



FEDERAL ELECTRONIC
HEALTH RECORD
MODERNIZATION



FEHRM

Interoperability Progress Quarterly Report

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Federal Electronic Health Record
Modernization (FEHRM) Office

Electronic Health Record Modernization

- **FEHRM Office:** During the fourth quarter of fiscal year 2022 (Q4 FY2022), 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:
 - Managing the Federal Enclave, a shared environment to contain the federal EHR and supporting systems.
 - Managing 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.
 - Providing 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, sites where resources are shared between DOD and VA.
- **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 single, common federal EHR, providing DOD, VA and USCG functional oversight of all configuration decisions impacting the production baseline.

In Q4 FY2022, the JSaAB approved 445 items; including three daily go-live items that surfaced during Waves BEAUMONT and GORDON and White City and Roseburg go-lives, and two items related directly to the COVID-19 response. The FEHRM coordinates an e-JSaAB process for urgent and emergent issue resolution during off-hours, and it was successfully used 18 times during Q4 FY2022.

In Q4 FY2022, 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. Templates were created in a software and systems delivery system to make it more transparent, collaborative and productive to record and expedite this process. The JSaAB approved and reviewed 45 awareness items and 83 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. Most recently, FDG staff evaluated the possibility of combining Functional Subject Matter Expert (SME) Councils into joint DOD/VA Councils. Currently under development and review by FDG, is an effort to establish a much needed, high-impact joint DOD/VA Federal Oncology Working Group (FOWG) to address joint oncology workflows and therapeutic treatment regimens.

The FOWG was initiated 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: Federal Rule and Alerts, which manages and strategically reviews rules and alert clinical decision support notifications in the federal EHR; Federal Research, which manages and reviews research related applications and order requests; and Federal FirstNet, which optimizes and improves the emergency medicine and urgent care application.

- **Joint Functional Requirements:** During Q4 FY2022, the Joint Functional Requirements (JFR) Team garnered joint approval to have the Functional Decision Group (FDG) serve as the governance body responsible to make decisions on joint functional requirements across the federal EHR. As the single point for all requirements, the FDG reviewed the FEHRM's Individual Longitudinal Exposure Record (ILER) requirement to pilot the newly developed joint functional requirements governance process.

The JFR team conducted this initial pilot at the end of July 2022. The joint DOD/VA business needs request for developing clinical functional requirements for use of ILER-derived exposure information within the common federal EHR was presented for FDG approval. The FDG unanimously approved the request for moving forward to the program management offices (PMOs) for the requirements design and development stages. The JFR team continues to develop the functional requirements elicitation and planning phases with DOD and VA as part of fine tuning the JFR's joint governance process.

- **End-User Engagement:** During the reporting period, the FEHRM continued to collaborate with DOD and VA patient and clinician satisfaction SMEs joint work groups (JWG) to establish common instruments and methodologies to survey and measure clinical use

and satisfaction with the federal EHR. 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: 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 Joint EHR Patient Satisfaction item sets (CAHPS-HIT) were collectively selected and successfully incorporated 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 will analyze the longitudinal data for both DOD and VA and bring it back to the JWG for review.

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

- **FEHRM Revenue Cycle/Business Processes:** During this reporting period, the FEHRM obtained executive leadership approval of DOD/VA joint inter-departmental billing requirements. During Q4 FY2022, the team provided referral management interim-state enterprise joint process maps (VA to DOD and DOD to VA) to DHA Health Informatics (DHA HI) End User Engagement (EUE) to develop training artifacts to support users in the upcoming November Revenue Cycle Expansion (RevX) deployment wave. The workgroup closely collaborated with DHA and VHA Business Functional Champions, DHA Unified Business Office (UBO), DOD/VA Sharing Office, VA/DOD Health Affairs Medical Sharing Office, VHA Office of Integrated Veteran Care (OIVC) and VHA Office of Finance and Revenue to identify gaps in Revenue Cycle requirements as they evolve.
- **Joint Enclave Data Management:** During the Q4 FY2022 reporting period, several ongoing projects addressed different focus areas including Oracle Cerner code sets, terminology and data and analytics governances.

In Q4 FY2022, the Executive Data Management Board (EDMB), which functions as the formal Data Management and Governance of FEHRM Data Assets, became fully operational. The EDMB serves as the authorizing and prioritizing function for joint data management activities impacting the Federal Enclave. Under the executive body, data and analytics will be governed by the Data Governance Board (DGB) and Analytics Governance Board (AGB), respectively. In Q4 FY2022, committees were established and chartered 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, integrated processes and workflows were established 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.

In Q4 FY2022, the Federated Interagency Terminology Service (FITS) engaged with the vendor and Departments to jointly review and manage critical terminology projects. New projects, FITS015 COVID-19 Lab Test (LOINC) and Specimen Source (SNOMED-CT) mapping are in progress. The FEHRM terminologists also continue to monitor and normalize Joint Longitudinal Viewer (JLV), Clinical Data Repository/Health Data Repository (CHDR) legacy and federal EHR clinical domains including medication status (FITS011), allergens, medications, laboratory results and document types.

- **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 U.S. Department of Homeland Security (DHS) program offices, their vendors and key stakeholders responsible for segments of the federal EHR ecosystem. In Q4 FY2022, those activities included Test Patients in Production Environment and Medical Readiness Reporting System (MRRS) Data Interface Lessons Learned.

Consistent with the FEHRM's charter mandate to identify opportunities for efficiency and system optimization, they continued to work with stakeholders to identify and track Federal Enclave measures included in the DOD-VA Interoperability Modernization Strategy. In Q4 FY2022, the FEHRM refined measurement reporting techniques to gather and share metrics that identify availability and performance trends, and the federal government's progress toward targeted deployment growth.

The FEHRM works with DOD and VA to actively manage the domains comprising the Federal Enclave to meet the needs of the agencies using the federal EHR. During Q4 FY2022, the FEHRM continued process review sessions with DOD and VA SMEs to document the comprehensive repeatable federal process to improve domain management. The FEHRM also distributed—to DOD and VA PMO stakeholders—an updated “FEHRM Domain Management Execution Guide” documenting the roles, responsibilities and processes for managing the domains supporting the federal EHR.

- **Federal Software Release Management:** In Q4 FY2022, the FEHRM finalized a consensus-driven software release nomenclature adhered to throughout the enterprise.
- **Identity, Credential and Access Management (ICAM):** The FEHRM hosted eight additional sessions in Q4 FY2022 to discuss the impacts of ICAM initiatives on the federal EHR with senior leaders from DOD, VA, DHS and private sector partners. During

Q4 FY2022, the FEHRM coordinated with technical stakeholders from DOD, VA, DHS and private sector partners to recommend unique federal user identification—based on a subset of Federal Agency Smart Credential Number (FASC-N), derived from the NIST 800-73-4 standard. This recommended approach will provide a shared unique identifier for DOD, VA, DHS and other future federal partners’ users. During this reporting period, the FEHRM worked with stakeholders to finalize complexity, feasibility and implementation estimates for this recommendation.

- **Federal Configuration Control Board (FCCB):** The FEHRM worked with DOD and VA to federalize and transform existing configuration control board processes. This transformation will help ensure every change to the federal EHR’s baseline is rigorously designed, engineered and tested. In Q4 FY2022, the FEHRM worked updates to the FCCB charter to capture and accurately describe processes and to codify the Departments’ updated representation on the board. The FEHRM introduced a number of process improvements and will continue iterating processes to optimize the effectiveness, reduce risk and improve transparency with stakeholders.
- **Continuity Business Operations:** Currently, providers rely on the federal EHR to document and support the care of more than 5.5 million DOD, VA, and DHS patients—a number that grows as the federal EHR deploys to more sites. Given the criticality of this mission, the FEHRM works with the EHRM-IO and Program Executive Office, Defense Healthcare Management Systems (PEO DHMS) and their 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 (DR) solutions. In Q4 FY2022, the FEHRM tracked progress of expanding COOP capabilities through the addition of replicated High Availability, Commercial Application Systems (HA-CAS) in the COOP domain. The FEHRM awaits the delivery of the FY2022 Test Plan and Tabletop Exercise Scenario for review and feedback prior to scheduling those activities for this calendar year, which is an annual requirement within the COOP Program. VA is updating its contract to address COOP/DR responsibilities and activities—an activity referred to as “COOP 2.0.” The FEHRM is currently reviewing and updating the COOP 2.0.
- **One Interface Team:** The federal EHR is leveraged by three Departments, but it does not have a single authority for prioritization and efficiencies of interfaced systems and design options for the interface engine. 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. Starting in Q4 FY2022, the FEHRM began to formalize the architecture (i.e., documentation of system interfaces), modeling tools and application program interfaces. The FEHRM will finalize activities to execute the one interface team, starting with the

Rhapsody interface engine, and then expand to OpenLink software and all interfaces to the Federal Enclave.

- **Enterprise Operations Center (EOC):** The EOC is critical to operationalize the FEHRM. The EOC prepares the 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 Q4 FY2022, the EOC provided daily joint executive-level briefings and updates for DOD Wave JACKSONVILLE/EGLIN. These briefings included root cause analyses and corrective actions taken for unplanned incidents impacting the federal EHR and an overview of planned activities that could impact FEHRM partners. 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.
- **FEHRM Test and Evaluation Initiatives:** The FEHRM test activity focused on two key areas to mitigate risks to the federal EHR: the first, a partnership with MITRE to verify the federal EHR adheres to the interoperability performance standards outlined in the National Defense Authorization Act for FY2020 (NDAA FY2020), the second, 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 Q4 FY2022, the FEHRM continued the foundational work required by NDAA FY2020 to assess whether DOD and VA clinicians are able to 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 update the assessment strategy to account for the shift in the scheduled deployment to the target level 4 sharing site—Anchorage, Alaska. This updated strategy will involve independent assessments of stand-alone DOD and VA sites. During this reporting period, the FEHRM completed the Federal Interoperability: NDAA FY2020 Independent Assessment Plan. Looking ahead, the FEHRM will work with DOD and VA to validate the roles, responsibilities, assessment parameters and governance requirements.

During Q4 FY2022, the FEHRM’s Test and Evaluation Joint Testing Initiatives implemented technical controls and transitioned the ongoing administrative and governance responsibilities to the DGB to control the creation and use of test/pseudo records being collocated in the Federal Enclave.

- **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. During FY2022, the FEHRM conducted two tabletop exercises and planned a series of CTTs for FY2023 with the objective of strengthening Federal Enclave security.
- **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 FY2022, the FEHRM worked with stakeholders to finalize a draft incident management framework and associated processes. This effort included a ransomware communications guide for joint responses to cybersecurity incidents impacting the Federal Enclave. This framework is based on the existing incident management frameworks for each Department. In Q4 FY2022, the FEHRM began working on joint standard operating procedures for cyber incident response, escalation, roles and responsibilities, management and reporting.
- **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. In Q4 FY2022, the FEHRM analyzed a roadmap for evolving from the current defense in depth to a zero trust architecture. This process included evaluating methods to consolidate incident response and management information to ensure a coordinated effort to report, remedy and mitigate risks across the Federal Enclave.
- **Joint Sharing Sites (JSS) Implementation Support:** In Q4 FY2022, the FEHRM engaged in the planning, execution and analysis activities to support the unique health informatics and programmatic needs of seven identified joint sharing sites impacted by DOD Wave JACKSONVILLE/EGLIN. The FEHRM identified the critical areas (clinical and business) that would require further dialogues with these sites and actively worked with its interagency partners (DOD Healthcare Management System Modernization [DHMSM] and EHRM-IO PMOs) to put interim solutions in place until both agencies 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 seven joint sharing sites (National HealthCare Corporation Charleston, Naval Health Branch Clinic Panama City, Naval Hospital Beaufort, Naval Branch Health Clinic Key West, MacDill Air Force Base [AFB], Keesler AFB and Eglin AFB in DOD Wave JACKSONVILLE/EGLIN) to identify potential risks due to the asynchronous deployment.

An assessment was conducted on the number of VA clinical staff who currently access the DOD legacy EHR systems to document care and order ancillary services for both DOD beneficiaries and Veterans at these sites. The capability to order/receive lab and radiology orders and results, along with the current management process for scheduling and documenting care provided by several VA specialty clinicians (optometry, dermatology and cardiology) needed modification to support the continued offering of these services after the new EHR go-live on September 24, 2022.

Risk identification and mitigation strategy development were accomplished by the FEHRM in coordination with DHA HI and the Joint Resource Services Assessment Office through active engagement of these joint sharing facilities and the DOD/VA PMOs. Interim State Laboratory Sharing Process Map and change management tip sheets were provided to these sites. Additionally, through the Pay-It-Forward Program, two of the FEHRM clinical staff supported the go-live activities and provided over-the-shoulder training to those affected by these changes.

The FEHRM provided post-deployment support to the lab team at El Paso Veterans Affairs Medical Clinic (VAMC), Texas in support of its shared services impacted by the DOD Wave BEAUMONT in Q3 FY2022.

The FEHRM continued with its effort of bringing together DOD and VA stakeholders, as well as the vendors (Oracle Cerner and Leidos Partnership for Defense Health) to evaluate enterprise Patient Care Location (PCL) decision-making processes and their impact to EHR deployment at joint sharing sites as part of the FEHRM Risks, Issues, Opportunities (RIO) process. The FEHRM pressed the vendors to brief on proposed courses of action to address configuration and printing challenges the lab team at El Paso VAMC experienced following the Wave BEAUMONT June 11, 2022, go-live. The vendors briefed on several alternatives; the PMOs selected and implemented a configuration change. In Q1 FY2023, the vendors will provide a demonstration to showcase the proposed way forward solution to address patient movements across joint sharing spaces while continuing the effort to deliver a briefing of record and agreed-upon courses of action to FEHRM, DOD and VA leadership.

Previously, Anchorage VAMC leadership flagged several unique clinical and business practices related to their sharing agreements with DOD facilities (including clinical workflows and data migration), along with the need for a coordinated plan to transition VA users from MHS GENESIS to the end-state federal EHR. In Q4 FY2022, Oracle Cerner and the FEHRM remained engaged in the summit meetings and the Course of Action (COA) decision briefings on the topics of Orders/Results, Workload Capture and Clinical Imaging Viewing/Storage.

During this reporting period, the FEHRM examined the latest VA EHRM-IO deployment schedule and identified joint sharing sites that require FEHRM support to mitigate risks ahead of the “end state” (in which both Departments will be on the federal EHR).

- **Captain James A. Lovell Federal Health Care Center (FHCC) Federal EHR Implementation:** In coordination with EHRM-IO and PEO DHMS, the FEHRM continued execution of the Enterprise Requirements Adjudication (ERA) process during Q4 FY2022. Topics that inform the FHCC Federal EHR Implementation Plan were prioritized and included those that require a decision to deconflict the build between DOD and VA and those that require a decision on the execution, or approach, for the implementation with intent to converge on federal EHR design.

At the end of Q4 FY2022, a total of 69 topics were identified that require adjudication through the process, prioritized as Primary-Design, Primary-Execution, Secondary and Tertiary. Of the 61 topics submitted by the vendor to route through the process, the FEHRM-led discussion sessions resulted in 45 topics receiving a recommended COA from the EHRM-IO key stakeholders. Six topics remain to review and validate through the process with a projected completion no later than Q1 FY 2023.

The FEHRM held an ERA In-Progress Report (IPR) on August 8, 2022, with executive-level leaders from the EHRM-IO and PEO DHMS and key stakeholders to provide a status update on ERA accomplishments to date and outstanding activities remaining to complete the federal EHR design solution. The group agreed to an approach to compress the timeline with respect to COA recommendations for remaining ERA topics. The FEHRM held a series of dedicated planning and strategy sessions from September 27 to 29, 2022, with leaders from the EHRM-IO, PEO DHMS and SMEs to identify gaps, challenges and issues, determine best recommended courses of action and gain concurrence on key decisions related to the deployment approach.

The FEHRM leads project planning and execution activities for the interagency FHCC EHR Implementation Project Team, guiding weekly leadership and working-level meetings, establishing cross-Department working groups, outlining roles and responsibilities and coordinating notional timelines and activities.

Interoperability Modernization

- **The DOD-VA Interoperability Modernization (IM) Strategy:** This IM strategy provides a framework to guide the Departments as they deliver interoperable solutions for beneficiaries and end users. The strategy was constructed in three separate phases: development of strategic goals and objectives (Phase 1), inventory of current Initiatives that support the goals and objectives (Phase 2) and identification of performance

measures (Phase 3). Phase 3 completed in April 2022, fulfilling the requirements described in NDAA FY2020.

The FEHRM monitors the Departments' progress toward Interoperability Modernization through the Health Data Interoperability (HDI) Metrics Dashboard, a compendium of metrics reported on a quarterly basis. The HDI Metrics Dashboard is detailed below.

- **HDI Metrics Dashboard:** DOD and VA developed numerous systems to improve interoperability between the Departments and their beneficiaries. The FEHRM's Metrics and Analysis workgroup developed key metrics that describe and trend the usage of these systems. Metrics are divided into three categories: a) Department Integration, b) Community Partnerships and c) Patient Engagement. The current HDI metrics are presented and discussed in Appendix A.
- **Joint Health Information Exchange (HIE):** 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 community providers for purposes of treatment. The joint HIE connects to more than 65% of U.S. health care providers and facilities, delivers nearly 5 million documents to community partners and retrieves 40 million documents from community partners every month. Future efforts include continuing expansion with community partners and external networks (Carequality) and leveraging Cerner Ignite Fast Healthcare Interoperability Resources (FHIR) to pull discreet data directly from the federal EHR.

Federal and Industry Stakeholder Collaboration

A successful interoperability ecosystem enables information sharing across organizational boundaries to advance the effective delivery of health care for individuals and communities. Accordingly, the NDAA FY2020 contained several directives for the FEHRM to encourage the development and adoption of national standards for data encoding and formatting. Specifically, the legislation directed the prioritization of open systems architectures and maximization of the use of open application programming interfaces (APIs), including the Health Level Seven (HL7) Fast Healthcare Interoperability Resources (FHIR).¹ The legislation directed the FEHRM to actively engage with national and international health standards development organizations (SDOs) to 1) ensure the standards established by the organizations meet the needs of the Departments, and 2) oversee the adoption of and mapping to such standards by the Departments. Below are the initiatives and activities anchored to the FEHRM's mission as it fulfills these requirements.

- **U.S. Department of Health and Human Services.** The FEHRM collaborates with U.S. Department of Health and Human Services (HHS) agencies to advance healthcare interoperability. Its support of the Centers for Medicare and Medicaid Services (CMS)

and the Office of National Coordinator for Health Information Technology (ONC) are provided below.

- **CMS.** Through various CMS-sponsored events, the FEHRM collaborates with HHS and other federal employees to advance health care interoperability and IT modernization, including:
 - CMS Data Summit 2022 (September 2022). Provided a forum to share ideas, and experiences and align organizational challenges and opportunities around CMS health care data.
 - CMS HL7 FHIR Connectathon (July 2022). Provided future-focused policy updates and testing opportunities for FHIR server and application developers who support better patient access, health equity and data access for the healthcare industry.
 - Interoperability and Standards Collaborative Forum. Connects the HHS and other federal employees to collaborate, learn and elevate new ideas in health care interoperability and IT modernization.

- **Office of the National Coordinator for Health Information Technology (ONC).** ONC is a leading resource to support the adoption of health information technology and promote standards-based health information exchange. During the reporting period, the FEHRM collaborated with ONC stakeholders to further the progress of national and international interoperability standards and the quality of health information exchange required by the Departments through numerous ONC engagements, meetings, webinars and public comment periods to inform its work supporting the 21st Century Cures Act (Cures Act). The FEHRM's collaboration with ONC includes:
 - Adopted Standards Task Force. The Adopted Standards Task Force reviews the existing set of ONC adopted standards and implementation specifications and make recommendations to maintain or phase out such standards and implementation specifications, as required by 42 U.S. Code § 300jj-13 (Setting priorities for standards adoption). The FEHRM analyzed the proceedings of, eight meetings of the Adopted Standards Task Force, which included discussions of FHIR US Core Implementation Guide, the HL7® FHIR® Bulk Data Access Race, Ethnicity Code Sets, Syndromic Surveillance and Gender Harmony code sets.
 - Annual ONC Technical Forum. The annual meeting provides a forum for industry perspectives on the progress made in health IT over the past year and highlights how ONC and the industry continue to advance health technology to improve patient care, health equity, data exchange and interoperability. The FEHRM monitors the forum and provides updates to its stakeholders.
 - Federal Health IT Advisory Committee (HITAC) and Annual Report Workgroup. HITAC recommends to the ONC policies, standards, implementation specifications and certification criteria relating to the implementation of a health information technology infrastructure, nationally and locally, that advances the electronic

- access, exchange, and use of health information. The FEHRM provides comments and input regarding the Annual Report and shares updates with stakeholders.
- Federal Health IT Coordinating Council (FHIT CC) and Digital Health Innovation (DHI) Working Group (WG). 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 United States Core Data for Data Interoperability (USCDI), shares federal progress made towards the 2020-2025 Federal Health IT Strategic Plan and assists in federal health IT coordination activities related to COVID-19.
 - Social Determinants of Health (SDOH) Information Exchange Learning Forum. The SDOH Information Exchange Learning Forum brings together health care providers, community-based organizations, government, payers, health information exchange 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 the DOD and VA community.
 - Trusted Exchange Framework and Common Agreement (TEFCA) Recognized Coordinating Entity (RCE) Informational Calls. The TEFCA RCE coordinates the development of the Trusted Exchange Framework and Common Agreement that supports advancing nationwide interoperability of electronic health information. The FEHRM monitors the calls, analyzes documents and provides comments on language that furthers the advancement of the common agreement.
 - USCDI and Data Strategy and Standards Harmonization Workgroup. The WG reviews and makes recommendations on the draft USCDI version 2 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 3 submission cycle.
- **HL7.** HL7 is a SDO dedicated to providing a comprehensive framework and related standards for the exchange, integration, sharing and retrieval of electronic health information. SDOs are member-supported organizations, often accredited by the American National Standards Institute (ANSI), who develop and maintain standards to meet industry needs. The FEHRM engages with HL7 through numerous mechanisms and forums, including:
 - HL7 Balloting. Balloting is the formal process that HL7 uses to get feedback and comments on specifications prior to publication. For the September 2022 HL7 ballot cycle, the FEHRM prioritized eight standards for analysis and voting that included standards on National Directories, Patient Contributed Data, Personal Functioning and Engagement and Pharmacy Templates, which have a direct impact on interoperability between DOD and VA. The FEHRM and VA submitted



- votes and comments to HL7 prior to closing the ballot cycle. The ballot cycle evaluation report was completed and distributed to FEHRM leadership.
- HL7 Government Birds of a Feather. The FEHRM hosted and facilitated the Government Birds of a Feather (BoF) meeting during the HL7 WG meeting (September 22, 2022). 84 people representing 10 federal agencies and departments, technology vendors, industry experts and national and international representatives. It featured a presentation and discussion on Social Determinants of Health (SDOH) from the Centers for Disease Control (CDC) and speakers from ONC who presented on USCDI+, the Cures Act, ONC's involvement with HL7 and a roundtable on agency priorities regarding standards initiatives.
 - HL7 WGs. HL7 WG meetings allow federal agencies, stakeholders and the HL7 community to work on standards and to network with industry leaders from around the world. 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. During Q4 2022, 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. The FEHRM assisted in the development of the C-CDA Companion Guide R3 and worked with ONC to publish its 2022 Standards Version Advancement Process update. This newly published standard was one of 10 new standards ONC encouraged Certified Health IT vendors to implement as part of its Certification program.
 - Gravity Project SDOH. 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 WG. The FEHRM collaborates with the Mobile Health WG in its development of a Unique Mobile Health Application Identifier to help establish the provenance of data shared with EHRs and other health IT.
 - Post-Acute Care Interoperability (PACIO) Initiative. The FEHRM supports the PACIO Initiative as it facilitates improved transitions of care between health care settings and advocates for wider use of advanced directives.
 - Reducing Clinician Burden Project. The goal of the Reducing Clinician Burden (RCB) Project is to better understand the root causes of clinician burden, to share success stories regarding the use of IT and to support novel and innovative IT advances that reduce burden. The FEHRM collaborates with the HL7 EHR WG on the RCB Project to advance data exchange between providers and payers, establish coverage for health care services and assist with payment coordination.

- **Institute of Electrical and Electronics Engineers (IEEE).** IEEE is a leading developer of industry standards in a broad range of technologies that drive functionality, capabilities and interoperability. The FEHRM leads the Departments in standardizing data exchanges between medical/mobile-health devices and health information systems (e.g., the federal EHR) by contributing to the development of conceptual frameworks and standards and sharing standards information. Notable activities for Q4 FY2022 include:
 - IEEE Life Sciences and Technical Community. The FEHRM collaborated with IEEE Life Sciences and Technical Community members to promote telehealth equity.
 - IEEE P1752 Main WG. The FEHRM engaged in IEEE P1752 Main WG meetings to discuss specific use cases when exchanging meaningful, descriptive mobile health data pertaining to cardiovascular, respiratory, and metabolic health measures.
 - IEEE P2933 Clinical Internet of Things WG. The FEHRM finalized the privacy chapter of the Clinical Internet of Things standard and established the linkages for the TIPSS principles (Trust, Identity, Privacy, Protection, Safety, Security). It also analyzed the comprehensiveness of stated privacy requirements and principles.
- **Other Collaboration.** The FEHRM collaborates with professional societies and associations to foster partnerships, support health care data exchange and promote interoperability modernization.
 - Armed Forces Communications and Electronics Association (AFCEA). The FEHRM fosters inter-agency communication and collaboration with AFCEA through sharing of best practices, identifying mission-critical issues and management approaches, and engaging with industry and service providers at numerous AFCEA events (i.e., Webinars, breakfast seminars).
 - Healthcare Information and Management Systems Society (HIMSS). The FEHRM attends the federally focused HIMSS National Capital Area (NCA) Chapter events. Membership includes representatives from hospitals, managed care organizations, vendors, integrated delivery systems, academia, non-profit health care organizations, as well as government agencies, such as the Military Health System, VA, HHS and other federal health care agencies.
 - Workgroup for Electronic Data Interchange (WEDI). The FEHRM joins discussions at numerous WEDI forums and monthly seminars. WEDI is the preeminent national membership association for health IT guidance and collaboration. As a formal advisor to the Secretary of HHS, WEDI is the leading authority on the use of health IT to efficiently improve health information exchange, enhance care quality and reduce costs.

FEHRM-Facilitated Engagements

- The FEHRM facilitates numerous meetings to increase awareness and encourage engagement of its federal and industry partners. During Q4 2022, the FEHRM facilitated the following engagements.
 - FEHRM-ONC-CMS Joint Coordination Meetings. On August 23, 2022, the FEHRM hosted a joint coordination meeting with ONC and CMS to share alignment across the federal government in health IT. 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.
 - FEHRM Standards Stakeholder Group. The FEHRM monthly Standards Stakeholder Group meetings to share standards-related project updates to the Departments and key stakeholders. The Standards Stakeholder Group shared information regarding HL7 and IEEE WG standards development activities, FHIR development and trends within the Standards development community, such as patient-contributed data and telehealth. These meetings provide an opportunity for collaboration by FEHRM, DOD and VA on a variety of projects being deployed regarding standards alignment and adoption.
 - FEHRM Town Hall. The FEHRM hosted its quarterly Town Hall on July 27, 2022, which provided a professional forum for federal partners to discuss current and emerging thinking on federal EHR issues to advance interoperability. This session addressed the HL7 Gender Harmony project and the various components regarding sex and gender identity in Use Cases, Logical Models and USCDI Alignment. Also, ONC and CMS shared updates about current and upcoming engagements and initiatives. More than 60 participants representing eight federal agencies attended this event.

Emerging Priorities

- **Individual Longitudinal Exposure Record (ILER).** ILER is an IT system that associates occupational and environmental exposures with individual Service members based on their work history and geographic proximity to known exposure events. ILER's principal product is the Individual Exposure Summary (IES)—a list of occupations, deployments and potential exposures that each Service member may have sustained. ILER allows researchers to assemble groups of Service members who sustained similar exposures, so their health records can be analyzed for trends and potential clinical practice guidelines developed. Benefits claims examiners can use ILER as a source of evidence to support a Veteran's claim for benefits. The FEHRM supports the implementation of ILER through five lines of effort:
 1. Functional Requirements. Combining patients' exposure history with their clinical record is likely to reveal associations between the exposures and clinical

- conditions, which can lead to improved care to future Veterans. The FEHRM convened a Clinical Functional WG of DOD and VA SMEs that focused on the development of clinical functional requirements for the use of ILER-derived exposure information within the common federal EHR. The FDG approved the clinical FRD on July 22, 2022. The requirements are scheduled for presentation at the EHR Capabilities Summit in October 2022.
2. **National Standards for Exchange of Exposure Information.** The FEHRM conducts an environmental scan of existing national standards relevant to exposure data structure and terminologies. The identification of relevant standards is necessary to support the electronic exchange of exposure related data. To the extent possible, ILER SMEs will evaluate and validate the appropriateness of any existing standards for integration into the ILER system. Where none exist but are necessary, the FEHRM will assist the ILER Program Office to develop and present new standards at SDO meetings.
 3. **Performance Measures.** The FEHRM led a Performance Measure Specification WG of DOD and VA SMEs that focused on identifying important performance measures to report progress with development and implementation of the ILER. The WG reviewed 18 candidate performance measures and specified details for their collection, calculation and reporting. These measures are being considered for incorporation into reporting activities by the ILER Program Office and the FEHRM.
 4. **Delivery of the IES to the Joint Longitudinal Viewer (JLV) and DOD and VA patient portals.** NDAA FY2021 directed VA to provide Veterans with access to their ILER information through a website. Leveraging their success with delivering the IES to clinicians via JLV, the FEHRM applies relevant lessons to assist in delivering the IES to the DOD and VA patient portals—MyHealthVet, MHS GENESIS Patient Portal and TRICARE Online.
 5. **Data Interface Between ILER and the Federal EHR.** Incorporating ILER-derived exposure information into clinical workflows requires the interoperation of ILER with the federal EHR. The FEHRM leads an ILER-EHR Data Interface WG that explores options for effective and efficient data interfaces required to exchange exposure information between ILER and the common federal EHR. Technical and functional SMEs analyze potential options for data exchange.
- **Enterprise Reporting and Performance Measurement.** One of the most important and anticipated benefits of the federal EHR is the ability to monitor, report and execute data-based decision-making to improve care quality, patient safety, population health/readiness, financial viability and technical and operational efficiency across the federal environment. As the federal EHR expands its reach and leaders and users of the system become increasingly proficient at understanding their data needs to improve their functional areas, the FEHRM provides an environment for federal partners (currently DOD, VA and USCG) to convene and identify opportunities for continual

improvement of executive and operational level management and decision-making based on near real-time data availability.

The FEHRM currently monitors the Departments' progress toward interoperability modernization through the HDI Metrics Dashboard, a compendium of metrics reported on a quarterly basis. This past quarter, the FEHRM reviewed existing measures and identified new reporting opportunities to present to Department SMEs. Additional analysis will continue in the next quarter.

Conclusion

Throughout Q4 FY2022, the Departments remained committed to measuring, assessing and enhancing health data interoperability 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 Q4 FY2022, 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 and (c) Patient Engagement. Figure 1 represents a snapshot of the Q4 FY2022 HDI Metrics Dashboard.

Figure 1 – Q4 FY2022 HDI Metrics Dashboard



Q4 FY2022 Highlights: Metrics with a notable change in Q4 FY2022 from Q3 FY2022 are captured in Table 1 below.

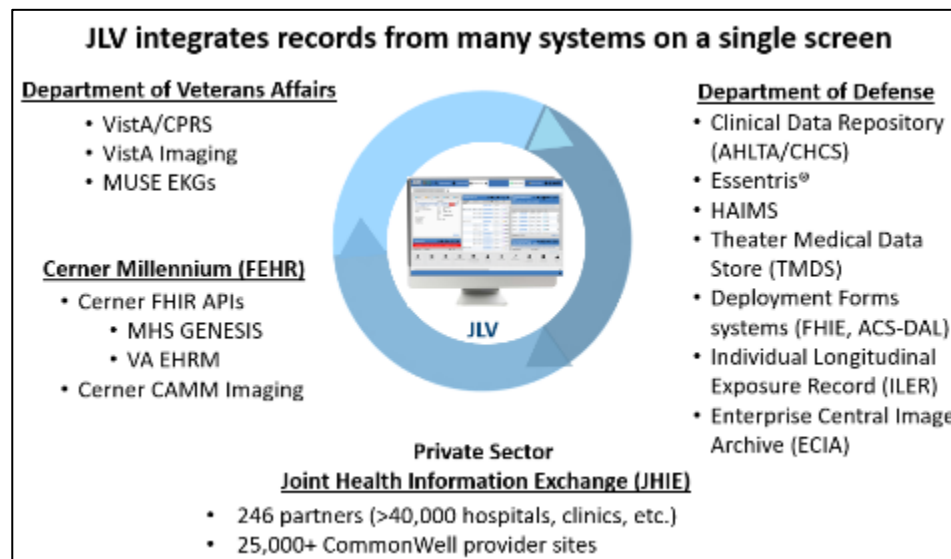
Table 1 – Quarter Highlights

Metrics	Highlights
JLV Records Viewed	The monthly average number of DOD Joint Longitudinal Viewer (JLV) records viewed trended upwards roughly 10% from Q3 to Q4. This is likely due to additional clinical sites going live with MHS GENESIS. JLV is the principal method for clinicians to view data from legacy systems. JLV's use is anticipated to increase for a period of time as clinical sites transition to MHS GENESIS.

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

1. **Joint Longitudinal Viewer (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 health information exchange civilian partners 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 Health Information Exchange (HIE).** The joint HIE is a secure network that shares Veteran and Military Health System beneficiary health care information electronically with civilian network providers who join the eHealth Exchange¹

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/>

and CommonWell². Community partners who join undergo stringent security requirements to access patient records and health information securely, regardless if the facility is a civilian provider, military hospital, outpatient clinic or VA Medical Center.

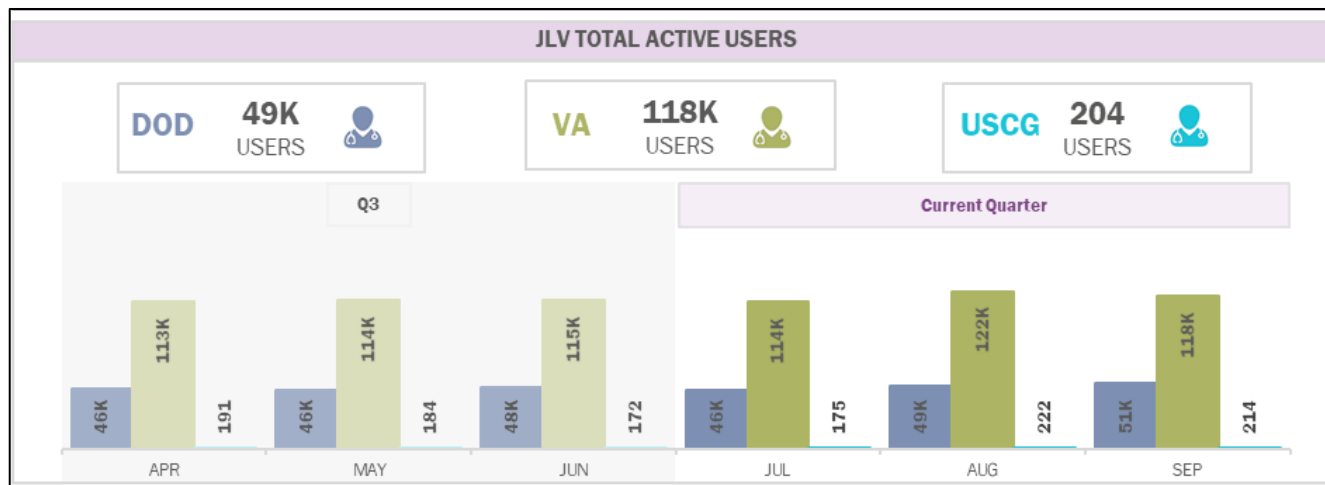
3. **DOD Clinical Data Repository/VA Health Data Repository (CHDR).** CHDR enables DOD and VA to exchange computable outpatient pharmacy and drug allergy information for shared patients. To achieve computable interoperability, data for each clinical component are first standardized to a mutually agreed upon mediating vocabulary that both systems comprehend.
4. **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 seven 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 September 30, 2022.

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/>

Category A: Department Integration

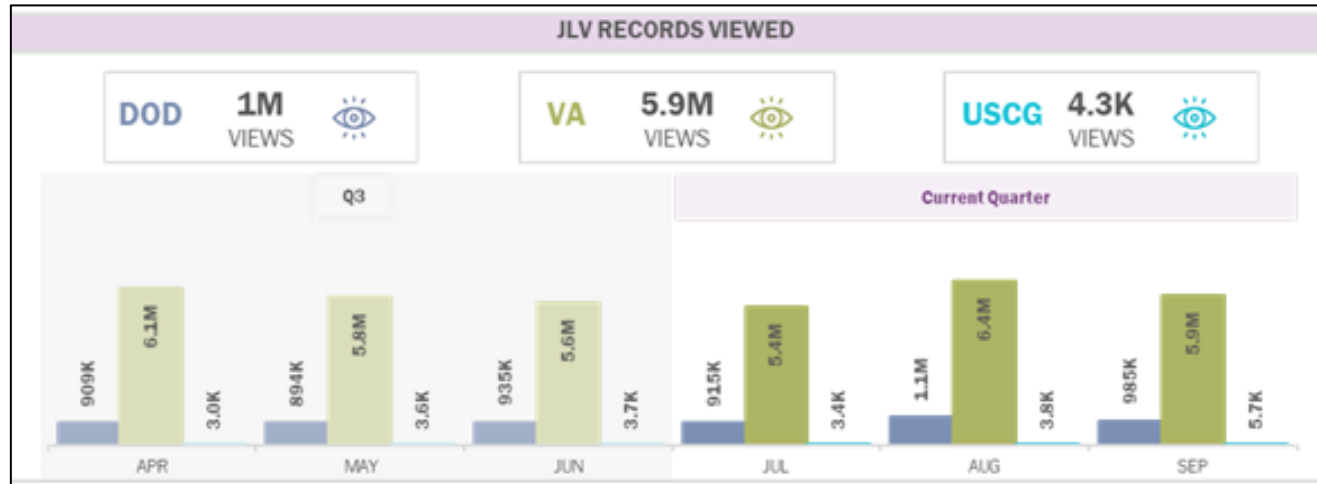
Value Statement: The FEHRM tracks utilization of legacy and modern EHRs, which enables Departmental leadership and Congress to assess the reliability of legacy systems and evaluate the Departments’ progress in transitioning from legacy systems to the single, common federal EHR.



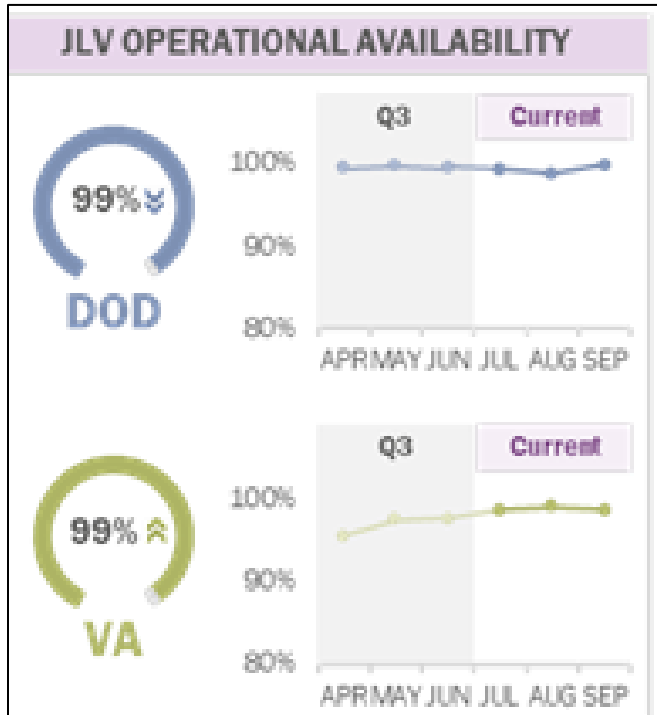
JLV Total Active Users

Definition

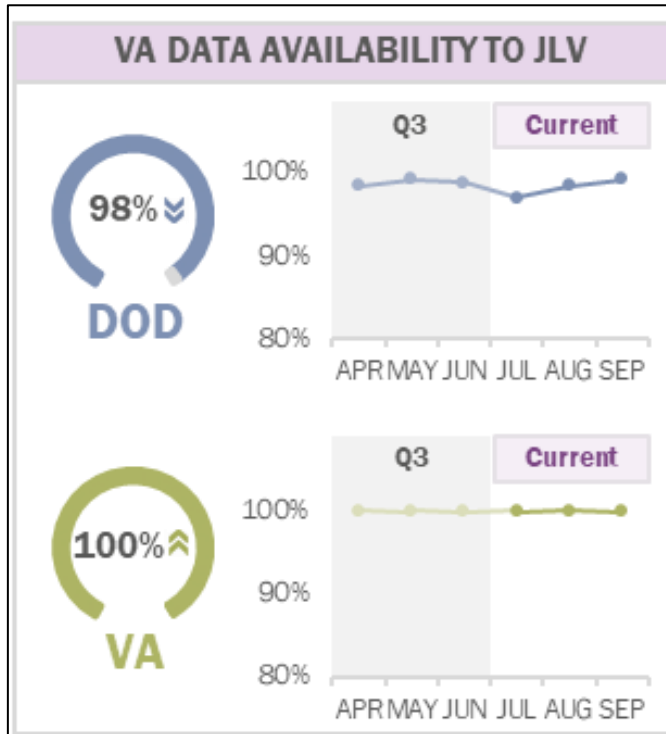
Active User: a unique user who has logged into JLV in a given month



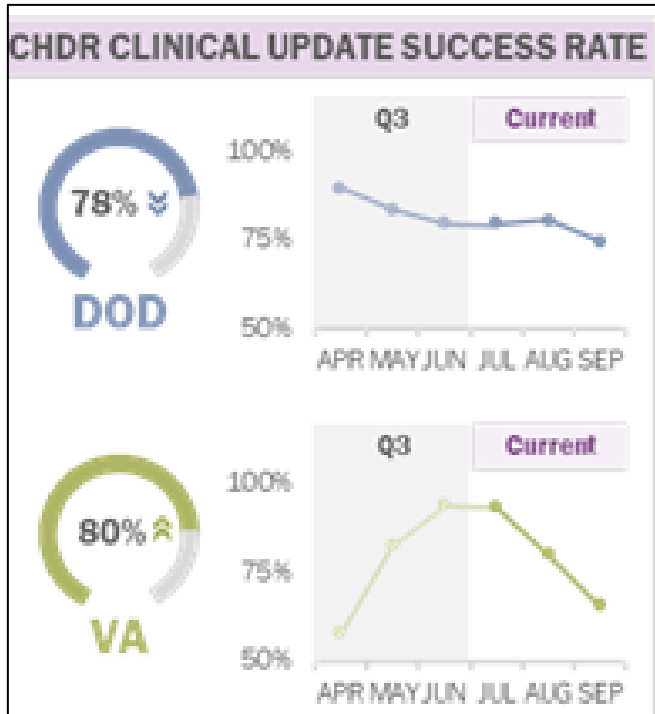
JLV Records Viewed	
Definition	Monthly total number of patient records viewed using the JLV for DOD, VA, and USCG.
Change	The monthly average number of DOD Joint Longitudinal Viewer (JLV) records viewed trended upwards roughly 10% from Q3 to Q4. This is likely due to additional clinical sites going live with MHS GENESIS. JLV is the principal method for clinicians to view data from legacy systems. JLV's use is anticipated to increase for a period of time as clinical sites transition to MHS GENESIS.



JLV Operational Availability	
Definition	
	<p>DOD – The percentage of time during the month that the JLV was available for log in 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).</p> <p>VA – The percentage of time during the month representing the end-user experience where JLV was available for login and functionally operational (users able to conduct patient searched/lookup and retrieve DOD, VA and federal EHR data in production environments).</p>



VA Data Availability to JLV	
Definition	
	<p>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.</p> <p>VA – The percentage of time during the month that VistA Data Services was operational (no errors and VistA data available to both DOD and VA users) in all production environments.</p>



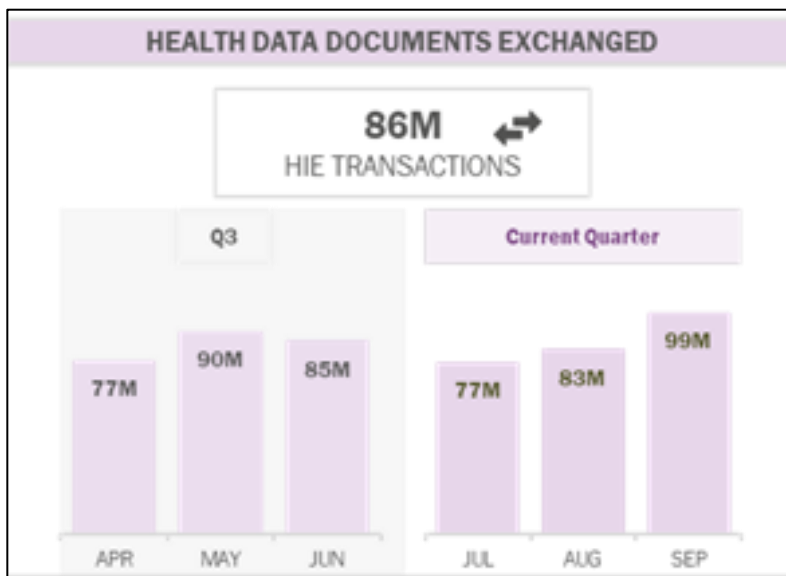
CHDR Clinical Data Update Success Rate from DOD to VA and VA to DOD

Definition

Percentage of CHDR clinical update messages with data (allergy or pharmacy) successfully processed. A successful process occurs when the sending agency receives a response from the receiving agency indicating successful receipt, translation and storage of clinical data.

Category B: Community Partnerships

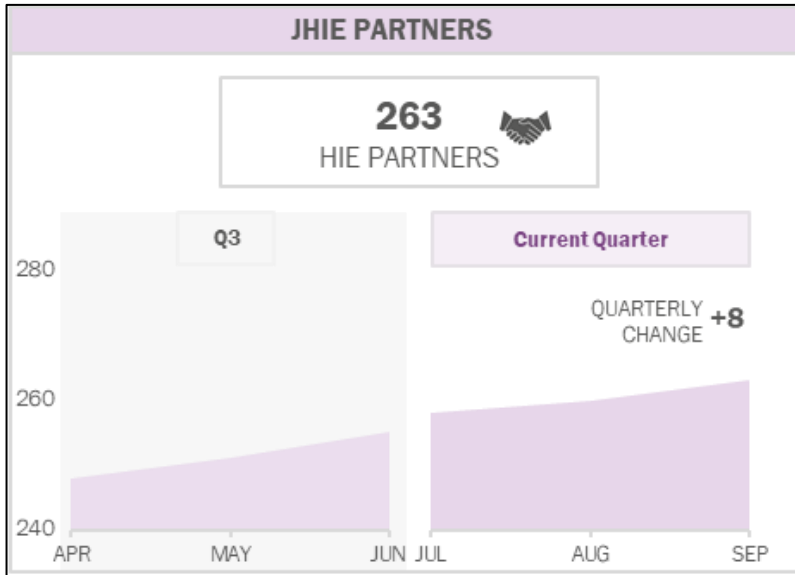
Value Statement: The FEHRM monitors the Departments' progress toward consistent, secure and reliable health data exchange by tracking joint HIE partner onboarding, as well as joint HIE transactions between the Departments and private care partners as best practices and improvements are implemented.



Joint Health Information Exchange (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.



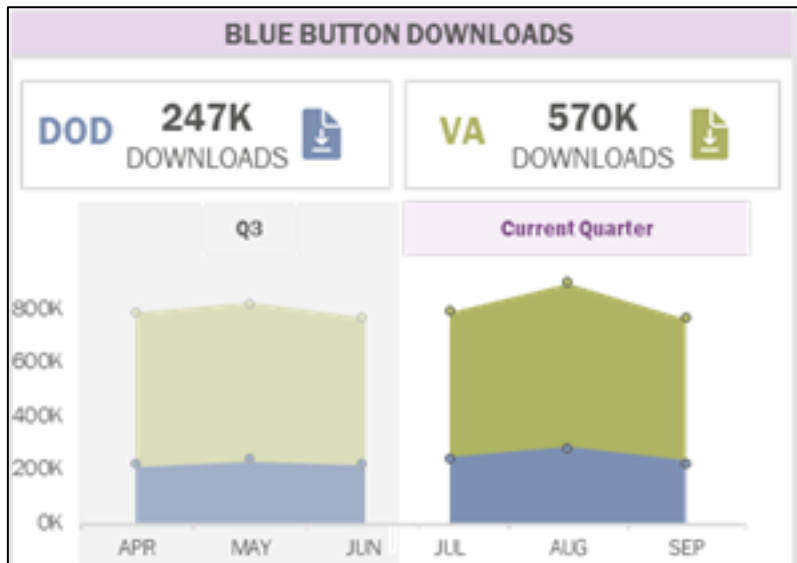
Joint HIE Partners Onboarded

Definition

Monthly and cumulative count of private sector providers who are partners in the joint HIE (a private sector provider is counted as one partner if the provider has one or more data sharing agreement(s) with DOD or VA).

Category C: Patient Engagement

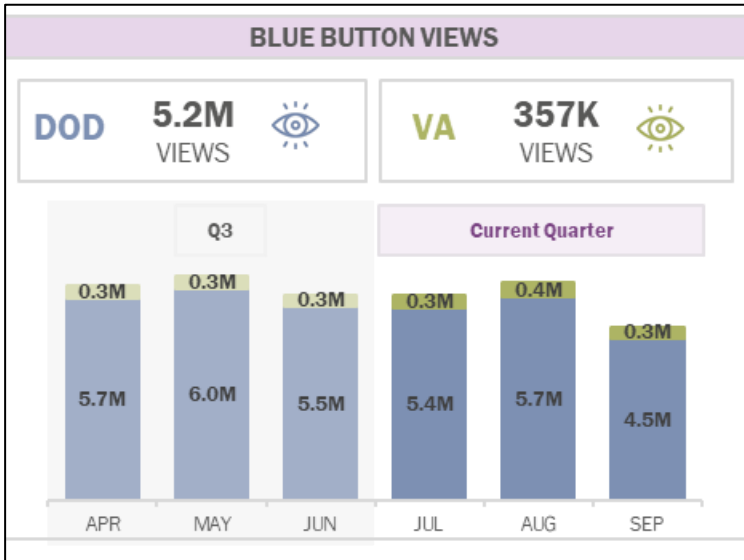
Value Statement: Blue Button serves as the foundation for broader patient engagement activities within the Departments, enabling patients to have easy access to their own health information in a usable format. The FEHRM monitors several metrics associated with Blue Button that show patient engagement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



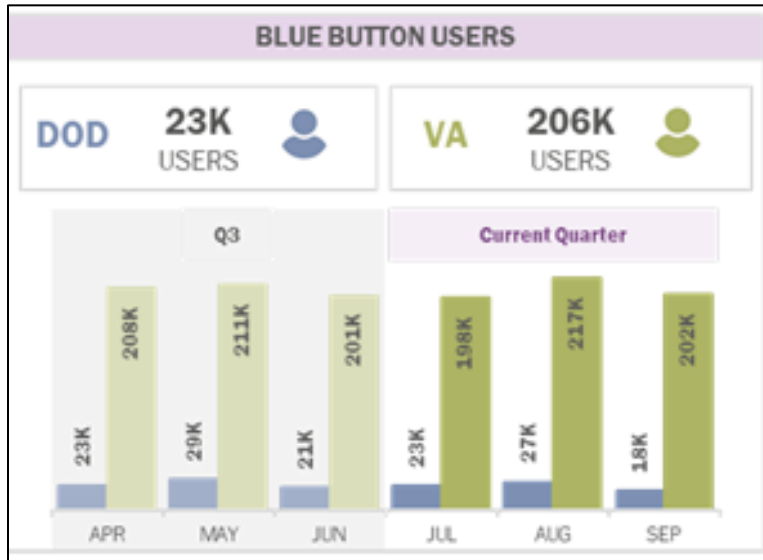
Blue Button Downloads

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.