FEDERAL ELECTRONIC HEALTH RECORD MODERNIZATION

FEHRM

Interoperability Progress Quarterly Report

THIRD QUARTER, FISCAL YEAR 2021

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Interoperability Metrics

Pursuant to the National Defense Authorization Act for Fiscal Year 2020 (NDAA FY2020), the Federal Electronic Health Record Modernization (FEHRM) program office will establish a Joint Interoperability Strategy with the Department of Defense (DOD) and Department of Veterans Affairs (VA). As part of this process, the FEHRM will evaluate metrics appropriate for assessing and monitoring progress toward achieving the outlined strategy.

A snapshot of the current baseline Health Data Interoperability (HDI) metrics used to track progress toward modernization and enhancement of HDI is included below. Appendix A includes details outlining each metric category: (A) DOD/VA Integration, (B) Community Partnerships and (C) Patient Engagement.

Electronic Health Record Modernization

- **FEHRM Program Office:** During the third quarter of FY2021 (Q3 FY2021), the FEHRM continued to prioritize operationalization and convergence in its mission to implement a single, common federal electronic health record (EHR) to enhance patient care and provider effectiveness, wherever that care is provided. This operationalization and convergence strategy unified efforts across the federal EHR ecosystem and delivered common capabilities that add value to EHR deployments such as the EHR baseline; configuration and content management; software releases and upgrades; the Federal Enclave; cybersecurity; and virtual health.

- **Joint Configuration Management:** The Chief Medical Informatics Officer (CMIO) manages and optimizes the Joint Sustainment and Adoption Board (JSaAB). This joint governance body is responsible for the approval of all federal EHR content and configuration changes. The JSaAB directly informs the Joint Change Control Board (CCB) and is essential to operating the single, common federal EHR, providing DOD and VA (the Departments) functional oversight of all configuration decisions impacting the production baseline. At the end of Q3 FY2021, the JSaAB Charter annual review was initiated and is pending final approval.

  For Q3 FY2021, the JSaAB approved 426 weekly items and five daily go-live items that surfaced during Wave CARSON+, and seven items related directly to the COVID-19 response. The FEHRM CMIO established, finalized and rehearsed an e-JSaAB process for urgent and emergent issue resolution during off-hours; this e-JSaAB process was successfully utilized 17 times during Q3 FY2021. The FEHRM CMIO also kicked off the data call for the transition of the JSaAB platform to improved interfaces with additional DOD and VA processes such as the Joint CCB and future issues resolution management systems.

Additionally, the CMIO manages the Functional Decision Group (FDG). The FDG is a body of senior clinical, business and health informatics leaders from VA's Office of Electronic Health Record Modernization (OEHRM), Veterans Health Administration (VHA) and Defense Health Agency (DHA). The FDG reviews, analyzes and decides on critical joint issues that apply to the federal EHR.

In Q3, the FDG continued to monitor the program management office (PMO) technical communities who were tasked to address the need for allergy and medication checks, to cross between both Departments' legacy and modern EHR systems. This effort continues with a proposed technical implementation in Q3 FY2021. During Q3 FY2021, the FDG continued to expand on an initiative to evaluate proposed DOD and VA configuration change requests for convergence. While the Departments have unique clinical and business issues that differ based on mission, this effort in the FDG is squarely focused on converging DOD and VA clinical and business capabilities where appropriate. This effort has revealed several joint opportunities for convergence. Recently, DOD and VA successfully evaluated requirements and developed joint requirements for access and training in a joint pre-production environment.

- **End-User Engagement:** During the reporting period, the CMIO collaboration with the DOD and VA patient and clinician satisfaction subject matter experts (SMEs) continued in the effort to establish common instruments and methodologies to survey and measure clinical use and satisfaction with the federal EHR. This collaborative effort was enacted to equally assess satisfaction across DOD and VA, save government resources and reduce overall costs.

  The survey instruments collaboratively selected for both clinician and patient satisfaction are nationally recognized and include: The KLAS Arch Collaborative for Clinician Satisfaction, and The Consumer Assessment of Healthcare Providers and Systems Health Information Technology (CAHPS-HIT) item set. The Joint EHR Patient Satisfaction item sets were successfully included in the Q3 FY2021 surveys for both DOD and VA.

- **FEHRM Revenue Cycle/Business Processes:** In late Q2 FY2021, the FEHRM CMIO initiated a biweekly series on revenue cycle/business processes with representation from VHA Office of Community Care (VHA OCC), OERHM, VA Payment Operations and Management (POM), VHA Chief Informatics Office, DOD/DHA Business Functional Champion, Unified Business Office (UBO), Referral Management Working Group and DOD/VA Sharing Office.

  Through Q3, this group established two major workstreams with specific deliverable targets: developed joint business requirements for ancillary referrals and standard referral management applicable to joint sharing sites and non-joint sharing sites (platform agnostic) and drafted joint enterprise interim workflows for referral

management and billing that were vetted weekly by VHA and DHA SMEs and representatives. In Q4, this group will complete the FEHRM/DHA/VHA quality control and executive approval process of several interim enterprise referral management workflows for VA Legacy to DOD MHS GENESIS, which will be implemented as part of upcoming EHR deployments.

- **Joint Enclave Data Management:** During the Q3 FY2021 reporting period, there were several ongoing projects to address joint data management. The FEHRM CMIO team stood up several joint DOD/VA groups with different focus areas including Cerner codesets, terminology and data governance.

  During Q1 and Q2 FY2021, the FERHM launched a project to apply the emerging Joint Executive Committee (JEC) data management strategy to a practical operational plan for the Joint Enclave. In partnership with joint stakeholders, the group sketched out a draft data governance structure to define data management activities under a unified understanding of responsibilities across DOD, VA and the FEHRM. The plan development is underway and anticipated for comment/release in Q4 FY2021.

  Additionally, in Q3 FY2021, the FEHRM is standing up an executive body, which will function as the formal Data Management and Governance of FEHRM Data Assets. Under the executive body, data and analytics will be governed by the Data Governance Board (DGB) and FEHRM Analytics Board (FAB), respectively.

  In Q3 FY2021, the Federated Interagency Terminology Service (FITS) is continuing to engage with the vendor and Departments to jointly review and manage critical terminology projects. Eleven project or issue proposals have been submitted, three have been approved by the FITS. The FEHRM Terminology Services team also continues to monitor and normalize legacy and Cerner clinical domains such as allergens, medications, labs and document types.

- **Joint Enclave Management:** During Q3 FY2021, the FEHRM's Technical Director hosted several Environment Management Operations Center (EMOC) activities in partnership with DOD and VA program offices, their prime vendors and key stakeholders responsible for segments of the federal EHR ecosystem. These sessions included access to enclave data, cyber notification and escalation, problem management, end-to-end performance management, enclave-ecosystem technology roadmaps, unified patient experience and DEERS data harmonization.

  Because of these ongoing functional-technical collaborative efforts, the EMOC continued to host or participate in technical and functional hybrid discussions on joint sharing sites. Technical and functional SMEs were able to collaborate and request further examination of preliminary courses of action and their associated critical milestones. This effort

continues to serve as a driving force for the FEHRM and Departments to get to an integrated plan for the federal EHR and work through technical issues as they deliver capabilities.

- **Enterprise Operations Center (EOC):** The EOC activity is a critical component of operationalizing the FEHRM. The EOC prepares the federal EHR system owners and partners in the Ecosystem for the intense schedule of go-live activities. The EOC continues to support cross-organizational collaboration and executive level reporting on the Federal Enclave and ecosystem during federal go-live events. The EOC has provided joint executive level briefings for eight go-live events, through reporting, refining processes, participating in joint problem management improvement efforts, sharing observations regarding traceability of incidents and changes in the ecosystem, and continuing to expand and enrich stakeholder engagements.

- **FEHRM Joint Testing initiatives:** The FEHRM Test activity has been focusing on several key areas, to mitigate risk to the federal EHR, including a response to the NDAA FY2020 evaluation requirement, cybersecurity testing of the system and ecosystem and testing enablers. The NDAA FY2020 requires the FEHRM to enter into an agreement with an independent entity to conduct an evaluation that confirms interoperability and the ability for any DOD or VA provider to access and meaningfully interact with, a complete patient health record, regardless of the source of the information (e.g. DOD/VA federal EHR, DOD/VA legacy EHRs, private sector health data sources). Cybersecurity testing will be executed by an independent entity to assess site/network/and EHR hosting environment points of exploitation, identify strategies to mitigate risk and provide findings to the FEHRM and the Departments. Testing enablers are focused on processes and activities that enable joint testing efficiencies, including identifying physical locations or virtual options for testing, and management of test patient creation and clean-up in the federal EHR.

- **Joint/Sharing Sites Implementation**; In Q3 FY2021, the FEHRM engaged in numerous planning, execution and analysis activities to support the unique health informatics needs at joint DOD and VA sharing sites. The FEHRM, alongside its DHA Health Informatics (DHA HI) and VHA Office of Health Informatics (VHA OHI) partners, completed discovery assessments for a set of prioritized integrated sharing sites (12 VA facilities and 14 DOD facilities, not including the Captain James A. Lovell Federal Health Care Center [FHCC]).

  Based on this analysis, the FEHRM, DHA HI and VHA OHI recommended continued asynchronous deployment, with mitigation activities, for these sites. Final site reports and a Joint Summary Report were completed and shared with the EHRM program offices in Q3 FY2021.

Furthermore, near term, the FEHRM is actively working with its interagency partners to mitigate risks associated with the asynchronous DOD and VA EHR deployments affecting joint sharing sites in Alaska (Alaska Veterans Affairs Health Care System Go-Live) and Hawaii (Tripler Army Medical Center Go-Live).

In Q4 FY2021, the FEHRM will conduct an initial assessment of the nature of sharing across all DOD Waves in Flight to evaluate potential risks and develop risk mitigation strategies. As warranted, the FEHRM will also participate in DHA HI Current State Workflow Assessments to better understand the current-state sharing environment and determine the need for interim workflows.

- **FHCC EHR Implementation Project:** In Q3 FY2021, the FEHRM announced an agreement between DOD and VA to jointly deploy a single EHR solution as a true federal EHR at the FHCC. The FHCC EHR Implementation Project consists of a multi-agency team orchestrated by the FEHRM in collaboration with DOD and VA EHRM program offices. The FEHRM conducted a variety of activities in support of this significant deployment, including, but not limited to: orchestrating project planning and execution activities for the team; guiding weekly leadership and working-level meetings; establishing cross-Department working groups; outlining roles and responsibilities; and coordinating notional timelines and activities. In Q4 FY2021, the FEHRM will coordinate an FHCC Executive Session with the supporting FHCC EHR Implementation Project organizations and the FHCC leadership team.

  Following the FHCC Executive Session, the FEHRM, in collaboration with EHRM PMOs, Department health informatics, and the vendor scheduled an end-to-end assessment (to occur late Q4 FY2021-early Q1 FY2022) to review clinical, functional, technical and non-functional workflows, as well as business processes to inform a new enterprise baseline design for implementation at the FHCC that meets the Departments' as well as site-specific needs.

- **Deployment:** Throughout the reporting period, the FEHRM continued to drive federal capabilities to enhance health care by leading value-added activities for DOD and VA EHR deployments. These activities included managing common capabilities such as the EHR baseline, the Federal Enclave, monitoring activities, software releases and upgrades and cybersecurity.

  The FEHRM delivered value and added capabilities integral to federal EHR modernization. The FEHRM worked closely with the Departments' functional, technical and site leadership to mitigate challenges and establish prioritized activities to advance solutions, capability delivery and joint initiatives supporting DOD, VA and Department of Homeland Security's U.S. Coast Guard (USCG) operational requirements. During Q3 FY2021, the FEHRM supported the DOD's go-live of Wave CARSON+ (April 24, 2021).

Joint Health Information Exchange (HIE)

- **Joint HIE Enhancements:** The FEHRM continued to support enhancements to the joint HIE, including enhancing patient matching double checks to accurately match patient data exchanged. The FEHRM also continued to support efforts to enable the Social Security Administration to receive documents from the federal EHR.

- **Joint HIE/Joint Longitudinal Viewer (JLV) Collaboration:** Throughout the reporting period, the FEHRM continued its facilitation of the joint HIE/JLV Biweekly Collaboration Meeting. This effort enabled DOD and VA senior leaders to review joint HIE and JLV progress, discuss risks and identify future opportunities. Through this collaborative forum, the FEHRM and Departments prioritized and planned for joint HIE improvements, addressed joint HIE technical issues and elevated issues and determined corrective actions.

- **CommonWell Health Alliance:** Following the successful connection of the joint HIE with the CommonWell Health Alliance in October 2020, the majority of patients were successfully matched via auto-enrollment. The FEHRM continues to work with DOD and VA to plan for manual enrollment of the remaining patients, which is expected to go live in August 2021.

Interoperability Modernization Strategy

- **Interoperability Modernization Strategy Supporting Plan (Phase 2):** The Interoperability Modernization Strategy Supporting Plan was distributed to DOD and VA in April 2021.

- **Interoperability Modernization Strategy Performance Measurement Plan (Phase 3):** The combined integrated product team (IPT), consisting of both the Interoperability Modernization IPT and Metrics & Analysis IPT, met in April and June 2021 to review candidate performance measures that track progress toward the objectives identified in the Interoperability Modernization Strategy. The candidate performance measures have been proposed by the benefits, standards, population health and clinical work groups, which met in March through June 2021.

  In Q4 FY2021, the Advisory Group will be briefed on the Performance Measurement Plan activities. Additional performance measures will be identified by the clinical and technical work groups and reviewed by the combined IPT. Upon completion of the work group activities, the DOD and VA subject matter experts, along with the project team, will review the full set of candidate performance measures and prioritize those that most closely align to the Interoperability Modernization Strategy objectives. The combined IPT will meet to approve the final set of performance measures. The Interoperability

Modernization Strategy Performance Measurement Plan document, which will provide details for the final set of performance measures, is projected to be completed by the end of Q4 FY2021.

Interoperability Standards

- **Dental Data Exchange:** In ongoing efforts to establish the exchange of discrete dental observations among dental providers, the FEHRM collaborated with representatives from DOD, VA, American Dental Association (ADA) and the Health Level Seven® International (HL7) community to develop standards for Dental Data Exchange based on HL7's Clinical Document Architecture (CDA) and Fast Healthcare Interoperability Resources (FHIR). In Q3 FY2021, the FEHRM worked with the community to resolve several outstanding publication roadblocks for the new standards and is pursuing publication in Q4 FY2021.

- **HL7 Engagements:** The FEHRM participated in the 2021 May Ballot Cycle by prioritizing ballots for review, coordinating with the DOD and VA, reviewing relevant ballots and submitting votes and comments. The FEHRM also managed the ballot tracking tool to track active ballots for FEHRM, DOD and VA reviewers, planned votes and actual votes. The FEHRM hosted an HL7 ballot coordination meeting with DOD and VA stakeholders to discuss the rationale for negative votes.

  Additionally, the FEHRM successfully hosted the HL7 Government Birds of a Feather (BOF) meeting in conjunction with the HL7 May 2021 Working Group Meeting (WGM) and saw a significant increase in participation compared to past BOF meetings. Representatives from eight federal departments and agencies, plus international consulting, insurance, association and industry groups, comprised the 87 attendees. ONC priorities and strategy, updates on information blocking and HL7 Da Vinci initiatives were presented along with the roundtable discussion from the FEHRM, Centers for Disease Control and Prevention (CDC), DHA and VHA.

  Following the HL7 2021 May Ballot Cycle, the FEHRM completed and distributed the ballot cycle evaluation report, which summarized accomplishments and status for projects and balloting.

- **Consolidated Clinical Document Architecture (C-CDA) Product Management:** C-CDA is the national standard for sharing health summaries across organizations through Carequality, CommonWell and the federal joint HIE. More than 90 million health summaries are exchanged each month. To support the future of C-CDA, the FEHRM developed a three-year product road map for fixing errata, supporting the Office of the National Coordinator for Health Information Technology's (ONC) United States Core Data for Interoperability (USCDI) and migrating to a modern publication framework. In Q3, the FEHRM coordinated with leaders in the HL7 community, including representatives from

major EHR vendors and the ONC, to resolve outstanding implementer feedback on the C-CDA standard, to refine tactical plans for a maintenance release of the C-CDA standard in fall 2021 and to ballot a new version of the C-CDA standard in January 2022 that will support ONC's soon-to-be-released USCDI v2 national health data exchange policy.

- **HL7 Da Vinci Project:** The FEHRM actively evaluated three HL7 Da Vinci use cases: 1) prior authorization support (PAS), 2) notifications (formerly known as alerts) and 3) risk based contract member identification for the purpose of sharing the analysis with our stakeholders upon request. The FEHRM aims to bring use cases to CommonWell and improve HIE use and take use cases from the Departments to influence the HL7 Da Vinci Project and its use cases. Notable events:
  - HL7 Da Vinci Project members and trading partners were granted a HIPAA X12 Exception until April 14, 2024 for the testing of the PAS use case.
  - The HL7 Da Vinci Notifications Work Group presented a demonstration of a subscription model. Notifications are an ONC final rule requirement, and providers are uncomfortable streaming patient admission, discharge and transfer information without an explicit subscription request.

- **Institute of Electrical and Electronic Engineers (IEEE) Engagements:** As a corporate member of the IEEE, the FEHRM assists the Departments in standardizing data exchanges between medical devices, mobile devices, point of care devices, personal health devices and health information systems (i.e., EHR) by contributing to the development of conceptual frameworks and standards and sharing standards information with the Departments for P1752 mHealth and P2933 Clinical Internet of Things Data and Device Interoperability with Trust, Identity, Privacy, Protection, Safety, Security (TIPPSS). Notable events:
  - FEHRM and IEEE Life Science Technical Community developed a collaborative relationship regarding engagement in Transforming the Telehealth Paradigm: Sustainable Connectivity, Accessibility, Privacy, and Security for All.

- **International Standards Organization (ISO) Engagements:** The FEHRM engaged as an active member of the ISO/American National Standards Institute (ISO/ANSI) Technical Committee (TC) 215. The FEHRM accepted ballot invitations and submitted ballot comments for standards and development projects that align with the FEHRM's charter and priorities. The FEHRM continued to evaluate engagements and seek ways to contribute to and influence ISO standards in the near future. Notable events:
  - FEHRM collaborated with ISO and CDC representatives to evaluate and analyze items for inclusion in the Health Informatics—Public Health Emergency Preparedness and Response (PH EP&R) Information System (ISO/AWI 5477) standard currently under development. The PH EP&R Information System, a specialized enterprise system, is designed for the ongoing collection, processing

and use of the operational information to inform situation assessment, decision making and other actions necessary for PH EP&R operations.

ISO 29585—Framework for Healthcare and Related Data Reporting (formerly known as Deployment of a Clinical Data Warehouse): The FEHRM leveraged its influencer and dominant contributor role to negotiate a revised scope and approach that reflects its stakeholders' clinical reporting and associated functions needs. The purpose of the intended standard is to enable better Clinical Data Warehouse (CDW) reporting services that effectively deliver health care information to service a wide range of decision-making and research questions. The FEHRM, in collaboration with the work group, focused on the following: 1) reviewed ISO/TR 22221 Good Principles and Practices for a CDW, 2) reviewed ISO/TS 29585 Deployment of a CDW and 3) is creating an updated data reporting framework for standards balloting.

The FEHRM reviewed and submitted a comment and vote on ISO/TC 215 ballots: ISO/FDIS 27789 Health Informatics—Audit Trails for EHRs (June 15).

- **Key Contributions/External Engagements (Government and Commercial):** The FEHRM engaged with multiple government agencies and industries regarding health analytics and machine learning, data interoperability and social determinants of health in predicting the wellness and health of a community. These events promoted the FEHRM's mission and priorities by enhancing interoperability and standards. FEHRM presentations included discussing community determinants of health with a focus on using U.S. state county-level data to infer the health and wellness of civilian communities and their U.S. military reserve and national guard units at the American Medical Informatics Association (AMIA) 2021 Clinical Informatics Conference (May 18).

- **Office of the National Coordinator for Health Information Technology (ONC) Engagements**: During the reporting period, the FEHRM continued collaboration with ONC stakeholders to further the progress of national and international interoperability standards and the quality of health information exchange required by the Departments. In this effort, the FEHRM participated in numerous ONC engagements, including meetings, webinars and public comment periods to inform their work supporting the 21st Century Cures Act.

  The FEHRM continued representation with Federal Health IT Advisory Committee (HITAC) meetings; the Federal Health IT Coordinating Council (FHIT CC) and USCDI Workgroup. The following are key details of these interactions.
  - Collected, consolidated and adjudicated more than 95 comments from DOD, VA and the FEHRM on the USCDI draft Version 2 and submitted comments to ONC in April 2021.

- Continued participation as a federal member of the ONC's monthly Project US@ initiative to develop and issue a unified, cross-standards development organization, health care industry-wide specification for representing and formatting patient address based on USPS standards. Project US@ Technical Specifications Version 1.0 draft was released in June 2021.
- Hosted FEHRM and ONC coordination meeting in June to share current engagements and potential collaboration opportunities.
- Participated in the two-part ONC webinar Advancing SDOH Interoperability: Enabling Privacy and Consent through Standards and Implementations.
- Participated in the June 2021 Health Information Technology Advisory Committee (HITAC), which focused on updates on United States Core Data for Interoperability (USCDI) Task Force recommendations on expansion process and vote, the Interoperability Standards Priorities (ISP) Task Force recommendations and vote, Health Interoperability Outcomes 2030, Public Health Data Systems (PHDS) Task Force update and public comment.

Additional Q3 FY2021 engagements with key stakeholders included the following:

- The FEHRM hosted the 11th Industry Interoperability Roundtable in May 2021, featuring a senior government leader panel discussion (Government Transformation: Changing the Way We Do Business), an industry panel (Leveraging Health IT During the COVID Pandemic) and program updates from ONC and Centers for Medicare and Medicaid Services (CMS). There were over 300 participants, representing 70 industry organizations and 20 federal agencies.
- The FEHRM continued to support the HL7 Gravity Community Project centered on social determinants of health (SDOH) by participating in biweekly meetings and voting to approve submissions for the stress, intimate partner violence and social isolation domains.
- The FEHRM hosted monthly meetings with CMS to exchange current engagements and discuss potential collaboration opportunities. As a result, the FEHRM and CMS increased agency participation in the CMS Interoperability & Standards Collaborative Forum and the Electronic Health Record Modernization Coordination (EHRM-C) meetings.
- The FEHRM continued participation in the CMS-sponsored Post-Acute Care Interoperability (PACIO) Workgroup and PACIO Project Advance Directive Use Case Subgroup established in Q2 to create FHIR implementation guidance for advance directives information (ADI) interoperability.
- Participated in and supported the Workgroup for Electronic Data Interchange (WEDI), which focuses on health IT efficiencies to improve health information exchange, care quality and cost reduction.

- Engaged with the Indian Health Service, National Security Administration and the National Oceanic and Atmospheric Administration to share information and EHR modernization experience across federal agencies.

Looking ahead to Q4 FY2021, the FEHRM will continue its interoperability efforts and participate as a federal member of the FHIT CC USCDI Task Force to begin work on the USCDI Version 3, as well as continue participation in the ONC Interoperability Standards Advisory Workgroup and the HL7 Gravity Community Project Work Group. During this quarter, the FEHRM also will provide a metrics and interoperability modernization strategy update to the HITAC and at the annual ONC Technical Forum and will coordinate federal comments during ONC's public comment period for the draft USCDI Version 3 content.

Additionally, the FEHRM will host a town hall focusing on HL7 CDA/FHIR Implementation Guides: Dental Data Exchange, with speakers from the Office of the Air Force Surgeon General and DHA.

Lastly, the FEHRM will participate in the HL7 September 2021 Ballot Cycle by reviewing and voting on prioritized ballots; tracking ballots for FEHRM, DOD and VA; engaging in the HL7 WGM with key stakeholders and the HL7 community and hosting the HL7 Government BOF meeting in conjunction with the HL7 WGM.

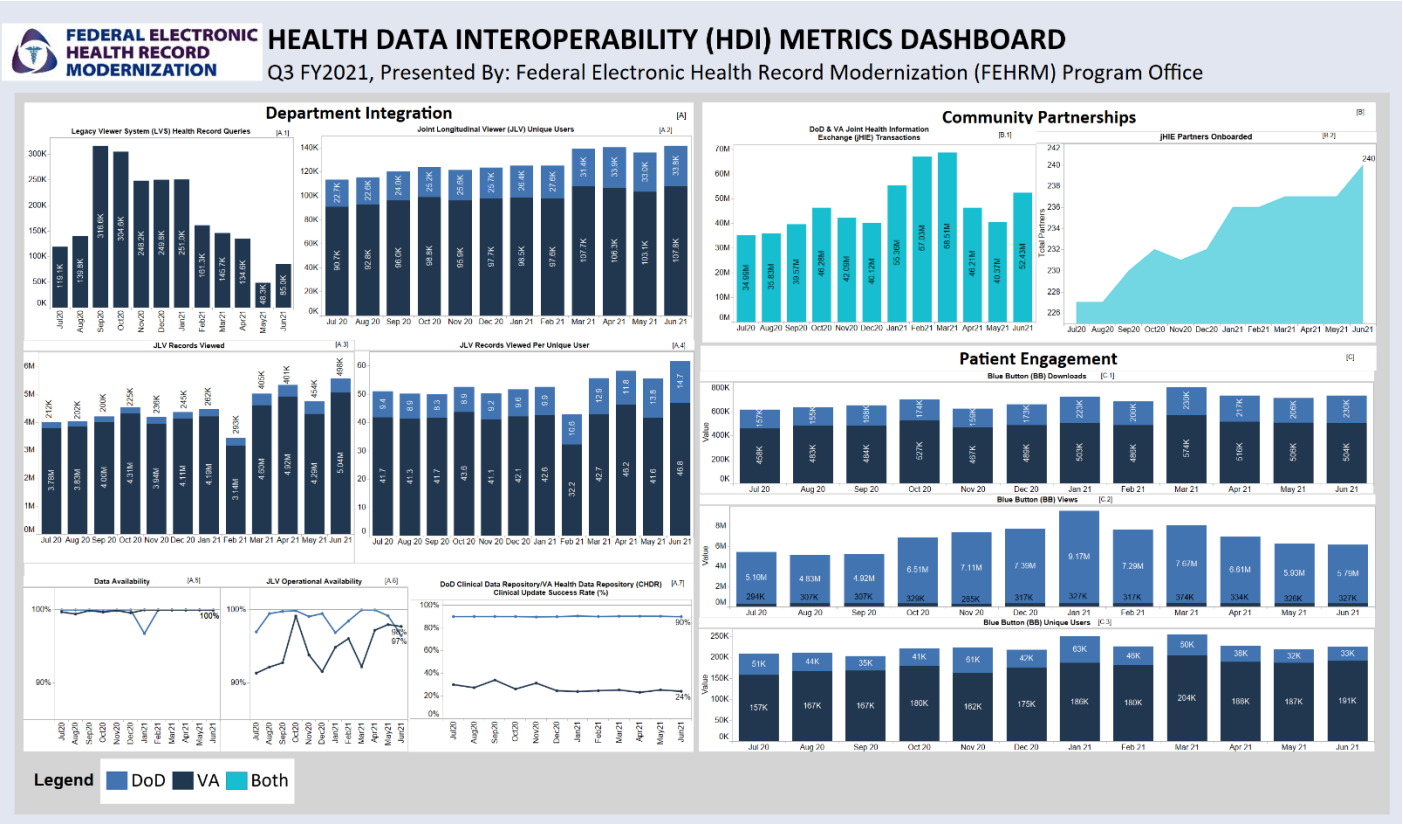
Conclusion

The Departments remain focused on enhancing and measuring health data interoperability with the single, common federal EHR as well as with those of their private sector partners who care for DOD and VA beneficiaries. Enabling health information exchange in the DOD, VA and private sector will serve 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 and VA move forward with their implementation of a seamless EHR system, the FEHRM will continue to 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 Q3 FY2021, the FEHRM, DOD and VA continued to collaborate to monitor baseline Health Data Interoperability (HDI) metrics and the progress toward modernization and enhancement of HDI by both Departments. Each section shows 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 Q3 FY2021 HDI Metrics Dashboard. Detailed explanations of the metric trends follow Figure 1. A snapshot of each individual metric is detailed, noting the change between quarters and any changes to systems that could result in potential impacts (for example, infrastructure outages or patches as well as new capabilities such as the joint HIE).

Figure 1 – Q3 FY2021 HDI Metrics Dashboard



Q3 Highlights: As seen in Table 1, between Q2 FY2021 and Q3 FY2021, quarter over quarter Legacy Viewer System (LVS) (VA) usage, joint Health Information Exchange (HIE) transactions and Blue Button (DOD) usage decreased substantially, and Joint Longitudinal Viewer (JLV) (DOD, VA) usage increased substantially.

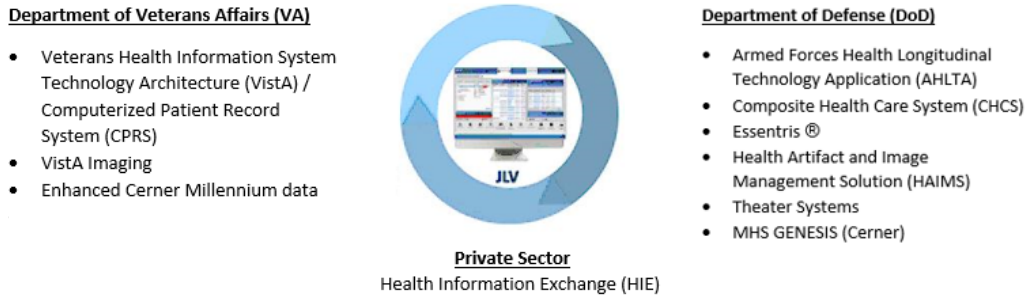
Table 1 – Quarter Highlights

Metrics with a Notable Change in Q3 FY2021	Quarterly Delta	Supporting Information
VA LVS Health Record Queries [Metric A.1]	51.99% decrease from a quarterly total of 558,072 in Q2 FY2021	A VistA patch install at VA clinical sites in April 2021 resulted in a significant drop in queries from VA clinicians seeking access to DOD patient data during the quarter. The issue was corrected in June 2021 and query numbers have since returned to expected levels.
DOD JLV Unique Users [Metric A.2]	17.96% increase from a monthly average of 28,469 in Q2 FY2021	The increase in DOD JLV usage is driven by the deployment of MHS GENESIS and increased training at DOD clinical sites in Wave CARSON+ during Q3 FY2021.
DOD JLV Records Viewed [Metric A.3]	41.04% increase from a quarterly total of 959,580 in Q2 FY2021	
DOD JLV Records Viewed Per Unique User [Metric A.4]	20.64% increase from a monthly average of 11.14 in Q2 FY2021	
VA JLV Records Viewed [Metric A.3]	19.37% increase from a quarterly total of 11,936,738 in Q2 FY2021	The increase in VA JLV usage is driven by greater awareness of JLV in the field and a heightened need to use JLV due to the federal EHR deployment at the Mann-Grandstaff VA Medical Center (VAMC) and the preparation for upcoming deployments in VA's Veterans Integrated Service Network (VISN) 10.
Joint HIE Transactions [Metric B.1]	27.18% decrease from a quarterly total of 190,902,267 in Q2 FY2021	The joint HIE experienced no technical issues that would have greatly impacted the number of transactions sent or received from community partners. The decrease in pre-fetch and other ad hoc transactions is driven by seasonal declines in COVID-19-related appointments.
DOD Blue Button Views [Metric C.2]	24.08% decrease from a monthly average of 8,046,297 in Q2 FY2021	The decrease in DOD Blue Button usage is driven by: • TRICARE Online (TOL) usage declines as the federal EHR is deployed at more DOD clinical sites and patients access their health data in the MHS GENESIS Portal. • Fewer patients access COVID-19 test results using Blue Button's Health Record as COVID-19 vaccination rates amongst Servicemembers and their beneficiaries increase.
DOD Blue Button Unique Users [Metric C.3]	35.42% decrease from a monthly average of 53,075 in Q2 FY2021	

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

1. **Joint Longitudinal Viewer (JLV).** The JLV, released in 2013, is a web-based graphical user interface that was 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 the DOD, VA and Virtual Lifetime Electronic Record (VLER) eHealth Exchange civilian partners within a single application. JLV retrieves clinical data from several 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 civilian network providers who join the eHealth Exchange. 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 or clinic or VAMC.

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, each clinical component data is first standardized to a mutually agreed upon mediating vocabulary that both systems comprehend, and provide decision support, such as drug-allergy or drug-drug interaction checks.

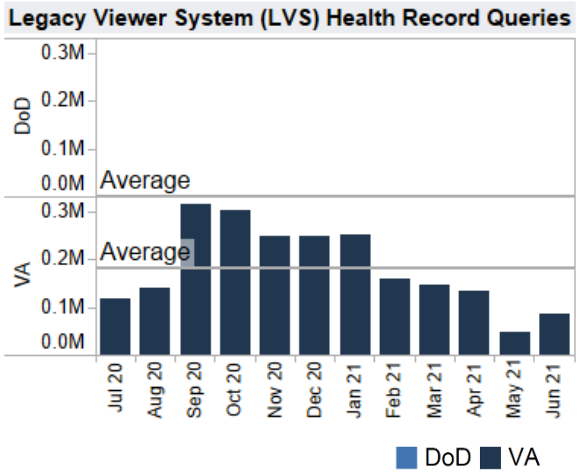
4. **Blue Button.** Blue Button enables patients from DOD and VA to access their personal health data from their EHR, including allergies, laboratory and radiology results, vital signs, and outpatient medications, problem lists and encounters. The new MHS GENESIS Patient Portal also allows TRICARE beneficiaries 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.

Federal EHR. Beginning in 2017, DOD Initial Operational Capability (IOC) sites in the Pacific Northwest went live with MHS GENESIS (the DOD's name for the federal EHR). Subsequent deployments of MHS GENESIS in Waves TRAVIS (Q4 FY2019), NELLIS (Q4 FY2020), and PENDLETON (Q1 FY2021) took place at Military Medical Treatment Facilities in California, Idaho and Nevada respectively. Beginning in October 2017, the federal EHR went live at the first VA IOC sites in the Pacific Northwest and Nevada. VA will resume deployment activities later this fiscal year after its strategic review. End-user metrics regarding the federal EHR will be reported jointly for DOD, VA and USCG in subsequent Interoperability Progress Reports.

Data Sharing Statistics and Updates: The FEHRM, DOD and VA continue to expand HDI by improving upon the more than 5.5 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 June 30, 2021.

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 the less interoperable legacy systems (e.g., Armed Forces Health Longitudinal Technology Application [AHLTA] and Veterans Health Information Systems and Technology Architecture [VistA]) to the federal EHR.

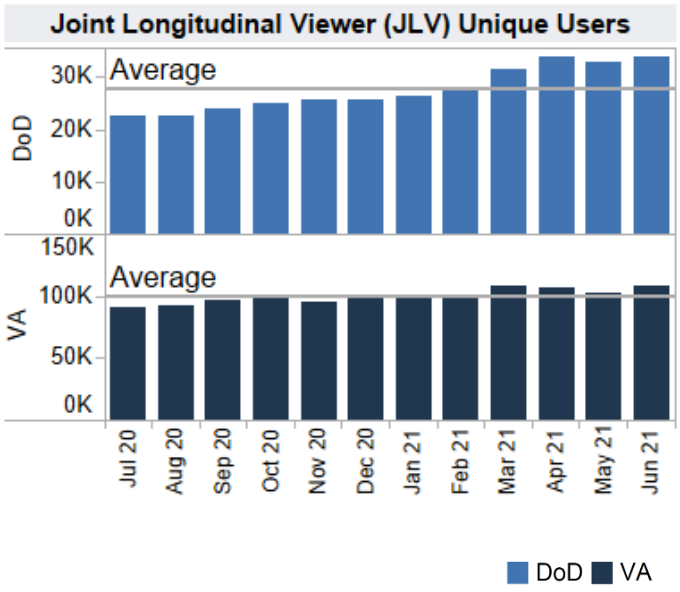


Metric A.1: Legacy Viewer System (LVS) Health Record Queries

Definition

Total number of health record queries made by DOD and VA to the Federal Health Information Exchange/Bidirectional Health Information Exchange (BHIE) Framework database using VistA Web and the Computerized Patient Record System (CPRS) Remote Data View in each month

DOD	Change	Impact Factors
■	DOD discontinued use of the LVS in April 2019, so there are no changes.	The DOD implemented the Agile Core Services/Data Access Layer integration with Data Exchange Service in April 2019 and discontinued use of the LVS.
VA	**Change**	**Impact Factors**
▼	The total number of health record queries decreased by 51.99 percent between the second and third quarters to 267,935 queries.	A VistA patch install at VA clinical sites in April 2021 resulted in a significant drop in queries from VA clinicians seeking access to DOD patient data during the quarter. The issue was corrected in June 2021 and query numbers have since returned to expected levels.

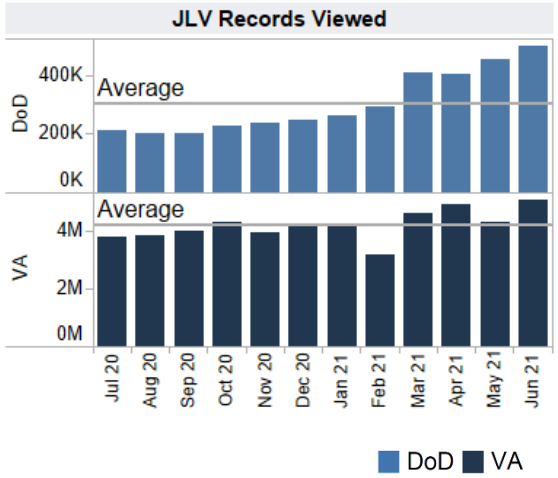


Metric A.2: JLV Unique Users

Definition

Monthly average number of active unique users (i.e., a user who has logged on during a specific month) recorded by the JLV for DOD and VA

DOD	Change	Impact Factors
▲	The average monthly number of active JLV users increased by 17.96 percent between the second and third quarters to 33,581.	The increase in DOD JLV usage is driven by the deployment of MHS GENESIS and increased training at DOD clinical sites in Wave CARSON+ during Q3 FY2021.
VA	**Change**	**Impact Factors**
▲	The average monthly number of active JLV users increased by 4.38 percent between the second and third quarters to 105,709.	There are no factors of note.

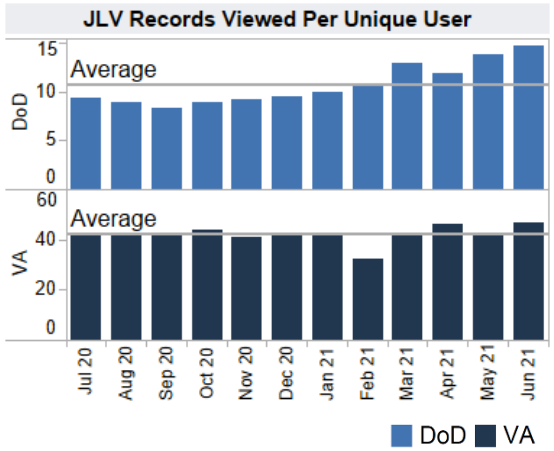


Metric A.3: JLV Records Viewed

Definition

Monthly total number of patient records viewed using the JLV for DOD and VA

DOD	Change	Impact Factors
▲	The total quarterly number of JLV records viewed increased by 41.04 percent between the second and third quarters to 1,353,363.	The increase in DOD JLV usage is driven by the deployment of MHS GENESIS and increased training at DOD clinical sites in Wave CARSON+ during Q3 FY2021.
VA	**Change**	**Impact Factors**
▲	The total quarterly number of JLV records viewed increased by 19.37 percent between the second and third quarters to 14,248,296.	The increase in VA JLV usage is driven by greater awareness of JLV in the field and a heightened need to use JLV due to the federal EHR deployment at the Mann-Grandstaff VAMC and the preparation for upcoming deployments in VA's VISN 10.

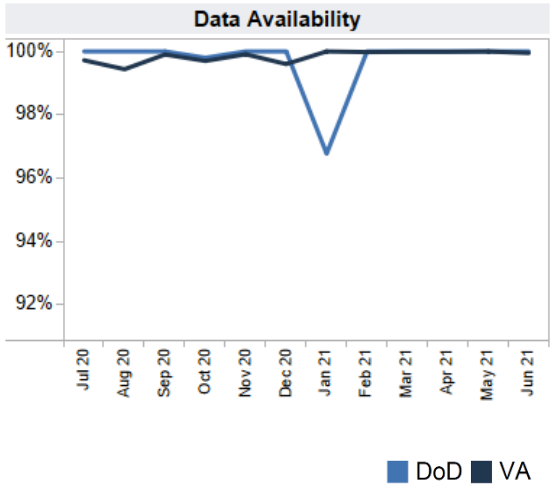


Metric A.4: JLV Records Viewed Per Unique User

Definition

Monthly average number of patient records viewed using the JLV for DOD and VA per active unique user

DOD	Change	Impact Factors
▲	The average monthly number of JLV records viewed per unique user increased by 20.64 percent between the second and third quarters to 13.44.	The increase in DOD JLV usage is driven by the deployment of MHS GENESIS and increased training at DOD clinical sites in Wave CARSON+ during Q3 FY2021.
VA	**Change**	**Impact Factors**
▲	The average monthly number of JLV records viewed per unique user increased by 14.62 percent between the second and third quarters to 44.89.	There are no factors of note.



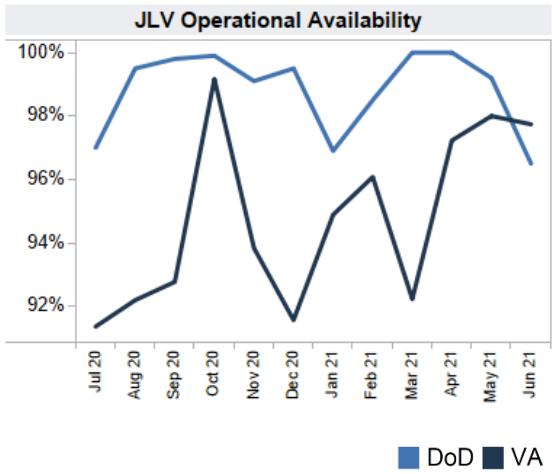
Metric A.5: Data Availability

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 – Percentage of time during the month that VistA Data Services was operational (i.e., with no errors and available to both DOD and VA users) in all JLV environments (i.e., Earth Observation Cloud, Non-Secure Internet Protocol Router and Medical Community of Interest)

DOD	Change	Impact Factors
▲	The average monthly data availability increased by 1.08 percentage points between the second and third quarters to 100.00 percent.	There are no factors of note.
VA	**Change**	**Impact Factors**
▼	The average monthly data availability decreased by 0.01 percentage points between the second and third quarters to 99.98% percent.	There are no factors of note.



Metric A.6: JLV Operational Availability

Definition

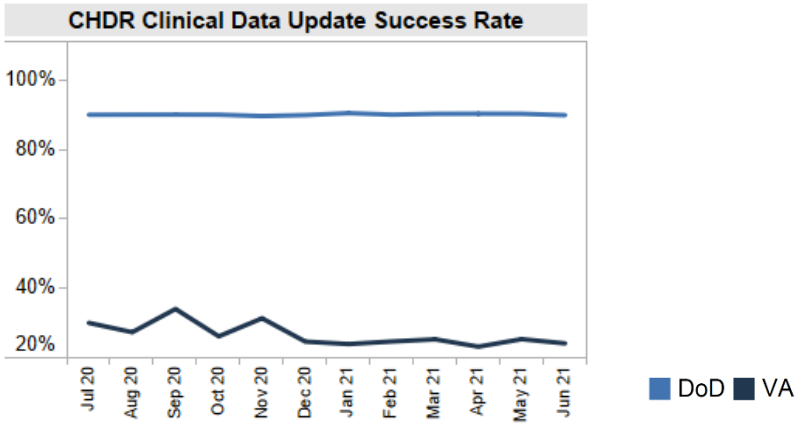
The percentage of time during the month that the JLV was available for log in and functionally operational by DOD and VA users (i.e., available for users to conduct a patient search and to access both DOD and VA EHR data in the cloud environment)

DOD	Change	Impact Factors
▲	The average monthly operational availability increased by 0.1 percentage points between the second and third quarters to 98.57 percent.	There are no factors of note.
VA	**Change**	**Impact Factors**
▲	The average monthly operational availability increased by 3.26 percentage points between the second and third quarters to 97.66 percent.	There are no factors of note.

Metric A.7: CHDR Clinical Data Update Success Rate from DOD to VA and VA to DOD

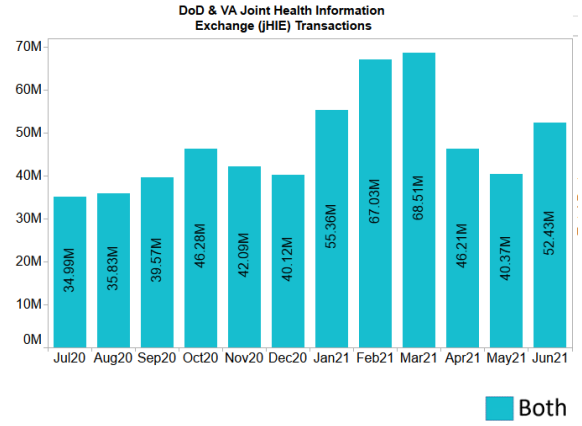
Definition
Percentage of CHDR clinical update messages with data (allergy or pharmacy) successfully processed (A successful process occurs when the sending agency receives a response from the receiving agency indicating successful receipt, translation and storage of clinical data.)

DOD	Change	Impact Factors
▼	The average monthly CHDR clinical data update success rate had a decrease of 0.10 percentage points from 90.32 percent in quarter two to 90.22 percent in quarter three.	There are no factors of note.
VA	**Change**	**Impact Factors**
▼	The average monthly CHDR clinical data update success rate had a decrease of 0.41 percentage points from 24.65 percent in quarter two to 24.24 percent in quarter three.	There are no factors of note.



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.



Metric B.1: Joint HIE Transactions

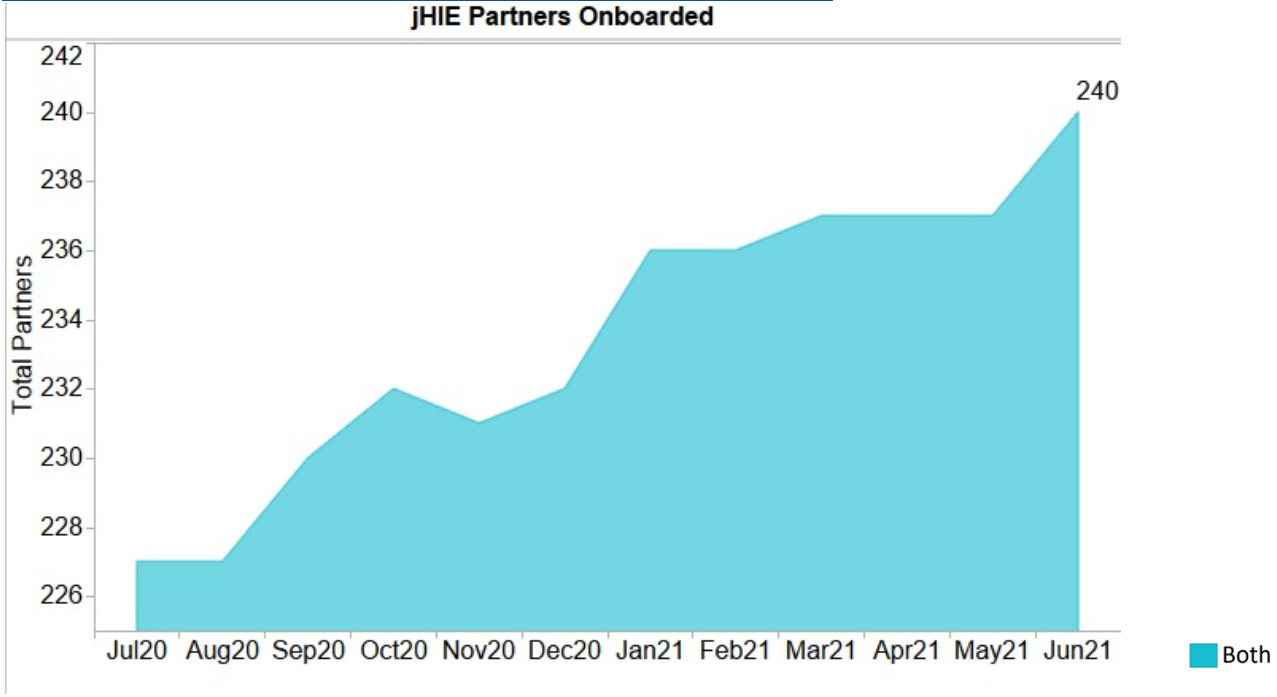
Definition

Monthly count of Consolidated Clinical Document Architecture, C32 or C62 (document architecture that facilitates interoperability of health data between EHR systems) documents exchanged between the Departments and private partners

DOD/VA	Change	Impact Factors
▼	The total number of joint HIE transactions decreased by 27.18 percent between the second and third quarters to 139,010,611.	The joint HIE experienced no technical issues that would have greatly impacted the number of transactions sent or received from community partners. The decrease in pre-fetch and other ad hoc transactions is driven by seasonal declines in COVID-19-related appointments.

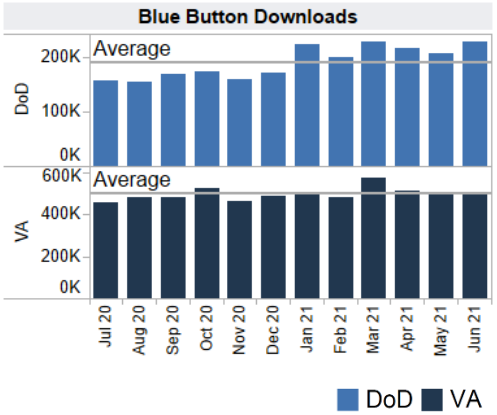
Metric B.2: Joint HIE Partners Onboarded

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)		
DOD/VA	**Change**	**Impact Factors**
▲	Three additional joint HIE partners were onboarded between the second and third quarters, bringing the total to 240.	There are no factors of note.



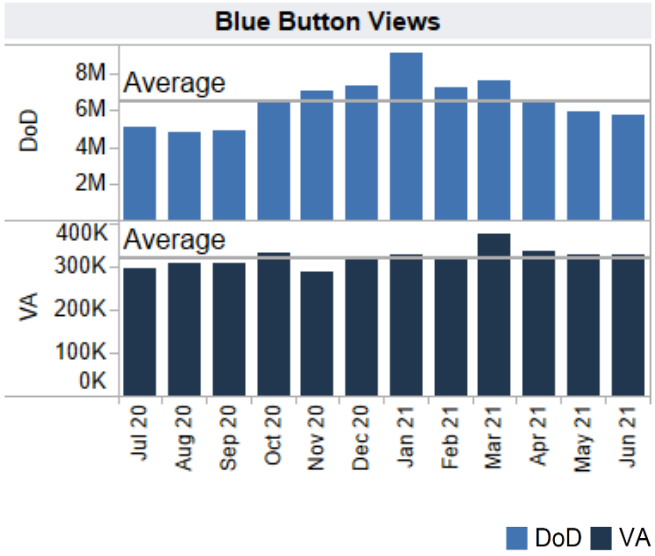
Category C: Patient Engagement

Value Statement: Blue Button has served 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.



Metric C.1: Blue Button Downloads

Definition		
Total number of data downloads (e.g., PDF, text) generated by end users per month		
DOD	**Change**	**Impact Factors**
▲	The total quarterly number of Blue Button downloads increased by 0.04 percent between the second and third quarters to 652,926.	There are no factors of note.
VA	**Change**	**Impact Factors**
▼	The total quarterly number of Blue Button downloads decreased by 2.35 percent between the second and third quarters to 1,526,069.	There are no factors of note.

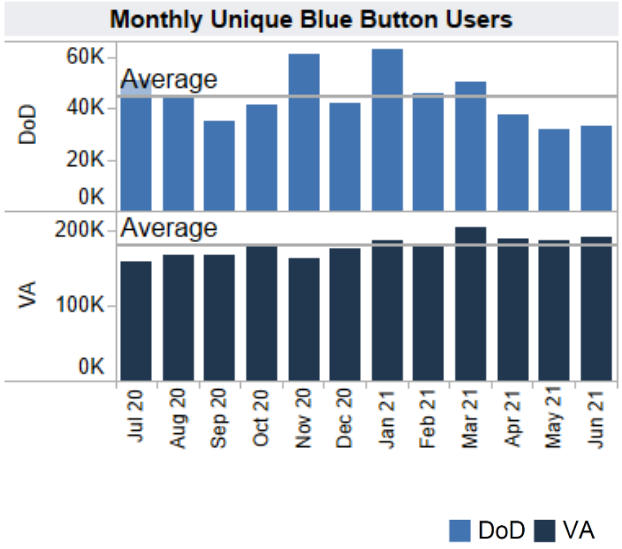


Metric C.2: Blue Button Views

Definition

Average number of views generated by end users per month

DOD	Change	Impact Factors
▼	The average quarterly number of Blue Button views decreased by 24.08 percent between the second and third quarters to 6,108,534.	The decrease in DOD Blue Button usage is driven by: • TRICARE Online (TOL) usage declines as the federal EHR is deployed at more DOD clinical sites and patients access their health data in the MHS GENESIS Portal. • Fewer patients access COVID-19 test results using Blue Button's Health Record as COVID-19 vaccination rates amongst Servicemembers and their beneficiaries increase.
VA	**Change**	**Impact Factors**
▼	The average quarterly number of Blue Button views decreased by 2.97 percent between the second and third quarters to 329,222.	There are no factors of note.



Metric C.3: Monthly Unique Blue Button Users

Definition

Number of unique Blue Button users within a month

DOD	Change	Impact Factors
▼	The average monthly number of Blue Button unique users decreased by 35.42 percent between the second and third quarters to 34,275.	The decrease in DOD Blue Button usage is driven by: • TOL usage declines as the federal EHR is deployed at more DOD clinical sites and patients access their health data in the MHS GENESIS Portal. • Fewer patients access COVID-19 test results using Blue Button's Health Record as COVID-19 vaccination rates amongst Servicemembers and their beneficiaries increase.
VA	**Change**	**Impact Factors**
▼	The average monthly number of Blue Button unique users decreased by 0.66 percent between the second and third quarters to 188,809.	There are no factors of note.