FEDERAL ELECTRONIC HEALTH RECORD MODERNIZATION

FEHRM

Interoperability Progress Quarterly Report

SECOND QUARTER, FISCAL YEAR 2023

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Modernization (FEHRM) Office

FEHRM Director's Message

From my perspective as Federal Electronic Health Record Modernization (FEHRM) Director, one role the FEHRM has of tremendous importance is focusing on standardization and convergence. As you will see in this report, the FEHRM focuses on convergence by determining ways to converge electronic health record (EHR) workflows and configurations to streamline the patient and provider experience. The goal is to ensure providers have a common user experience defined by evidence-based best practices and patients have a consistent care experience regardless of where they get care. Without our efforts, the Departments would diverge and have different EHRs that are not interoperable. This hurts health care.
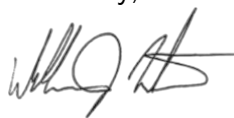
We were tasked by Congress to be interoperable across the Departments and the private-sector community. Interoperability means being able to meaningfully use and share data to benefit Service members, Veterans and other beneficiaries. The federal EHR, along with the joint health information exchange (HIE), significantly increases interoperability across Department of Defense (DOD), Department of Veterans Affairs (VA), United States Coast Guard (USCG) and other federal partners as well as participating provider organizations to enhance patient care and provider effectiveness. The separate, legacy EHR systems are outdated and unable to create a seamless care experience as provided by the federal EHR as they are not interoperable. Throughout this report, the FEHRM focuses on interoperability at multiple levels:

- Interoperability within VA (130 VistA EHRs to a single EHR).
- Interoperability across DOD, VA, USCG and other federal partners, including operational and functional interoperability (data and processes).
- Interoperability with participating provider organizations using the joint HIE and Joint Longitudinal Viewer (JLV).
- National interoperability.

This quarter we focused on different lines of interoperability efforts, from advancing the interoperability of exposure information to advancing national and international interoperability standards to identifying and mitigating interoperability shortfalls at joint sharing sites (JSS) that are deploying the federal EHR asynchronously. The FEHRM's steadfast focus is on our beneficiaries—our Service members, Veterans and their families. They drive these efforts, which enable a continuum of care that ultimately leads to better health outcomes and patient satisfaction.

This work is challenging, but our collaborative workforce is getting it done. We must have the courage and fortitude to persevere because it is the right thing to do for our beneficiaries.

Sincerely,

William J. Tinston,
Director, FEHRM

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Introduction

Purpose of this Report

- The Federal Electronic Health Record Modernization (FEHRM) Interoperability Progress Quarterly Report responds to House Report 117-388, page 261, accompanying H.R. 8236, the Department of Defense Appropriations Bill, 2023.

FEHRM Office Overview

- During the second quarter of fiscal year 2023 (Q2 FY2023), the FEHRM prioritized a strategy of operationalization and convergence in its mission to implement a single, common federal 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 to contain the federal EHR and supporting systems.

    - Governing and overseeing the joint 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 JSS, sites where resources are shared between DOD and VA.

Federal EHR 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 (FCCB) and is essential to operating the federal EHR, providing DOD, VA and USCG functional oversight of all configuration decisions impacting the production baseline.

In Q2 FY2023, the JSaAB approved 280 items; No daily go-live items surfaced during the DOD National Capital Region go-live. The FEHRM coordinates an e-JSaAB process for urgent and emergent issue resolution during off-hours, and successfully used it four times during Q2 FY2023.

During the reporting period, the JSaAB continued to optimize quarterly updates to approval authority levels to allow for issue resolution and decision making at the lowest level with DOD and VA. This process allows users, sites and government configuration experts and teams to approve JSaAB-level activities at a lower level, resulting in a more rapid turn-around and execution of end-user needs. The JSaAB approved and reviewed 25 awareness items and 49 catalog reduction requests.

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. During Q3 FY2022, FDG functional champions approved DOD/VA Federal Oncology Working Group (FOWG) to address joint oncology workflows and therapeutic treatment regimens.

The FEHRM initiated the FOWG with early success in converging high-level oncology regimens while maintaining flexibility for unique protocols (e.g., research) across both Departments. The FEHRM now leads the creation and chartering of another three federal working groups: 1) Federal Rules and Alerts, which manages and strategically reviews rules and alerts for clinical-decision support notifications in the federal EHR; 2) Federal Research, which manages and reviews research-related applications and order requests; and 3) Federal FirstNet, which optimizes and improves the emergency medicine and urgent care application. The FEHRM also chartered the Federal Inpatient Workgroup in Q2 FY2023 to jointly review, endorse and standardize positions across DOD and VA.

Joint Functional Requirements

During Q2 FY2023, the Federal New Requirements (FNR) team continued to expand and refine joint functional requirements processes. Process improvements are underway to create a more streamlined method of conducting FDG reviews, where the FDG is the governing body responsible for determining whether new business needs requests are completed in a joint and singular method across the federal EHR. These presentations are the first step in facilitating collaborative discussions on the potential of joint projects in a transparent manner and in an enterprise-wide environment. A joint sharing site is also under development in the FEHRM's SharePoint environment where all departmental designees can track captured joint requirements.

In a collaboration, facilitated by the FEHRM's FNR team, the VHA/DOD Separation Health Assessment (SHA) Working Group developed content for a new SHA form with joint requirement inputs from clinicians, specialists, benefits examiners and other SMEs. These activities are the foundation for the Departments transition from the use of paper-based scanned forms to an electronic dataflow and workflow. The outcome will result in improved clinical documentation of Service members' health statuses at the time of separation and improving the VA claims process for separating Service members who apply for VA disability compensation through the Benefits Delivery at Discharge program.

Federal Configuration Control Board

The FEHRM expanded engagement with the DOD Healthcare Management System Modernization (DHMSM) Configuration Management (CM) team by attending all FCCB meetings and scheduling additional synchronization meetings with DHMSM and EHRM-IO representatives to refine understanding of processes. The FERHM delivered a list of recommended process improvement initiatives and successfully encouraged immediate implementation of some recommendations. The remaining recommendations will be discussed at an ongoing Process Improvement meeting driving continual process improvement to the FCCB to optimize effectiveness, reduce risk and improve transparency with stakeholders.

The charter for the previous Joint Configuration Control Board was reviewed and adapted for transition to the FCCB. The FERHM worked closely with the DHMSM CM team to ensure accuracy of the terms and processes, and to update areas of responsibility including leadership by the FEHRM and shared responsibilities of DHMSM and EHRM-IO stakeholders.

One Interface Team

The federal EHR is leveraged by the Departments, but it does not have a single point of enterprise-level oversight to manage all interfaces holistically and oversee their maturity. The absence of a single interface team introduces scenarios for multiple changes performed by multiple teams to a shared component, despite other downstream controls to document changes to the baseline.

In Q2 FY2023, the FEHRM continued to discuss the scope of "interfaces" after conducting discovery and assessment of the current state of the federal EHR and its enclave. The FEHRM met with DHMSM and EHRM-IO Program Management Offices (PMOs) in February and March to receive input and feedback on the Single Interface Team and the interface catalog, including working sessions with Oracle Cerner to receive their feedback. The FEHRM continued to study the baseline requirements at enterprise level and requirements for each specific site that includes both enterprise and localized interfaces. In Q3 FY2023 and beyond, the FEHRM will continue to develop its strategy and roadmap for the Single Interface Team and continue to investigate a potential common mental model (e.g., the CAMEO Architecture Modeling Tool) to integrate both DOD and VA models (including interfaces, architectural diagrams and more).

Joint Enclave Data Management

During the Q2 FY2023 reporting period, several ongoing projects addressed different focus areas including Oracle Cerner code sets, terminology and data and analytics governances.

Executive Data Management Board

In Q2 FY2023, the Executive Data Management Board (EDMB), which functions as the formal Data Management and Governance of FEHRM Data Assets, served as the authorizing and prioritizing function for joint data management activities impacting the Federal Enclave. Under the executive body, data and analytics is governed by the Data Governance Board (DGB) and Analytics Governance Board (AGB), respectively. In Q2 FY2023, the FEHRM established and chartered committees under the purview of the DGB and AGB. A few of the committees from the AGB transitioned to the DGB to better align with scope.

Further, the FEHRM established integrated processes and workflows between governance boards with a focus on efficiency, effectiveness and traceability. In support of governance integration, workflows and processes were developed into the FEHRM management solution.

Data Governance

Under the EDMB, data is governed by the DGB with stakeholder representation from constituent bodies. In Q2 FY2023, the FEHRM established and chartered committees under the purview of the DGB to ensure full support of data standards, quality and sharing.

Analytics Governance

Under the EDMB, analytics is governed by the AGB. In Q2 FY2023, the FEHRM established six committees in support of analytic/reporting standards and data warehouse access controls.

Federated Interagency Terminology Service

In Q2 FY2023, the Federated Interagency Terminology Service (FITS), now reporting up to the FEHRM DGB, engaged with the vendor and Departments to jointly review and manage critical terminology projects. Mappings for COVID-19 Lab Tests and Specimen Source are in progress. The FEHRM terminologists also continue to monitor and normalize JLV, Clinical Data Repository/Health Data Repository legacy and federal EHR clinical domains including medication status, allergens, medications, laboratory results and document types.

FEHRM Revenue Cycle/Business Processes

During Q2 FY2023, the FERHM/DHA/VHA Workgroup initiated the development of an Interim-State Enterprise Joint Process Map (ISEJPM) that will address inter-departmental DOD to VA referrals executed at VA-operated clinics embedded at Military Medical Treatment Facilities (MTFs). Due to the physical location of the VA clinic inside of an MTF, the standard referral and billing processes via the DOD Managed Care Support Contractor cannot be utilized. This ISEJPM is applicable to certain specialty clinics in joint sharing between Naval Hospital Beaufort and Ralph H. Johnson VA Health Care System in Charleston VA Medical Center (VAMC) and to scenarios where DOD beneficiaries are referred to be seen at a VA clinic physically located within an MTF.

The FEHRM/DHA/VHA workgroup initiated a charge build workgroup to review and ensure codes and prices for both DHA and VHA. As the DHA and VHA share the same system, this is to ensure no duplication of codes along with a streamlined code description.

DHA Health Informatics (DHA HI) End User Engagement completed the development of the VA to DOD referral management training artifacts developed by the FEHRM/DHA/VHA Workgroup to support users in the Q2 Revenue Cycle Expansion (RevX) deployment wave and beyond. The workgroup closely collaborating with DHA and VHA Business Functional Champions, DHA Unified Business Office, DOD/VA Sharing Office, VA/DOD Health Affairs Medical Sharing Office, VHA Office of Integrated Veteran Care and VHA Office of Finance and Revenue to identify additional gaps in revenue cycle requirements as they evolve.

The FEHRM concluded a Direct Messaging (DM) Pilot with Jacksonville and Hampton VAMC. The overall pilot was a success, and the FEHRM followed up in Q2 FY2023 to ensure and aid with adoption of the DM processes. The DM Pilot proved a model for health data sharing between JSS during asynchronous deployment, between VA and DOD and with community partners. Health data sharing by Referral Management and Office of Community Care teams via DM is a more efficient workflow as it eliminates manual data entry, minimizes opportunities for human error and delivers safer patient care. This capability can be used across the Departments, and DOD and VA have begun coordinating with sites to evaluate need and use cases for establishing DM processes.

Identity, Credential and Access Management

During this reporting period, the FEHRM hosted three sessions to discuss the impacts of Identity, Credential and Access Management (ICAM) initiatives, such as the federal unique identifier, with senior leaders from DOD, VA, Department of Homeland Security (DHS) and the vendor partners. VA provided a complexity analysis in response to their additional requirements beyond the original Joint Executive Committee tasking from July 2022. VA had not reviewed the analysis with DOD, the FEHRM or other key technical stakeholders, such as the Defense Manpower Data Center. The unique identification is based on a subset of the Federal Agency Smart Credential Number, derived from the National Institute of Standards and Technology (NIST) 800-73-4 standard. This recommended approach provides a shared unique identifier for DOD, VA, DHS and other future federal partners' users.

In Q2 FY2023, the FEHRM collaborated with HealtheIntent Solutions and vendor partners to facilitate adding the Azure Active Directory identity provider to the DHA Medical Community of Interest. This is a step toward adding the DHS' multi-factor authentication system as an access point to the HealtheIntent platform.

Implementation Support Joint Sharing Sites

In Q2 FY2023, the FEHRM engaged in the planning, execution and analysis of activities to support the unique health informatics and operational needs of two identified JSS impacted by DOD Wave WALTER REED/BELVOIR, which transitioned to the federal EHR in March 2023. The FEHRM identified three critical areas (operational, clinical and business) that would require further dialogues with these sites and actively worked with interagency partners (DHMSM PMO and EHRM-IO) and local JSS stakeholders to identify required mitigation steps and put interim solutions in place until both Departments complete their EHR modernization efforts.

More specifically, the FEHRM, alongside its DHA (clinical and business) and VHA Office of Health Informatics partners, evaluated the nature of the shared clinical services at two JSS: 1) Walter Reed National Military Medical Center, a location with embedded VA social workers who manage inpatient transfers to appropriate VA medical facilities; and 2) Fort Belvoir Community Hospital with its sharing partner, the embedded Ft Belvoir VA Community-Based Outpatient Clinic, in coordination with SMEs in the areas of interest to identify potential risks due to the asynchronous deployment schedule.

The agenda for the discussion was driven by information collected from both DOD and VA teams at these facilities through the established risk analysis process, starting with a Scope of Services questionnaire. In this questionnaire, pertinent information from both organizational perspectives is captured. The responses received helped the FEHRM in validating its current understanding of the clinical sharing relationship that exists between the sharing partners at both locations and to begin mapping out mitigation steps to address

potential risks. Additionally, the data from the questionnaire helped the FEHRM determine the number of VA clinical and administrative staff who currently access 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 identified risks and developed a mitigation strategy in coordination with DHA HI and the Joint Resource Services Assessment Office through active engagement of these JSS and DOD/VA EHRM PMOs.

Furthermore, the FEHRM, in collaboration with the Enterprise Patient Care Location (PCL) Working Group, composed of PCL SMEs from both Departments' EHRM PMOs, led the effort in collecting data points to advance a proposed PCL determination for the VA space impacted by the DOD deployment. Unanimous approval of the voting members was received on the recommended PCL build for the VA location within the DOD facility. The EHRM PMOs continue to have dialogue with the Enterprise PCL Working Group members regarding the need to establish an approach to reassess and fix multiple JSS impacted by previous DOD PCL decisions.

Following examination of the most current projected VA EHRM-IO deployment schedule, the FEHRM had identified that the 88th Medical Group, Wright-Patterson and Dayton VAMC, would be the first JSS to transition from the interim to end state on September 16, 2023. In the end state, both locations will be using the common federal EHR. In anticipation of this transition, the FEHRM brought together both Departments' deployment teams that manage deployment activities at these two locations to discuss mitigation risks to be assessed and addressed, as appropriate, ahead of the end-state transition.

Initially, the FEHRM's immediate concern was regarding a projected three-month gap for these two sharing partners to transition from the interim state and end state. This concern was based on the absence of a solid plan to address the identified interoperability shortfalls prior to these JSS reaching end state: 1) user roles and access; 2) training/user adoption; 3) patient care location; 4) data migration/cut-over plan; 5) trouble ticket management; and 6) policy differences. The need for such a plan still exists, and the plan must be used to assess potential risks for every JSS targeted to transition to end state.

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

The FEHRM led, in collaboration with DHMSM PMO and EHRM-IO, the Captain James A. Lovelle Federal Health Care Center (Lovell FHCC) Federal EHR Implementation Project through the completion of several pre-deployment activities and into deployment phase events. Most notably, the multi-agency implementation team completed the Lovell FHCC Enterprise Requirements Adjudication (ERA) Process in Q2 FY2023. In total, 69 ERA topics were identified for adjudication, and a total of 341 unique SMEs were identified by the Lovell FHCC Federal EHR Implementation Team and PMOs to participate in 67 total ERA

discussion sessions. Through the FEHRM-facilitated process, all the topics received a recommended course of action from the Departments' key stakeholders. The FEHRM prepared a final ERA summary report that was signed by the Lovell FHCC Implementation Managers from the FEHRM, DHMSM PMO and EHRM-IO and distributed it to the project stakeholders.

The FEHRM, working with DHMSM PMO and EHRM-IO, coordinated the completion of multiple pre-deployment assessments, to include the EHRM-IO Current State Review, the DHMSM PMO Current State Assessment and the DHMSM Pre-Deployment Questionnaire. Completion of these pre-deployment activities and their outputs led to an additional significant milestone, the receipt and distribution of the primary vendor's Implementation Plan Executive Summary for Lovell FHCC, which provided a detailed overview of the deployment activities for project stakeholders, including site leadership.

The implementation officially transitioned into the deployment phase with the FEHRM-coordinated Command Executive Brief (CEB), held with the site to kick off the Lovell FHCC federal EHR deployment. The Lovell FHCC Federal EHR Implementation Team also initiated the User Role Assignment Process and the Communications Kickoff in the weeks following the CEB.

Additionally, in Q2 FY2023, the FEHRM established 11 targeted sub-working groups to bring together key stakeholders from various departments and organizations to decide upon and close on any items that require joint decisions as it relates to execution and implementation of the federal EHR at Lovell FHCC. With the support of the scheduling sub-working group, the FEHRM led the effort to establish a draft integrated master schedule (IMS) for the project. The FEHRM is managing and maintaining the Lovell FHCC IMS with inputs contributed by DHMSM PMO and EHRM-IO, to include a process for update cadence and content adjudication. The FEHRM is also overseeing the management and tracking of risks, issues and opportunities related to the deployment. Led by the FEHRM, the Lovell FHCC Risk Working Group has an established process for risk management and is coordinating with other working group members to identify, track and mitigate risks.

The FEHRM continues to lead project planning and execution activities for the interagency Lovell FHCC Federal EHR Implementation Team, including guiding weekly leadership and working-level meetings, outlining roles and responsibilities, and coordinating other activities.

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

As defined in the Program Executive Office, Defense Health Management Systems (PEO DHMS) Transition Agreement dated December 5, 2022, the FEHRM assumes responsibility for the joint HIE, JLV and Lovell FHCC legacy system sustainment. The joint HIE, JLV and

Lovell FHCC capabilities funding requirements remain tied to the Enterprise Intelligence & Data Solutions Program Element within PEO DHMS.

JSS FHCC Sustainment is a component of the overall JSS-FHCC support tenant and is responsible for the coordination and management of the Lovell FHCC Federal Health Legacy Application, Interoperability Solutions, which includes the Enterprise Service Bus-Orders Portability (ESB-ORP), Medical Single Sign-On-Context Management (MSSO-CM) and associated Test and Evaluation and Cybersecurity activities in coordination with Lovell FHCC, DOD, VA and others. Below includes a description of each solution and key accomplishments for Q2 FY2023.

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, including authorized government, military and contractor personnel, to interoperate seamlessly and securely among clinical applications, such as AHLTA, Composite Health Care System (CHCS), 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 by 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 G4 Appliance System Integration Testing, the coordination of the Assured Compliance Assessment Solution scans with Cyber Team and the installation of the January and February Context Management Information Assurance Vulnerability Alert patch in DEV.com, INT.com and Production as well as the AHLTA 3.3.9 CF 9.0 upgrade in INT.mil and DEV.com.

Enterprise Service Bus/Orders Portability

ESB/ORP capabilities enable DOD and VHA clinicians to place orders and have those orders actionable and displayed within CHCS, AHLTA, VistA or CPRS.

The FHCC Orders Portability interface provides Orders Portability enabling the DOD legacy systems to send and receive orders, status updates and results from the VA systems via an ESB for Laboratory, Radiology and Consults.

Key ESB-ORP accomplishments include the completion of joint testing and deployment into the production environment for a myriad of functional enhancements. The enhancements include:

- Adding Outpatient Appointing to Retry and End-of-Day reports to allow the site to address outpatient appointment issues when appointments fail to cross and keep the patient's appointments in both systems.

- Having Order sets that prompt a provider to order additional lab orders based on the patient's age or other conditions rather than leave it up to the provider or person placing the orders to make that decision. This would also keep the patient from having to return to the facility for another sample.

- Removing Order free text to make it much easier to read the patient's results, which benefits providers and patients.

- Offering Terminology Manager User Interface Search that benefits providers and users when doing Order Portability maintenance, increasing productivity.

- Using VistA Scheduling to keep the two systems in sync and clear up pending appointments on the DOD side.

FEHRM Lessons Learned Repository Management

Over the past two years, the FEHRM established a Lessons Learned Library and a process to collect, share, analyze and apply lessons learned related to the deployment and operation of the federal EHR. The repository contains 189 lessons learned associated with the FEHRM Risk, Issue, Opportunity Repository, JSS Integration, the Enterprise Operations Center (EOC) and the Departments.

The five-most reported enterprise-wide lessons this quarter are in these categories:

1. Go-Live Training
2. Go-Live Communication
3. User Provisioning/Credentialing
4. Stakeholder Coordination
5. Workflows – Process Improvements

Lessons learned pertaining to the above categories were shared with departmental lessons learned partners, SMEs, Solutions Owners and support staff during the FEHRM's Quarterly Lessons Learned Snapshot on March 2, 2023. The latest analysis and stakeholder feedback is being integrated into management processes.

The DHMSM PMO implemented a lesson and achieved success completing training for Clinically Driven Revenue Cycle (CDRC), which requires continued emphasis to improve user adoption. Further reinforcement during Wave WALTER REED/BELVOIR pre-go-live forums on CDRC training resulted in training completion rates above 60% over a week before go-live, which is the highest prior to any go-live. It is important to establish clear communication channels between Departments. Potential additional work items should be proposed in RevX to indicate when another Department needs resolution.

Federal EHR Operations

Enterprise Operations Center

The EOC is critical to operationalize the FEHRM. The EOC 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 Q2 FY2023, in addition to monitoring planned activities that could impact FEHRM partners, the EOC monitored and reported 26 unplanned incidents impacting the federal EHR or partners. These reports included root cause analyses, when known, and corrective actions taken for unplanned incidents. The EOC added value to the federal EHR through the following activities: 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.

Continuity of Business Operations

Currently, providers rely on the federal EHR to document and support the care of more than 6.6 million DOD, VA and USCG patients—a number that grows as the federal EHR deploys to more sites. Given the criticality of this mission, the FEHRM works with EHRM-IO, PEO DHMS and commercial partners to ensure patients and providers can rely on the federal EHR in the unlikely event the primary data center suffers a catastrophic disaster through the design and implementation of comprehensive Continuity of Operations Program (COOP) and Disaster Recovery solutions. In Q2 FY2023, the FEHRM continued tracking progress of expanding COOP capabilities through the addition of replicated High Availability, Commercial Application Systems in the COOP domain. In Q2 FY2023, the FEHRM conducted the scheduled COOP Test Plan and Tabletop Exercise; this is an annual requirement within the COOP Program.

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 Q2 FY2023, those activities included Oracle Cloud Infrastructure (OCI), Federal EHR Logon Issues, and Joint Operational Medicine Information Systems Theater EHR In-A-Box.

In Q2 FY2023, the FEHRM continued working with stakeholders to track Federal Enclave measures included in the DOD-VA Interoperability Modernization Strategy. The FEHRM provides leadership and regular technical reviews focused on the Federal Enclave and reviewed shared metrics of service availability and performance trends. The FEHRM continues efforts to enhance the delivery and user experience of care by leading data-driven initiatives in collaboration with Oracle-Cerner and the Leidos Partnership for Defense Health. These initiatives have decreased system degradation and improved enclave stability; this includes an initiative to reduce user latency. The FEHRM reviews key service availability, performance metrics and trends, and delivers a comprehensive monthly EHR Health Report to all relevant Technical Directors and Systems Engineers and their teams.

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 Q2 FY2023, the FEHRM continued the transformation of the Joint Release Working Group into the Federal Release Working Group (FRWG). During this phase of the transformation, the FEHRM began drafting a charter based on the group's current state and feedback from the PMO Release Management Leads. The FEHRM continued to deliver meeting documentation records for each FRWG meeting to more than 200 stakeholders across the enterprise. The FEHRM improved the effort's efficiency by consolidating vendor planning sessions with government sessions to eliminate redundancy and increase operational effectiveness.

During Q2 FY2023, the FEHRM leveraged its success developing the FEHRM Domain Management Execution Guide by supporting the onboarding of a new DHMSM Domain Management Lead. The FEHRM also leveraged its visibility across the multiple workstreams within the enterprise to support the JSaAB by disseminating and updating domain availability schedules. This effort enables Solution Owners and Experts to work within the correct domain as the path to production and reduces the impact of domain availability.

Federal EHR Cybersecurity

Cybersecurity – Cyber Tabletop

Consistent with the direction contained in Executive Order 14028, the FEHRM is undertaking a series of focused cyber tabletop (CTT) exercises to evolve the cybersecurity posture of the federal EHR to include prevention, detection, escalation and response coordination. The FEHRM is planning a series of CTTs for FY2023 with the objectives of strengthening Federal Enclave security, joint communications and information sharing.

Cybersecurity – Joint Incident Management Framework

Foundational to the cybersecurity posture of the federal EHR is documenting and optimizing a framework for jointly responding to cybersecurity incidents. In Q2 FY2023, the FEHRM finalized the standard operating procedures document for joint cyber incident response, escalation, roles and responsibilities, management and reporting. For FY2023, efforts continue with engaging stakeholders to ensure consistent incident management and reporting procedures are in place across the Federal Enclave for joint communications, information sharing and situational awareness.

Cybersecurity – Joint Memos of Understanding and Agreement

The FEHRM is facilitating working sessions to review, update and consolidate existing joint Memorandums of Understanding (MOUs)/Memorandums of Agreement (MOAs) related to the Federal Enclave. For Q2 FY2023, the FEHRM engaged with SMEs from DOD and VA to ensure MOU/MOA content is complete, accurate and up to date. This activity is also required for NIST/Federal Information Security Modernization Act compliance.

Cybersecurity – Joint Security Operations Center

The FEHRM initiated the creation of a Joint Security Operations Center (JSOC) that shares the responsibility of cyber-incident monitoring and reporting, as well as information sharing across various organizational components impacted by the Federal Enclave. For FY2023, working with stakeholders, the JSOC will design 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.

Cybersecurity Risk Mitigation

Consistent with its charter to orchestrate the Joint Cybersecurity Program, the FEHRM continues to actively address cybersecurity risks to the Federal Enclave, as well as include the guidance contained in the White House Executive Order on Improving the Nation's Cybersecurity (May 12, 2021), to improve investigative and remediation capabilities. The FEHRM continues to monitor and analyze the evolution from the current defense in depth to

a zero-trust architecture. This activity includes evaluating methods to consolidate incident response and management information to ensure a coordinated effort to report, remedy and mitigate risks across the Federal Enclave.

In Q2 FY2023, the FEHRM drafted a Coordinated Interagency Data Sharing White Paper and Strategy to provide FEHRM Project Leaders insight into the current and planned cyber activities and provide the rationale and guidance for composing a joint MOU around data sharing. In addition, the FEHRM is working with stakeholders to plan and conduct a red team exercise in FY2023 to ensure vulnerabilities are identified, mitigated and remediated, and that management, technical and operational security control implementations are improved.

Interoperability Modernization

Joint Health Information Exchange

DOD and VA deployed the joint HIE in April 2020, enhancing the ability of DOD, VA and USCG staff to bi-directionally exchange Service member, Veteran, and other beneficiary health care data securely with participating provider organizations for purposes of treatment. The joint HIE connects to more than 65% of private-sector hospitals in the United States, and in Q2 FY2023 delivered a monthly average of 14.8 million documents to participating provider organizations and retrieved a monthly average of 117.3 million documents from participating provider organizations. Future efforts include continuing expansion with provider organizations and external networks (e.g., Carequality) and further implementing a geographical map representation of all joint HIE partners/connections (i.e., Joint HIE Interoperability Map).

Immunization Exchange with State Immunization Information Systems

In July 2021, VA deployed their implementation of immunization exchange in Washington State, followed by Idaho, Montana, and Ohio. To streamline and replace multiple point-to-point connections, VA and DOD decided to utilize immunization exchange via the Centers for Disease Control and Prevention (CDC) Immunization (IZ) Gateway. Immunization exchange via the CDC IZ Gateway allows for the DOD and VA to report and query for immunization data in real time, to and from state Immunization Information Systems (IIS). Utilizing the CDC IZ Gateway allows DOD and VA to eliminate the need for individual agreements with each state IIS by leveraging the Provider Jurisdiction Agreement and legal/policy coordination across state IIS, with consolidated implementation guide and endpoint vs point-to-point connections to enable easier integration with each state IIS. This capability also allows DOD and VA to comply with state laws that require immunization providers to report to the state IIS.

In November 2022, VA deployed their initial query-only implementation of immunization exchange via the CDC IZ Gateway with Washington State. This was followed by VA's deployment on March 15 for Washington that allowed full functionality (i.e., querying/reporting) to be exercised by the VA. On March 29, DOD deployed its initial implementation of the immunization exchange in Washington State, allowing MHS GENESIS users at 100% of Washington facilities—including USCG and United States Military Entrance Processing Command (MEPCOM)—to query and report immunizations to Washington State.

Clinicians in Washington can now request an immunization record and have improved access to immunization history for DOD and VA beneficiaries when care is obtained outside of the clinic/MTF. DOD and VA are planning to connect additional states to state registries as more states join the CDC IZ Gateway and VA's implementation of EHR expands.

HealtheIntent

In Q2 FY2023, the FEHRM completed the organizational build to extend the HealtheRegistries solution to DOD nurses across the Military Health System, expanding the user base.

The FEHRM presented a Briefing of Record to DOD and VA in March regarding the sustainment of HealtheRegistries and continued to address immediate issues with solution features. The RES application programming interface time threshold will be increased incrementally to maximize analytics and reporting of RES performance.

A Preliminary Design Review is in process to review the potential transition of HealtheIntent into OCI. This will be the first iterative review prior to a critical design review detailing a roadmap of HealtheIntent Lift into OCI.

Longitudinal Natural Language Processing

Longitudinal Natural Language Processing (LNLP) is a capability that applies natural language processing and artificial intelligence (AI) to unstructured notes to make the unstructured data searchable and codified in a way to better understand medical concepts and context. The FEHRM's LNLP project wrapped up its pilot contract in Q2 FY2023. LNLP received a three-year Authority to Operate and was subsequently successfully deployed to production. The follow-on LNLP contract was awarded on March 24. The current LNLP production capability is utilized by accessing an Advanced Search link within the JLV's Community Health Summaries and Documents – VA widget. This link launches a new browser tab that enables granular search of clinical content within health record documents from participating provider organization sources received via the joint HIE. This initial capability is very useful to providers as joint HIE documents often have inadequately named titles or large amounts of unstructured free text. The next major initiative involves working with MEPCOM to incorporate an LNLP capability within JLV that will allow MEPCOM users to

quickly and easily pinpoint disqualifying medical factors within a prospective Service member's EHR.

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 (or PACT Act) of 2022will have direct and implied effects on the federal EHR and the Individual Longitudinal Exposure Record (ILER)—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 exposure information into the federal EHR.

- **Delivery of the Individual Exposure Summary to Clinicians and Veterans.** ILER's principal product is the Individual Exposure Summary (IES), a listing of potential occupational and environmental exposures sustained by an individual Service member. The FEHRM coordinated the delivery of the IES to clinicians via a PDF file in the JLV and remains engaged in the planning phase for delivery of the IES directly to Veterans via a website.

- **National Standards for Exposure Exchange.** At present, the names of military service-related exposures are not standardized. The lack of standardization impairs the exchange of exposure information between IT systems, makes it difficult to implement clinical decision support for specific exposures and research efforts that require aggregating individuals with similar exposures. The FEHRM leads efforts to identify existing health data standards that could be enhanced to enable the standards-based exchange of exposure information. One effort is examining the Health Level Seven (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 effort is analyzing the Systematized Nomenclature of Medicine (SNOMED) to understand how it may be expanded to encode concepts related to exposures. The FEHRM is in the process of submitting a number of exposure terms frequently tracked within ILER, but not represented in SNOMED, for inclusion. The FEHRM will continue to collaborate with the Office of the National Coordinator for Health Information Technology (ONC) and the Departments to advance these efforts for all federal partners involved in exposure-related clinical care and research.

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

A successful interoperability ecosystem enables information sharing across the organization's boundaries to advance the effective delivery of health care for individuals and communities. Sophisticated and advanced policies, standards and technologies must come together for interoperability to realize effective health care delivery.

The FEHRM analyzes standards and fosters the development of and establishes guidelines for the use of data standards that support seamless integration of health data between the federal EHR and legacy and community partner systems. In furtherance of its goals, the FEHRM collaborates with HL7 federal and industry partners and other standards development organizations (SDOs) to advance national HDI.

As part of its National Defense Authorization Act (NDAA) FY2020 mandate, the FEHRM focuses on FHIR, which is a modern HL7 standard that leverages internet technologies to securely exchange health information. FHIR improves granular data retrieval, so that a request returns just the relevant data rather than a full record or document that itself must then be searched. Simultaneously, the FEHRM seeks to improve the interoperability of HL7 Clinical Document Architecture (CDA), which is a widely used XML-based document standard that defines the structure of certain medical records such as discharge summaries and progress notes. Below are the FEHRM interoperability standards initiatives and activities that are anchored to the FEHRM's mission.

- **Strategy Development.** During Q2 FY2023, the Standards Group reprioritized its involvement in SDOs to monitor and report trends to the stakeholders. These changes were aligned with NDAA FY2020, which directs the FEHRM to actively engage with national and international health standards to advance interoperability across the federal and private sectors.

- **Standards Development.** The FEHRM's 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 subject areas were selected by the Standards Group based on their alignment with NDAA and national/stakeholder priorities.

FEHRM- and Department-Led Groups

- **FEHRM Standards Stakeholder Group.** The FEHRM planned, managed and hosted monthly Standards Stakeholder Group meetings to share the national and international standards landscape to the Departments and key stakeholders. The Standards Stakeholder Group meeting is a venue to promote standards that are released by HL7, ISO and IEEE working groups. The FEHRM provided updates on standards and trends in a variety of clinical and health domains such as patient-contributed data, Social Determinants of Health (SDOH) and telehealth.

- **VA Interoperability Leadership (VAIL) Internal and External Federal and Standards Coordination Working Group.** VAIL works to define interoperability principles intended to guide individuals and programs as well as to assist in informing policies through the decision-making process to accelerate interoperability. The FEHRM Standards Group provided monthly updates related to data standards that impact the deployment of EHRs, as well as participated in discussions to support VAIL's principles of interoperability.

Health Level 7

HL7 is an 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 industry needs. During Q2 FY2023, the FEHRM engaged with HL7 through numerous mechanisms and forums, including:

- **HL7 Balloting.** The FEHRM prioritized, reviewed and voted on HL7 ballots that directly impact HDI between DOD and VA. The resulting standards improve HDI, positively impacting health care for Veterans and their families and improving patient outcomes. During Q2 FY2023, HL7 presented 27 ballots. After prioritization based on the FEHRM's strategic initiatives and coordination with DOD and VA, the FEHRM analyzed and voted on four ballots related to Clinical Data Architecture templates for clinical notes, human services directory, retrieval of real-world data for clinical research and HL7 FHIR Release 6.

- **HL7 Government Birds of a Feather.** The Government Birds of a Feather (BOF) meeting is the only forum during HL7 Working Group Meetings that brings together government agencies to discuss standards and exchange ideas. The FEHRM planned and hosted the January 2023 BOF meeting. The event allowed the participants to facilitate, promote and collaborate on interoperability. The meeting featured a presentation from the Centers for Medicare & Medicaid Services (CMS), which included an overview of the Advancing Interoperability and Improving Prior Authorization Processes proposed rule. ONC provided updates regarding the United States Core Data for Interoperability version 4 and a brief review of the 21 new data

elements that were published and the Interoperability Standards Advisory, which is a curated list of standards meant to assist the information technology (IT) community as it implements and updates its systems. VA introduced a new initiative, the SDOH Framework Integrated Project, which has objectives and working groups to identify current SDOH practices across the enterprise, develop an implementation plan to align SDOH data elements with national standards such as the USCDI, and develop FHIR Application programming interfaces. Approximately 85 federal stakeholders from several federal departments/agencies, as well as state agencies, international consultants, insurance associations and industry groups, participated in this event.

- **HL7 Working Groups.** HL7 Working Group meetings allow federal agencies, stakeholders and the HL7 community to work on standards and network with global industry leaders. Attendance allows SMEs to provide perspectives on current trends and initiatives, remain current on standards activities and ballots and influence ballots and policy outcomes through contributions to working sessions.

  The FEHRM's Standards Group attends the HL7 Working Group three times a year to develop, influence and monitor standards specifications for interoperability. HL7 is an opportunity to collaborate with and listen to industry leaders, such as Oracle Cerner, EPIC, Microsoft and many others, to learn about trends and gaps in interoperability. The FEHRM attended the January 2023 HL7 Working Group meeting and discussed, collaborated and advocated on behalf of Service members and Veterans regarding their health data requirements. During Q2 FY2023, the FEHRM engaged with, co-chaired or led the following HL7 workstreams with the areas of focus noted below:

  - **Consolidated CDA (C-CDA) Product Management.** In Q2 FY2023, the FEHRM continued its efforts to advance data standards in the realm of cross-organizational patient data sharing. The FEHRM led design discussions on all data classes in ONC's USCDI version 3. The design sessions included more than 20 industry representatives, government liaisons and ONC. The team resolved 12 new implementer reported issues and developed designs for Health Insurance Information, Health Status Assessments, Laboratory, Medications, Patient Demographics (including Gender Identity) and Procedures. In partnership with HL7 and ONC, the FEHRM hosted weekly calls to review and refine the proposed designs. These designs are included in the C-CDA Companion Guide R3 January 2023 ballot, which the FEHRM expects will be the future required document exchange standard for all joint HIE participating provider organizations.

  - **Da Vinci.** The HL7 Da Vinci Project brings together payers, providers and health care technology vendors, along with HL7, with a common goal of accelerating the adoption of HL7 FHIR as the standard to support and

integrate value-based care data exchange across communities. The FEHRM monitored and/or co-chaired several HL7 working groups—such as the Payer-Provider Information Exchange, Coverage Requirements Discovery, Documentation Templates and Rules and Prior Authorization Support—and provided input on a variety of topics, including CMS Prior Authorization and Health Care Attachments Rules. The rules could significantly impact the federal EHR capability requirements and provider burden.

– **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 Departments' position on gender fields.

– **Gravity Project (SDOH).** The SDOH Information Exchange Learning Forum brings together health care providers, community-based organizations, government, payers, HIE networks, IT platform developers, innovators and other partners to share lessons learned, promising practices and challenges related to exchanging SDOH data. The FEHRM provided input to the SDOH Information Exchange Learning Forum on issues relevant to the DOD and VA community.

  The FEHRM provided input in the development of use cases for the close-loop referral process related to SDOH services. This referral process allows health care professionals to send patient information to a community-based organization to help address a patient's needs that are typically better served outside of clinical workflows.

– **Mobile Health Work Group.** The FEHRM collaborates with the Mobile Health Work Group in its development of a Unique Mobile Health Application Identifier to help establish the provenance of data shared with EHRs and other health IT.

Institute of Electrical and Electronics Engineers

With an active portfolio of nearly 1,300 standards and projects under development, IEEE is a leading developer of industry standards in a broad range of technologies that drive the functionality, capabilities and interoperability of a wide range of products and services, transforming how people live, work and communicate. The FEHRM helped to author the P2933 Clinical Internet of Things Data and Device Interoperability with Trust, Identity,

Privacy, Protection, Safety, Security Standard, which is now undergoing reviews as part of the publication process.

U.S. Department of Health and Human Services

The FEHRM collaborates with HHS agencies to advance health care interoperability. Its support of CMS, ONC and the Workgroup for Electronic Data Interchange (WEDI) are provided below.

Centers for Medicare & Medicaid Services

In 2022, CMS released policies to advance nationwide health information exchange, reduce the administrative burden for providers and incentivize effective use of health IT in 2023 and beyond. CMS is incentivizing the HIE under the Trusted Exchange Framework and Common Agreement (TEFCA). TEFCA is anticipated to be a strong catalyst for the maturation of FHIR and many other standards. During Q2 FY2023, the FEHRM participated in the CMS Interoperability & Standards Collaborative Forums.

Office of the National Coordinator for Health Information Technology

ONC is a leading resource to support the adoption of health IT and promote standards-based HIE. The FEHRM collaborated with ONC stakeholders to further the progress of national and international interoperability standards and the quality of HIE required by the Departments by engaging with the following entities:

- **Federal Health IT Advisory Committee (HITAC) and Annual Report Workgroup.** HITAC submits recommendations on ONC policies, standards, implementation specifications and certification criteria relating to the implementation of a health IT infrastructure, nationally and locally, that advances the electronic access, exchange and use of health information. In Q2 FY2023, the FEHRM participated in the HITAC and Annual Report Workgroup meetings to provide comments and input regarding the Annual Report and shared updates with stakeholders.

- **Federal Health IT Coordinating Council (FHIT CC) and Digital Health Innovation Work Group.** ONC improves federal coordination through the FHIT CC, a voluntary group of nearly 40 federal departments, agencies and offices actively involved in implementing the national health IT agenda. The FHIT CC convenes monthly to influence and discuss FHIR Guidance for federal partners, supports efforts to update the USCDI, shares federal progress made toward the 2020–2025 Federal Health IT Strategic Plan and assists in federal health IT coordination activities related to COVID-19.

- **USCDI and Data Strategy and Standards Harmonization Workgroup.** The USCDI and Data Strategy and Standards Harmonization Workgroup reviewed and made recommendations on the draft USCDI version 3 content and process. The FEHRM

provides input regarding USCDI data classes and elements related to the VA ecosystem and suggests priorities for the USCDI version 4 submission cycle.

- **SDOH Information Exchange Learning Forum.** The SDOH Information Exchange Learning Forum brings together health care providers, community-based organizations, government, payers, HIE networks, IT platform developers, innovators and other partners to share lessons learned, promising practices and challenges related to exchanging SDOH data. The FEHRM provides input to the SDOH Information Exchange Learning Forum on issues relevant to DOD and VA communities.

- **TEFCA Recognized Coordinating Entity (RCE) Informational Calls.** The TEFCA RCE coordinates the development of TEFCA that supports advancing nationwide interoperability of electronic health information.[1] The FEHRM monitors the calls, analyzes documents and provides comments on language that furthers the advancement of the common agreement.

  During the reporting period, the FEHRM analyzed the USCDI version 4. The USCDI is a standardized set of health data classes and constituent data elements for nationwide, interoperable HIE and is one of the criteria used to certify EHRs such as Cerner Millennium. The FEHRM identified potential improvements to the USCDI, including updates to the data elements for Public Health Emergency Preparedness and Response.

Workgroup for Electronic Data Interchange

WEDI is recognized and trusted as a formal advisor to the Secretary of HHS. Its main mission is to advance standards for electronic administrative transactions and promote data privacy and security. WEDI successfully influenced health IT policy and aligned the industry to harmonize administrative and clinical data. WEDI focuses on many areas, including data standards and compliance; interoperability and data sharing; and value-based reimbursement models implementation. The FEHRM joins discussions at numerous WEDI forums and monthly seminars. In January 2023, the FEHRM attended the WEDI panel discussion on Adopting a Zero-Trust Identity Strategy Protect Patient Data.

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[1] TEFCA was developed by ONC under Title IV of the 21st Century Cures Act. The Act calls for the development of a "trusted exchange framework" that includes a national, common agreement among health information networks.

User Engagement and Assessments

Federal EHR Annual Summit

During Q2 FY2023, the FEHRM continued to process feedback and track due-outs and execution of change requests. The second annual Federal EHR Annual Summit brought together clinical staff from DOD, VA and USCG, participating provider organizations; and other leading clinical experts to assess the use of the federal EHR. Participants engaged in valuable discussions on opportunities for enhancing the federal EHR to better serve Service members, Veterans and other beneficiaries. The summit allowed end users to provide valuable feedback to FEHRM, DOD and VA leadership.

More than 700 individuals registered for the two- and half-day event, including congressional staffers and the VA Office of Inspector General. The feedback received produced more than 390 items in the form of questions and comments, as well as 92 actionable items for follow up with DHA and VHA Solution Owners and Experts to determine if change requests are required to enhance the experience of the EHR, or if there are already enhancement requests tickets available, to match/tie the action items to the identified enhancement requests. While 72 of the 92 action items have been closed out, the remaining are being tracked as projects, enhancements and/or configuration requests.

During Q2 FY2023, the FEHRM continued its work with the training and configuration teams of DHA HI/DHMSM and VHA/VA EHRM-IO to mitigate, solve or highlight training items identified during the summit. Further, the FEHRM began utilizing lessons learned to develop the 2023 Federal EHR Annual Summit agenda and scope.

FEHRM Testing and Evaluation Initiatives

The FEHRM test activity focused on two key areas to mitigate risks to the federal EHR. The first was a partnership with MITRE to verify the federal EHR adheres to the interoperability performance standards outlined in NDAA FY2020. The second was an ongoing collaboration with DOD, VA and USCG to establish a multiphase approach for the control of test/pseudo records in the Federal Enclave (Production Environment).

In Q2 FY2023, the FEHRM continued the foundational work required by NDAA FY2020 to assess whether DOD and VA clinicians can access and meaningfully interact with a complete patient health record—regardless of the source of the information (i.e., the federal EHR, DOD and VA legacy EHRs and available private-sector health data sources). The FEHRM worked with MITRE to develop the Federal EHR Interoperability NDAA FY2020 Independent Assessment Execution Procedure. The purpose of this Independent Assessment Execution Procedure is to detail the execution activities required to assess interoperability of the federal EHR as identified by the NDAA Use Cases. This plan defines the scope of the execution and its phases, roles and responsibilities, and a detailed approach to carry out the

assessment and analyze the findings. Execution of this plan will inform the NDAA FY2020 Final Independent Assessment Report to Congress. The goal of this assessment is to provide details related to assessing interoperability to ensure that clinicians can meaningfully interact with a complete patient health record, regardless of where care is being provided. The FEHRM's execution time frame of the NDAA FY2020 is targeted for Q3 FY2023.

The FEHRM's Test and Evaluation efforts surrounding test patients in production continues to implement technical controls for the test/pseudo patients. The Federal Identity Management Test Patient (FIdM TP) Committee administratively tracks and governs the number of test patients in the production environment. DGB is the controlling authority over the FIdM TP Committee.

Clinician and Patient User Satisfaction

During the reporting period, the FEHRM continued to collaborate with DOD and VA patient and clinician satisfaction SMEs and Joint Work Groups (JWG), 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 Q1 FY2023 for both clinician and patient satisfaction surveys and during Q2 worked with the JWG to analyze and report results with Department representatives. The FEHRM started this collaborative effort to equally assess satisfaction across DOD and VA, save government resources and reduce overall costs. Through these efforts, the survey instruments established and used for both clinician and patient satisfaction are nationally recognized as the "KLAS Arch Collaborative for Clinician Satisfaction" and the "Consumer Assessment of Healthcare Providers and Systems Health Information Technology (CAHPS-HIT)" item set for Patient Satisfaction.

The FEHRM collectively selected and successfully incorporated the Joint EHR Patient Satisfaction item sets into the Q3 FY2021 surveys for DOD and VA. Survey deployment to VA sites with the federal EHR was slightly delayed due to integration and deployment of the federal EHR, and receipt of data began during Q2 FY2022. The FEHRM analyzed the longitudinal data for both DOD and VA and reviewed the results with the JWG for the entire FY2022.

DOD and VA executed the Joint EHR Clinician Satisfaction Survey (KLAS) question set in Q4 FY2022. The jointly established questions were deployed across DOD, VA and USCG. The KLAS Arch Collaborative provides benchmark data from other Oracle Cerner clients across the United States and abroad. The data and results will be reviewed by the JWG and analyzed for shared trends between DOD, VA and USCG in the 2022 Annual Report.

In Q2 FY2023, the JWG teams met to discuss results and options for improving and streamlining process for methodologies across both Departments. The FEHRM will also review additional tangential alternatives for Patient Satisfaction measure as the results of Patient Satisfaction were inconclusive. The FEHRM will work with Patient Portal working

groups of both DOD and VA to address use of non-industry standard approaches to measure satisfaction with portal use and design, the patients' gateway to the EHR.

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 IT. 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 collaborates with federal organizations to learn and elevate new ideas in health care interoperability and IT modernization. During Q2 FY2023, the FEHRM:

- Hosted a joint coordination meeting with ONC and CMS to share alignment across the federal government in health IT (February 2023). This meeting consisted of updates on recent and upcoming events; project and program initiatives; new publications; and pending documents for future FEHRM and departmental review and feedback. Numerous collaborative opportunities were identified between the FEHRM, ONC and CMS. The next meeting is April 25, 2023.

- Collaborated with ONC stakeholders through participation in numerous ONC engagements, including meetings, webinars and public comment periods to inform their work supporting the 21st Century Cures Act.

The FEHRM continues its collaboration with professional societies and associations to foster partnerships, support health care data exchange and promote interoperability modernization. In Q2 FY2023, the FEHRM engaged with the Healthcare Information and Management Systems Society through numerous National Capital Area Chapter events.

Federal EHR Partner Onboarding

National Oceanic and Atmospheric Administration

The FEHRM is working with various federal agencies to advance their health care operations through the implementation of an EHR. One such agency is the National Oceanic and Atmospheric Administration (NOAA), a division of the Department of Commerce that focuses on predicting and understanding changes in climate, weather, oceans and coasts. In addition to its mission of sharing knowledge with others, NOAA is finalizing plans to deploy the federal EHR in summer 2023. Similarly, the FEHRM collaborated with the U.S. Customs and Border Protection, which operates a health care clinic at its Advanced Training Center in

West Virginia, to collect functional requirements for its EHR. Lastly, the FEHRM is engaging with the Armed Forces Retirement Home, an independent agency authorized by the United States Code, to understand its EHR requirements and facilitate product demonstrations.

Conclusion

Throughout Q2 FY2023, 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 and USCG beneficiaries. Enabling health information exchange between DOD, VA, USCG and the private sector serves as the foundation for a patient-centric health care experience, seamless care transitions and improved care for Service members, Veterans and their families. To demonstrate the effect on patients and providers as DOD, VA and USCG move forward with their implementation of a seamless EHR system, the FEHRM will monitor and report data sharing between the Departments as part of its broader support of the Departments' commitment to advance HDI through interoperability modernization strategic planning.

Appendix A: HDI Metrics Details

HDI Metrics Details: Throughout Q2 FY2023, 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: (a) Department Integration, (b) Community Partnerships, (c) Patient Engagement and (d) Federal Partner Onboarding. Figure 1 represents a snapshot of the Q2 FY2023 HDI Metrics Dashboard.

Figure 1 – Q2 FY2023 HDI Metrics Dashboard

Q2 FY2023 Highlights: Metric highlights are captured in Table 1 below.

Table 1 – Quarter Highlights

Metrics	Highlights
Blue Button (DOD)	DOD Blue Button Downloads increased significantly in the month of March due to high number of patients downloading their 'legacy health records' in preparation of Wave WALTER REED/BELVOIR federal EHR go-live.
Blue Button (VA)	VA Blue Button Downloads decreased due to a change in the system. Previously, when users viewed their files in the browser, the files automatically downloaded. With the change, the files no longer download automatically; instead, the users must choose to download the files.

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
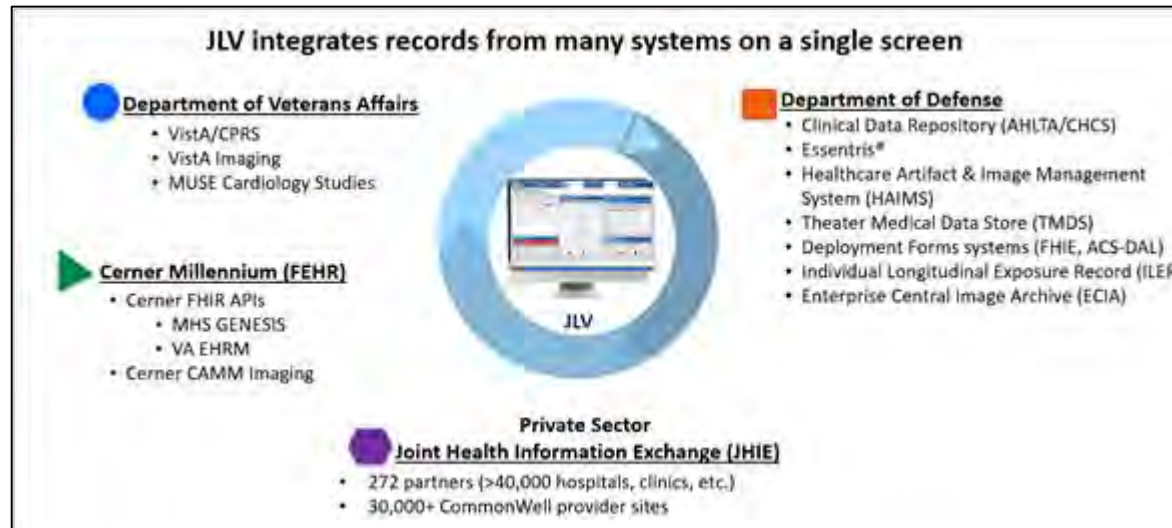
2. **Joint HIE.** The joint HIE is a secure network that shares Veteran and Military Health System beneficiary health care information electronically with participating provider organizations who join the eHealth Exchange[2] and CommonWell.[3] Community partners who join undergo stringent security requirements 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.

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[2] eHealth Exchange: This network of networks connects federal agencies and non-federal health care organizations so medical data can be exchanged nationwide. eHealth Exchange online, October 14, 2022, https://ehealthexchange.org/.

[3] CommonWell: This service 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/.

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 6.8 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 March 31, 2023.
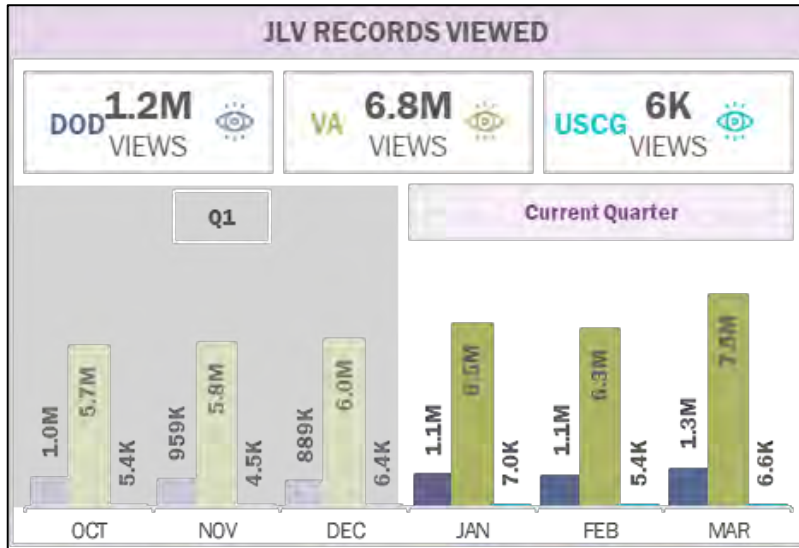
Department Integration

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 **54K** USERS

VA **122K** USERS

USCG **221** USERS
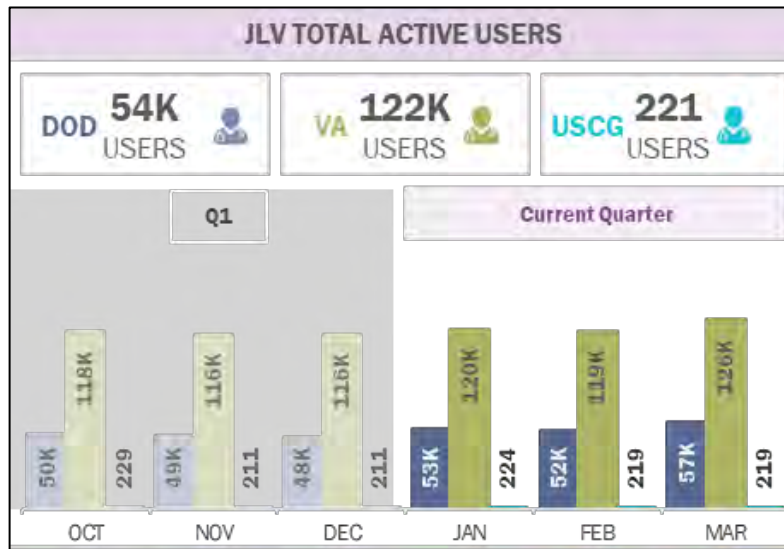
	JLV Total Active Users
Definition	
Active User: A unique user who has logged into JLV in a given month.	

JLV RECORDS VIEWED

DOD 1.2M VIEWS | VA 6.8M VIEWS | USCG 6K VIEWS

Q1 | Current Quarter

| OCT | NOV | DEC | JAN | FEB | MAR |

OCT: 1.0M, 5.7M, 5.4K
NOV: 959K, 5.8M, 4.5K
DEC: 889K, 6.0M, 6.4K
JAN: 1.1M, 6.5M, 7.0K
FEB: 1.1M, 6.3M, 5.4K
MAR: 1.3M, 7.5M, 6.6K

JLV Records Viewed
Definition
Monthly total number of patient records viewed using the JLV for DOD, VA and USCG.

JLV OPERATIONAL AVAILABILITY
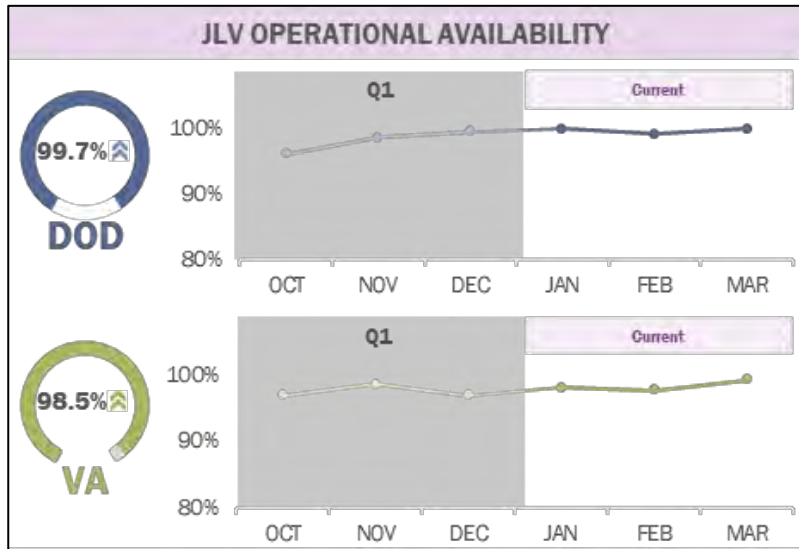
JLV Operational Availability

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 (i.e., users able to conduct patient search and retrieve DOD, VA and federal EHR data in production environments).

VA LEGACY DATA AVAILABILITY TO JLV FOR VA & DOD SYSTEMS
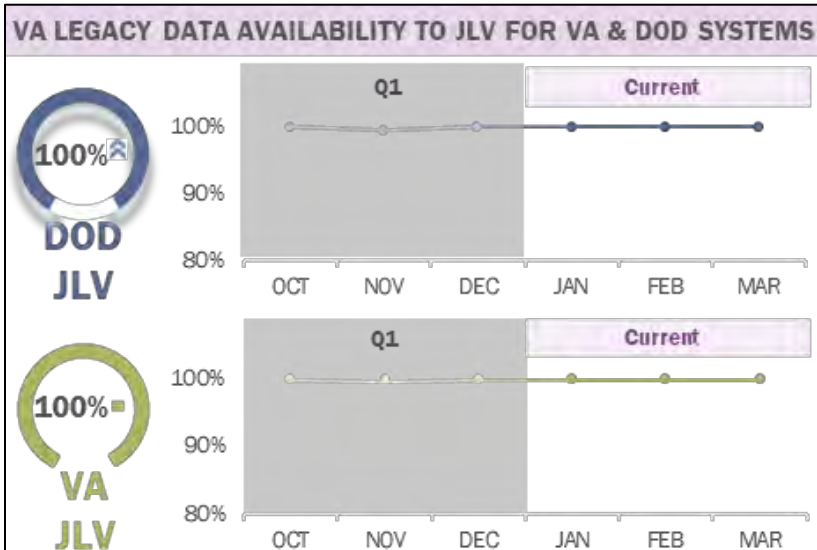
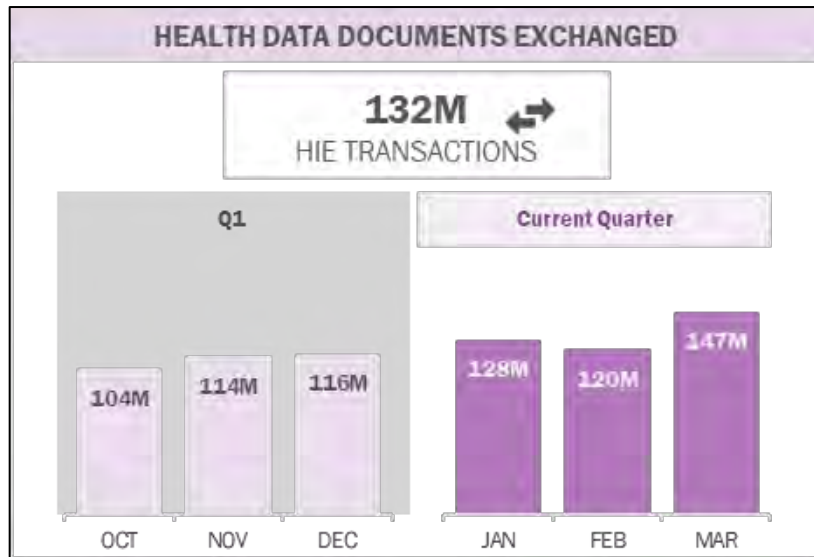## VA Legacy Data Availability to JLV for VA and DOD Systems

Definition

DOD – The percentage of time the Data Exchange Service is available on the data server for all the sites located in the data centers in support of DOD-to-VA HIE.

VA – The percentage of time during the month that VistA Data Services was operational (i.e., no errors and VistA data available to both DOD and VA users) in all production environments.
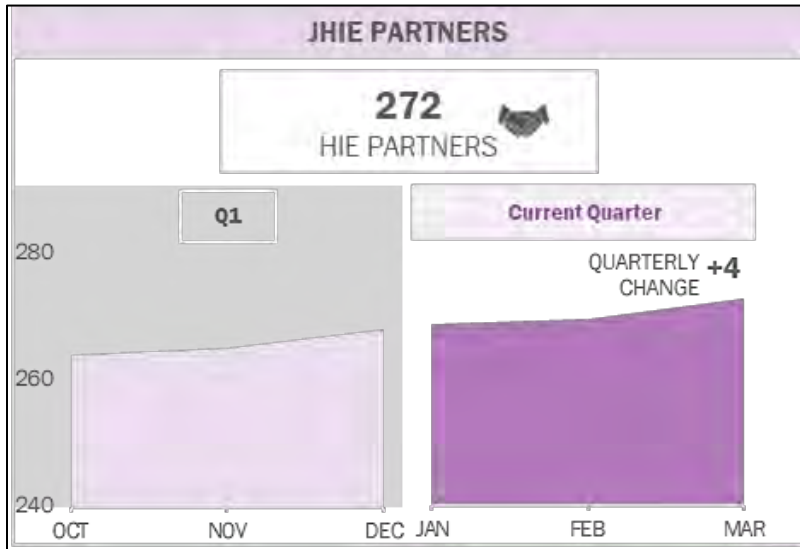
Community Partnerships

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

HEALTH DATA DOCUMENTS EXCHANGED

132M ⇄ HIE TRANSACTIONS

Q1			Current Quarter		
104M	114M	116M	128M	120M	147M
OCT	NOV	DEC	JAN	FEB	MAR

Joint Health Information Exchange Transactions

Definition

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

JHIE PARTNERS

272
HIE PARTNERS

Q1

Current Quarter

QUARTERLY CHANGE **+4**

280

260

240

OCT   NOV   DEC   JAN   FEB   MAR

Joint Health Information Exchange Partners Onboarded

Definition

Monthly and cumulative count of participating provider organizations who are partners in the joint HIE. Note: A provider organization is counted as one partner if the provider has one or more data-sharing agreement(s) 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.
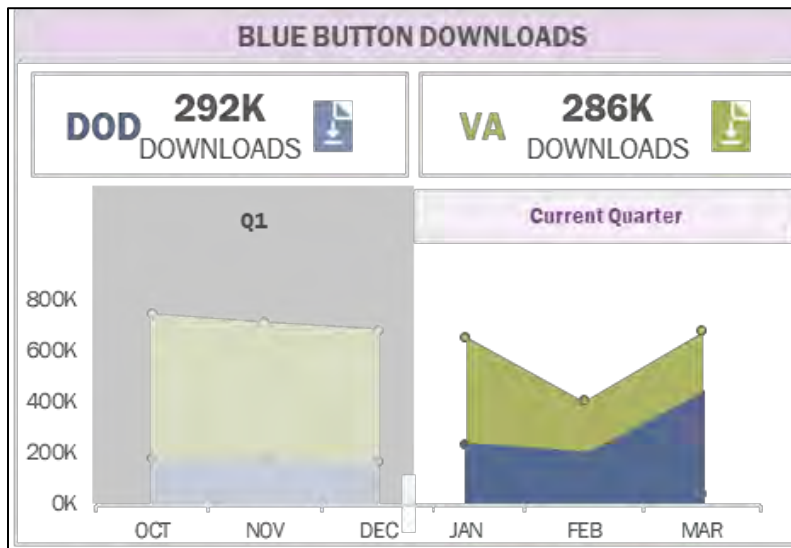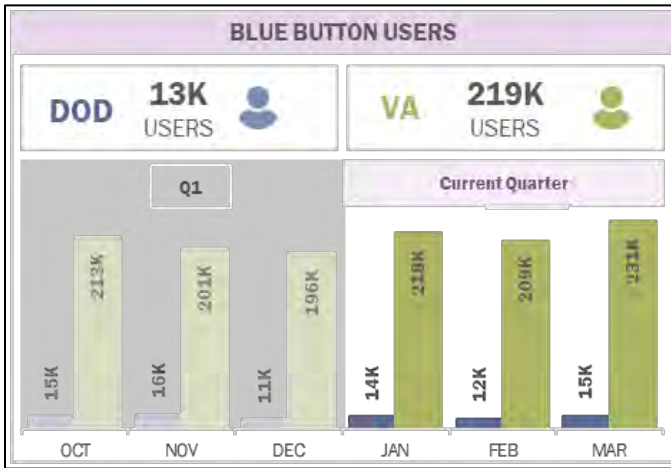

Blue Button Downloads

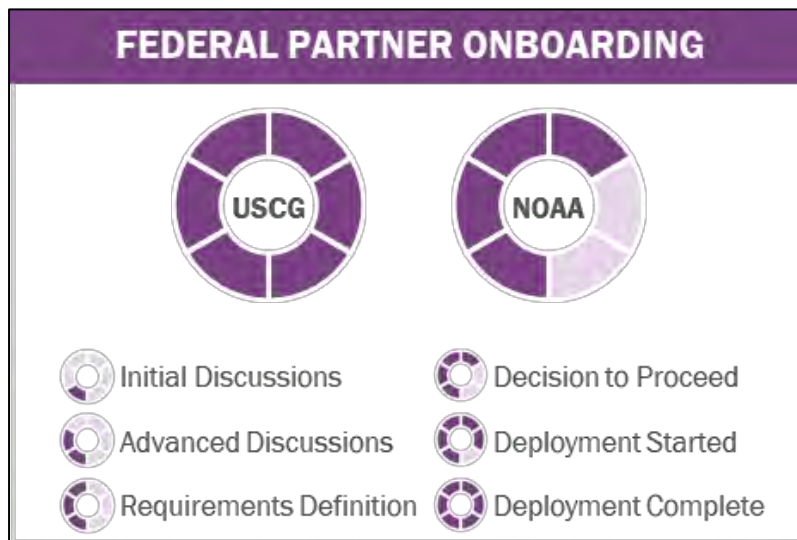| Definition |
| --- |
| Total number of data downloads (e.g., PDF, text) generated by end users per month. |
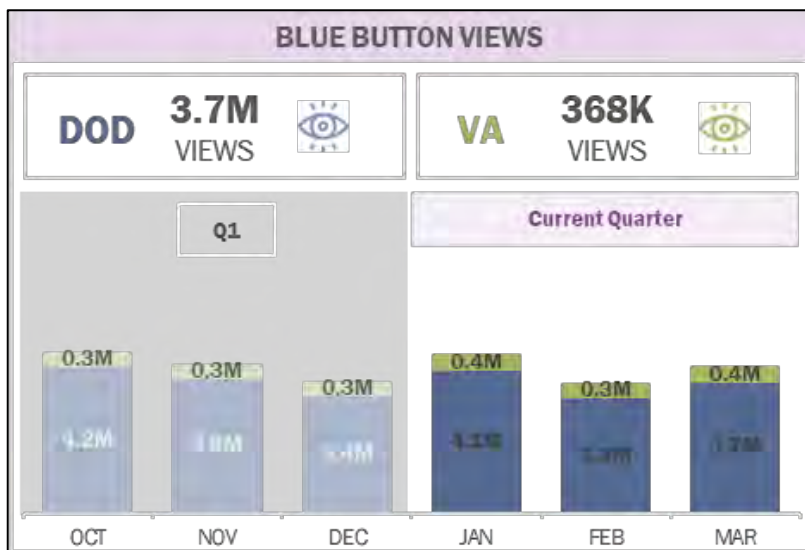
Blue Button Views
Definition
Average number of views generated by end users per month.

Monthly Unique Blue Button Users
Definition
Number of unique Blue Button users within a month.

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

- Initial Discussions
- Advanced Discussions
- Requirements Definition
- Decision to Proceed
- Deployment Started
- Deployment Complete

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