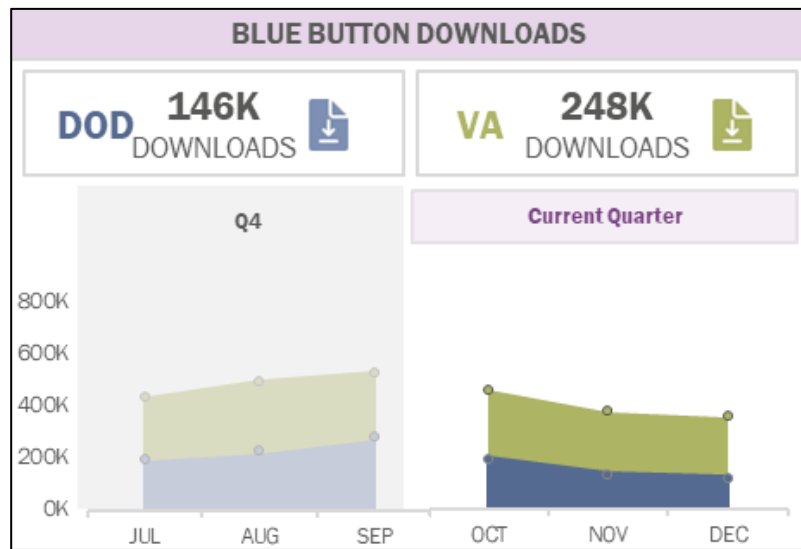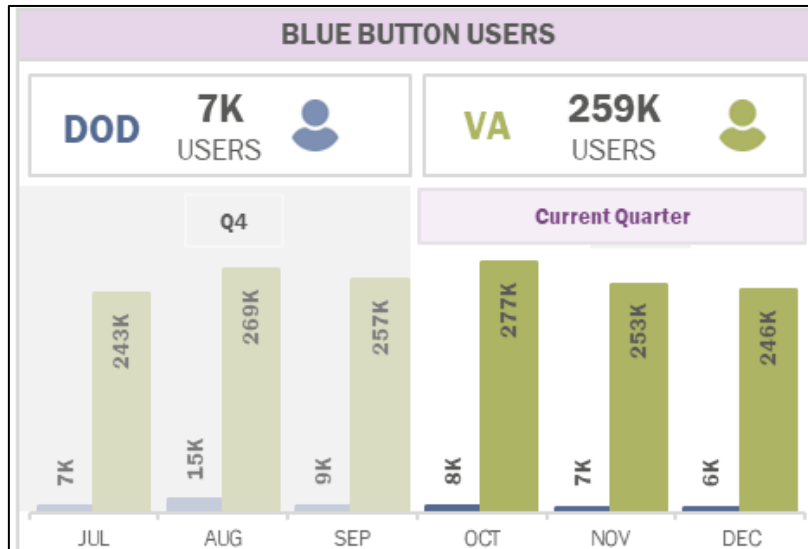

Blue Button Downloads

Definition
Total number of data downloads (e.g., PDF, text) generated by end users per month.

BLUE BUTTON VIEWS

DOD 1.3M VIEWS

VA 433K VIEWS

Q4

Current Quarter

Month	DOD	VA
JUL	2.0M	409K
AUG	2.2M	461K
SEP	1.8M	431K
OCT	1.6M	468K
NOV	1.2M	420K
DEC	1.1M	409K

Blue Button Views
Definition
Average number of views generated by end users per month.

BLUE BUTTON USERS

DOD 7K USERS

VA 259K USERS

Q4 | Current Quarter

	JUL	AUG	SEP	OCT	NOV	DEC
DOD	7K	15K	9K	8K	7K	6K
VA	243K	269K	257K	277K	253K	246K

Monthly Unique Blue Button Users
Definition
Average number of Blue Button users in a month.

FEDERAL ELECTRONIC HEALTH RECORD MODERNIZATION

Federal Partner Onboarding

Value Statement: The FEHRM collaborates with federal partners by providing insight, assisting with requirements and overall support of their interest in joining the federal EHR enterprise.

FEDERAL PARTNER ONBOARDING

USCG   NOAA   NSA   CBP   AFRH

Initial Discussions   Decision to Proceed
Advanced Discussions   Deployment Started
Requirements Definition   Deployment Complete
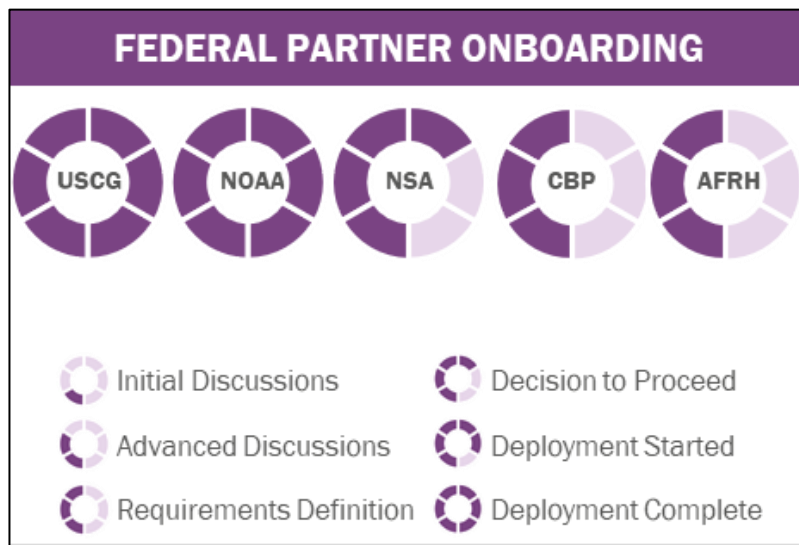
Federal Partner Onboarding

Definition

Progress of collaborations with new federal partners who are interested in joining the federal EHR enterprise.