



FEHRM

Interoperability Progress Quarterly Report

SECOND QUARTER, FISCAL YEAR 2021

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Approved for public release: distribution unlimited

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 second quarter of FY2021 (FY2021 Q2), the FEHRM continued to focus on operationalization and convergence in its mission to provide a single, common federal electronic health record (EHR). This operationalization and convergence strategy unified efforts 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 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.

For Q2 FY2021, the JSaAB approved 391 weekly items and 12 daily go-live items that surfaced during DOD Wave SAN DIEGO, and 12 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 14 times during Q2 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 Q1, the FDG formally requested that the PMO technical communities 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 late Q1 and early Q2 of FY2021, the FDG launched 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.

- **End-User Engagement:** During Q2 FY2021, the CMIO continued collaboration with the DOD and VA patient and clinician satisfaction subject matter experts (SMEs) 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: 1. The KLAS Arch Collaborative for Clinician Satisfaction, and 2. 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 Q2 FY2021 surveys for both DOD and VA.

- **First Person Release of Information (ROI):** In Q2 FY2021, the FEHRM CMIO Team supported the Health Informatics Business Line Health Informatics and Policy Working Group (HIBL/HIPWG) on their delegated task to evaluate current policies that govern Patient Initiated ROI. Engaged stakeholders include VHA, VA Health Information Management (HIM), DOD Patient Administration Division (PAD), Office of General Counsel (OGC) and Cerner.

The Patient Initiated ROI effort resulted in the issuance of a Joint Office of General Counsel (OGC) Opinion on whether each Department, when requested by a Veteran, Service Member or Beneficiary, may release to them a copy of their entire medical record from the joint environment. The ROI Working Group is developing a Business Associate Agreement between DOD and VA in accordance with the February 2021 OGC Opinion. This is due Q3 FY2021. As this project moves into the execution phase, policy review and agreements on the joint medical record requirements are expected by the end of Q4 FY2021.

- **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 WG, and DOD/VA Sharing Office. This group intends to align the Departments on requirements for business operations in the following areas: referrals, billing and payment.
- **Joint Enclave Data Management:** During the Q2 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.

The FEHRM established the Codeset Management Group (CSMG) as a joint DOD/VA code set/value resolution mechanism for joint workflows with common code sets/values. The FEHRM Terminology group successfully ratified the Federated Interagency Terminology Service (FITS) Charter in February 2021. This group is continuing to engage with the vendor to jointly review and manage critical terminologies such as medications, labs and document types.

During Q1 and Q2 FY2021, the FEHRM 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.

- **Joint Enclave Management:** 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. Sessions included Go-Live Lessons Learned, VA OEHRM and DOD Healthcare Management System Modernization (DHMSM) Joint Cybersecurity Team (ODJCT) Joint Cyber Guide; Identity/Demographic Management Updates for Improved Patient Customer Service; Shared Architecture Between OEHRM and DHMSM; New Build/Domains Alignment (Follow On); and Technology Roadmap.

In addition, EMOC partners facilitated a series of discussions to enable the Enterprise Operations Center (EOC) to prepare all parties for the intense schedule of go-live activities through FY2021. The EOC continued to support cross-organizational collaboration and executive level reporting on the Federal Enclave and ecosystem during federal go-live events.

As a result of the ongoing functional-technical collaboration, the EMOC also 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 associated critical milestones. This effort serves 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.

- **Joint/Sharing Sites Implementation:** In Q2 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) colleagues, led the review of completed data collection workbooks, categorized sharing sites according to an agreed-upon criteria and identified a set of prioritized integrated sites (12 VA facilities and 14 DOD facilities, not including the James A. Lovell Federal Health Care Center [FHCC]) requiring further analysis).

The FEHRM, DHA HI and VHA OHI engaged these sharing sites in discovery assessments to gain a more accurate understanding of the nature of their current sharing arrangements and patient encounter touchpoints. Based on this analysis, the FEHRM, DHA HI and VHA OHI recommend continued asynchronous deployment, with mitigation activities, for these sites. Initial observations were shared with EHRM program offices at the April Electronic Health Record Modernization Coordination (EHRM-C) meeting, with final site reports and a Joint Summary Report to be completed and shared with EHRM program offices in Q3 FY2021.

Further, 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).

- **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 USCG operational requirements. During Q2 FY2021, the FEHRM supported the implementation

of Capability Block 4.0 (January 22, 2021) and the DOD's go-live of Wave SAN DIEGO (March 2, 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 and the option to bypass the joint HIE cache to send new patient discoveries and documents queried and received to all external partners. The FEHRM also continued to supported efforts to enable the Social Security Administration to receive documents from the federal EHR.
- **Joint HIE/Joint Longitudinal Viewer (JLV) Collaboration:** The FEHRM continued to facilitate the joint HIE/JLV Biweekly Collaboration Meeting, enabling DOD and VA senior leaders to review joint HIE and JLV progress, discuss risks and identify future opportunities. Working collaboratively through this forum, the FEHRM and the Departments prioritized and planned for joint HIE improvements; elevated issues and determined corrective actions; and addressed joint HIE technical issues.
- **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 Advisory Group met in January 2021 to review the existing DOD/VA and departmental initiatives the Integrated Product Team (IPT) of DOD and VA SMEs had identified as aligning to the Interoperability Modernization Strategy goals and objectives. The FEHRM incorporated the advisory group's feedback and finalized the Interoperability Modernization Strategy Supporting Plan. The FEHRM Executive Committee approved the Supporting Plan in March 2021, and it will be distributed to DOD and VA in April 2021.
- **Interoperability Modernization Strategy Performance Measurement Plan (Phase 3):** To develop performance measures that enable tracking of progress toward the objectives identified in the Interoperability Modernization Strategy, the FEHRM engaged both the Interoperability Modernization IPT and Metrics and Analysis IPT. The FEHRM hosted the first combined IPT meeting in February 2021, sharing the overall approach and plan with the IPT members, with a follow-up meeting in March 2021 to launch a

series of work groups based on areas of expertise (e.g., benefits, clinical, population health, standards and technical). The work groups will meet throughout Q3 and Q4 to review the supporting plan initiatives in their areas and identify appropriate performance measures.

Interoperability Standards

- **Dental Data Exchange:** The FEHRM pioneered a unique effort to develop the exchange of discrete dental observations among dental providers. While some dental EHRs implemented the Consolidated Clinical Document Architecture (C-CDA) for data exchange, it was built primarily for medical care and did not include the structured data elements necessary for use by dental providers. The FEHRM convened 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).

Following the HL7 September 2020 ballot cycle, the FEHRM completed ballot reconciliation for both CDA and FHIR guides, resolving all outstanding comments received from the HL7 community. Publication of two Dental Data Exchange standards for sharing computable dental findings across DOD, VA and private sector providers is expected in Q3 FY2021. Publication of these standards will enhance the patient record and facilitate readiness assessments. The FEHRM coordinated with the U.S. Air Force Chief Medical Information Officer and dental leads across the Services throughout Q2 FY2021 to plan pilot implementations and continued to lead collaborative efforts with organizations in the dental space, including:

- U.S. Air Force
 - Epic's Wisdom
 - Henry Schein Dentrax
 - DOD, VA and affiliated contractors
 - VA—Document Storage Systems (DSS)
 - DOD—Corporate Dental System (CDS)
 - DOD—Henry Schein Dentrax
- **HL7 Engagements:** The FEHRM participated in the 2021 January Ballot Cycle by prioritizing ballots for review, 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 HL7 coordination meeting with DOD and VA stakeholders to discuss the rationale for negative votes.

Additionally, the FEHRM hosted the HL7 Government Birds of a Feather (BOF) meeting in conjunction with the HL7 January 2021 Working Group Meeting (WGM). During this activity, 66 attendees from eight federal departments and agencies plus 18 international, consulting, insurance, association and industry groups communicated their priorities, goals, initiatives and collaboration opportunities.

During the reporting period, the FEHRM also participated in the HL7 Jira balloting pilot group as a tester to determine the feasibility of Jira as the sole ballot comment tool for the May 2021 Ballot Cycle. The new Jira tool supports importing ballot results from spreadsheets. The tool is developed for balloters to import content from spreadsheets themselves (and be responsible for ensuring the spreadsheet imports cleanly) and is one of HL7's highlighted priorities moving forward. Following the HL7 2021 January Ballot Cycle, the FEHRM successfully developed and distributed the ballot cycle evaluation report, which summarized accomplishments and status for projects and ballot outcomes.

- **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 for a three-year product road map for fixing errata, supporting the Office of the National Coordinator for Health Information Technology's United States Core Data for Interoperability (USCDI), and migrating to a modern publication framework. The road map was approved by the HL7 Structured Documents Workgroup in January 2021. The USCDI, a standardized set of health data classes and constituent data elements for nationwide, interoperable health information exchange, also includes all clinical domains such as observations, patient history, encounters and immunizations. Prior to the FEHRM taking responsibility, HL7 had over 200 issues with no plan to resolve. These open issues impact every certified EHR in the nation. The FEHRM will prioritize and resolve available issues with input from the HL7 community to prepare for the next release.
- **HL7 Da Vinci Project:** The FEHRM actively monitored and tracked the HL7 Da Vinci use cases (prior authorization support [PAS], notifications [formerly known as alerts] and member identification). The FEHRM aims to: 1. Bring use cases to CommonWell and improve HIE use, and 2. Take use cases from the Departments to influence the HL7 Da Vinci Project and use cases.
- **Institute of Electrical and Electronic Engineers (IEEE)/ International Standards Organization (ISO) Engagements:** The FEHRM engaged as an active member of the IEEE and 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 aligned 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. The FEHRM reviewed and submitted a comment and vote on ISO/FDIS 13131—Health Informatics—Telehealth Services—Quality Planning Guidelines (March 15).

- **Key Contributions/External Engagements (Government and Commercial):** The FEHRM Standards Lead presented for multiple government agencies and industries regarding health analytics and machine learning (ML); 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. Events the FEHRM presented at include the ATARC 2021 Artificial Intelligence Data Analytics Virtual Summit (January 19) and the Colibra Digital Government Summit (March 4).

The FEHRM also submitted and had accepted in February 2021 a poster abstract to the American Medical Informatics Association (AMIA) for the 2021 Clinical Informatics Conference (CIC) to discuss 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.

- **Office of the National Coordinator for Health Information Technology (ONC) Engagements:** During Q2 FY2021, the FEHRM continued to collaborate with ONC stakeholders to further the progress of national and international interoperability standards. The FEHRM participated in numerous ONC engagements, including meetings, webinars and public comment periods to inform their work supporting the 21st Century Cures Act Trusted Exchange Framework and Common Agreement provisions outlined in Section 4003 of the law.

In addition, the FEHRM continued representation with Federal Health IT Advisory Committee (HITAC) meetings; the Federal Health IT Coordinating Council (FHIT CC); USCDI Workgroup; the Trusted Exchange Framework and Common Agreement (TEFCA) Federal Workgroup; and HITAC Annual Report Workgroup meetings. The FEHRM also joined the new ONC Project US@ Workgroup established in Q2. The following are key details of these interactions:

- Coordinated more than 95 comments from the departments on ONC's USCDI Version 2 document planned for submission to ONC in Q3.
- Participated as a federal member in the new ONC initiative, Project US@, to develop and issue a unified, cross-standards development organization (SDO), health care industry-wide specification for representing and formatting patient addresses, which is a key element used for patient matching and linking health records.
- Hosted FEHRM Interoperability and ONC Coordination quarterly meetings to share FEHRM and ONC current engagements and potential collaboration opportunities.

- Attended and participated in various sessions during the March 29-30 ONC Annual Meeting.
- Hosted a virtual FEHRM Town Hall on February 11, 2021 on “The Role of Predictive Analytics in Assessing and Improving Community Health and Wellness” with more than 75 participants.
- Participated in ONC Webinars: Understanding ONC’s Draft USCDI Version 2 and SVAP (March 18) and Information Blocking FAQs (February 4).
- Coordinated courtesy federal review of the pre-publication 2021 ISA Reference Edition (January 5).
- Coordinated reviews of social determinants of health domains (SDOH), including inadequate housing, housing instability and transportation instability and provided more than 150 comments for consideration by the HL7 Gravity Project.

Additional key Q2 FY2021 engagements with key stakeholders included the following activities:

- Served as keynote speakers on consolidating military and Veteran health care and on a panel on modernizing medical records and health informatics at the GovernmentCIO Health IT: New Horizons in Medicine event on January 28, 2021.
- Participated in monthly meetings with Centers for Medicare and Medicaid Services (CMS) to discuss standardized patient assessment data elements data dictionary, CMS Patient Access and Provider Directory APIs and Patient Access Final Rule.
- Joined the new CMS-sponsored Post-Acute Care Interoperability (PACIO) Workgroup and PACIO Project Advance Directive Use Case Subgroup established in Q2.
- Engaged with the Indian Health Service and the National Oceanic and Atmospheric Administration (NOAA) to share information and EHR modernization experience across federal agencies.

Looking ahead to Q3 FY2021, the FEHRM will continue its interoperability efforts and participate as a federal member of the FHIT CC USCDI Task Force, beginning work on USCDI Version 3 and the ONC Interoperability Standards Advisory Workgroup. During this quarter, the FEHRM will also provide a metrics and interoperability modernization strategy update to the HITAC, and will submit coordinated federal comments to ONC’s public comment period for USCDI Version 2 content.

Additionally, the FEHRM will host a FEHRM Industry Roundtable featuring a panel discussing how health IT was leveraged in the lifecycle of COVID tracking and a Town Hall to discuss the HL7 dental implementation work between the Departments.

Further, the FEHRM will present a poster at the AMIA Clinical Informatics Conference.

The FEHRM will participate in the monthly CMS-sponsored Interoperability and Standards Collaborative Forum with CMS and ONC to identify shared coordination opportunities (i.e., tri-agency announcements), and will coordinate with the U.S. Air Force Chief Medical Information Officer and dental leads across the Services to execute pilot implementations of the CDA and FHIR Dental Data Exchange standards.

Lastly, the FEHRM will participate in the HL7 May 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 Government BOF meeting on May 26 in conjunction with the HL7 WGM.

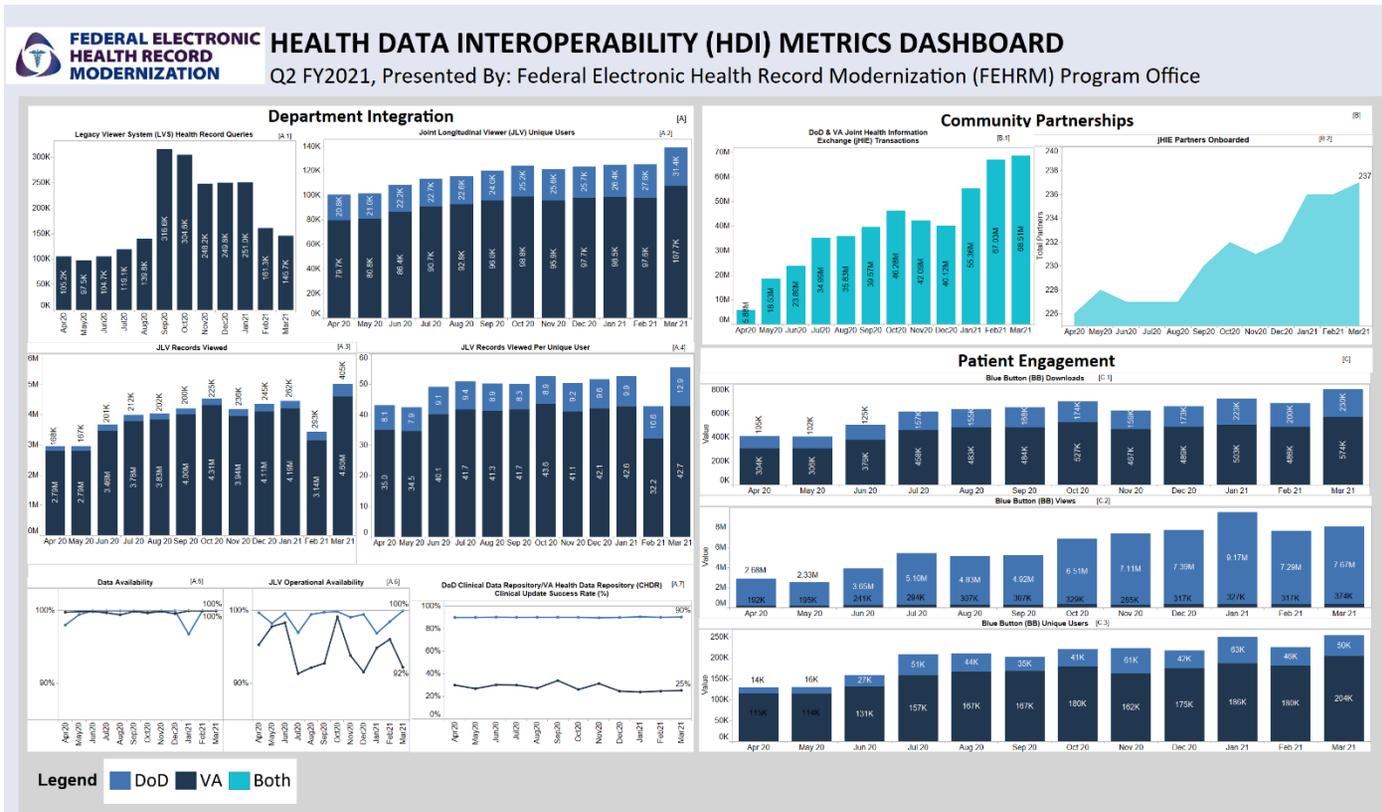
Conclusion

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 Q2 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 Q2 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 – FY2021 Q2 HDI Metrics Dashboard



Q2 Highlights: As seen in Table 1, between FY2021 Q1 and FY2021 Q2, quarter over quarter Legacy Viewer System (LVS) (VA) usage decreased substantially and Joint Longitudinal Viewer (JLV) (DOD), joint Health Information Exchange (HIE), and Blue Button (DOD) usage increased substantially.

Table 1 – Quarter Highlights

Metrics with a Notable Change in FY2021 Q2	Quarterly Delta	Supporting Information
VA LVS Health Record Queries [Metric A.1]	30.46% decrease from a quarterly total of 802,556 in FY2021 Q1	The decrease in the total number of health record queries by VA users was driven by planned downtime to address duplicate records in MedRec (enables practitioners to compare similar medications side by side), which is connected to Computerized Patient Record System (CPRS) and queries the Bidirectional Health Information Exchange (BHIE) using the VistA Integration Adapter (VIA).
DOD JLV Records Viewed [Metric A.3]	35.82% increase from a quarterly total of 706,532 in FY2021 Q1	The increase in the number of JLV records viewed and JLV records viewed per unique user is driven in part by a 15.78% increase in the total number of DOD users registered in JLV.
DOD JLV Records Viewed Per Unique User [Metric A.4]	20.56% increase from a monthly average of 9.24 in FY2021 Q1	
Joint Health Information Exchange (HIE) [Metric B.1]	48.58% increase from a quarterly total of 128,487,546 in FY2021 Q1	The increase in the total number of joint HIE transactions was driven by: <ul style="list-style-type: none"> • An increase in appointments at both DOD Military Medical Treatment Facilities (MTFs) and VA Medical Centers (VAMCs), causing an increase in pre-fetch joint HIE transactions. • An increase in JLV usage from MHS GENESIS and VA OEHRM wave deployments. • An increase in JLV usage from JLV training and increased awareness of joint HIE capabilities.
DOD Blue Button Downloads [Metric C.1]	28.97% increase from a quarterly total of 506,049 in FY2021 Q1	The increase in the number of Blue Button Downloads was driven by: <ul style="list-style-type: none"> • Patients accessing their COVID-19 test results using Blue Button’s Health Record. • TRICARE Online (TOL) gaining nearly 10k new users per week during FY2021 Q2. • Patients accessing their health records from the ‘legacy EHR’ (Armed Forces Health Longitudinal Technology Application [AHLTA]) as their places of care transition to MHS GENESIS. Some patients believe they need the historical records as their provider team is using a new system. • Patients using Blue Button as verification of receiving their COVID-19 vaccination in the immunization displays.

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

1. **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 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, 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.

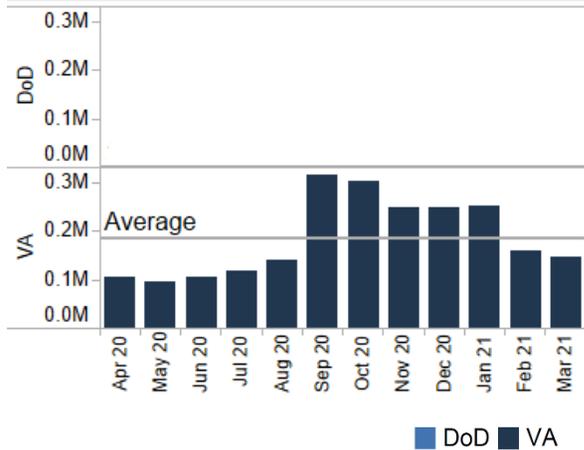
5. **Federal EHR.** Beginning in 2017, DOD Initial Operational Capability (IOC) sites in the Pacific Northwest went live with MHS GENESIS (the DOD's name for the federal EHR). Subsequent deployments of MHS GENESIS in Waves TRAVIS (FY2019 Q4), NELLIS (FY2020 Q4), and PENDLETON (FY2021 Q1) took place at MTFs 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 the Department of Homeland Security's U.S. Coast Guard (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 5.0 million patient records currently shared monthly between the two Departments, as defined by the total number of JLV records viewed by the Departments reported as of March 31, 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 legacy systems (e.g., AHLTA and VistA) to the federal EHR.

Legacy Viewer System (LVS) Health Record Queries

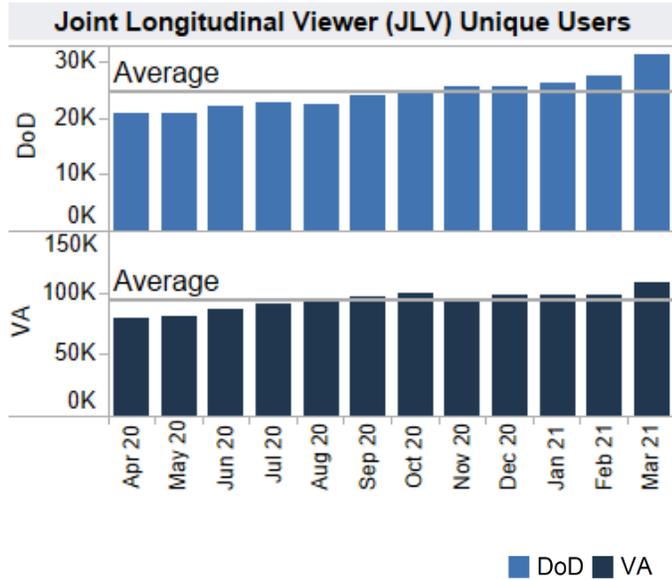


Metric A.1: Legacy Viewer System (LVS) Health Record Queries

Definition

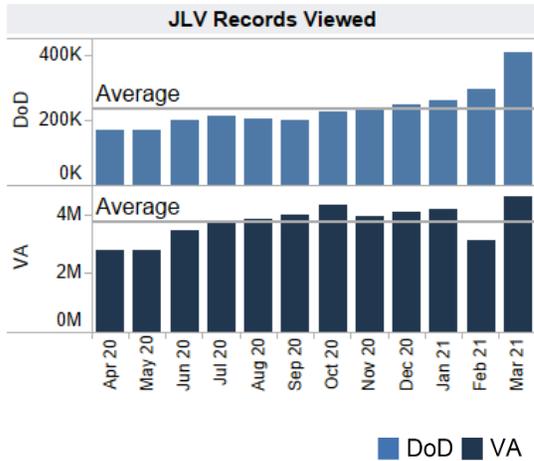
Total number of health record queries made by DOD and VA to the Federal Health Information Exchange/BHIE Framework database using VistA Web and the CPRS Remote Data View in each month

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 30.46 percent between the first and second quarters to 558,072 queries.	The decrease in the total number of health record queries by VA users was driven by planned downtime to address duplicate records in MedRec (enables practitioners to compare similar medications side by side), which is connected to CPRS and queries the BHIE using the VIA.

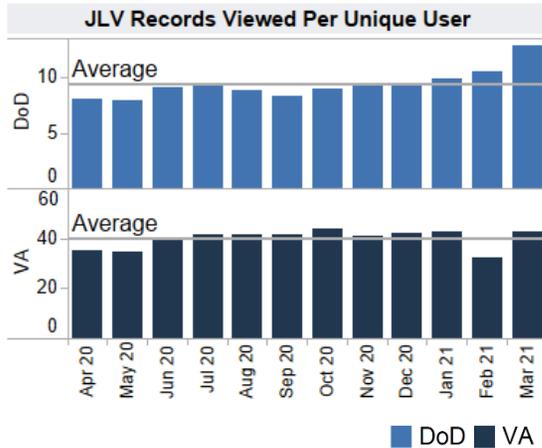


■ DoD ■ VA

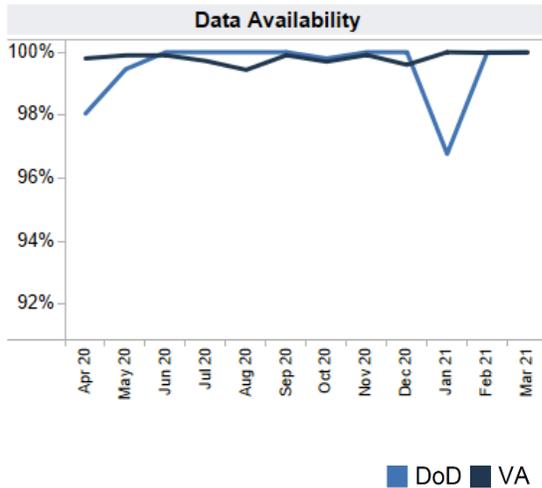
Metric A.2: JLV Unique Users		
Definition		
Monthly average number of active unique users (i.e., a user who has logged on during a specific month) recorded by the JLV for DOD and VA		
DOD	Change	Impact Factors
▲	The average monthly number of active JLV users increased by 11.72 percent between the first and second quarters to 28,469.	The increase in the number of JLV records viewed is driven in part by a 15.78% increase in the total number of DOD users registered in JLV.
VA	Change	Impact Factors
▲	The average monthly number of active JLV users increased by 3.91 percent between the first and second quarters to 101,629.	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 35.82 percent between the first and second quarters to 959,580.	The increase in the number of JLV records viewed is driven in part by a 15.78% increase in the total number of DOD users registered in JLV.
VA	Change	Impact Factors
▼	The total quarterly number of JLV records viewed decreased by 3.41 percent between the first and second quarters to 11,936,738.	There are no factors of note.



Metric A.4: JLV Records Viewed Per Unique User		
Definition		
Monthly 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 20.56 percent between the first and second quarters to 11.14.	The increase in the number of patient records viewed per unique user is driven in part by a 15.78% increase in the total number of DOD users registered in JLV.
VA	Change	Impact Factors
▼	The average monthly number of JLV records viewed per unique user decreased by 7.32 percent between the first and second quarters to 39.16.	There are no factors of note.



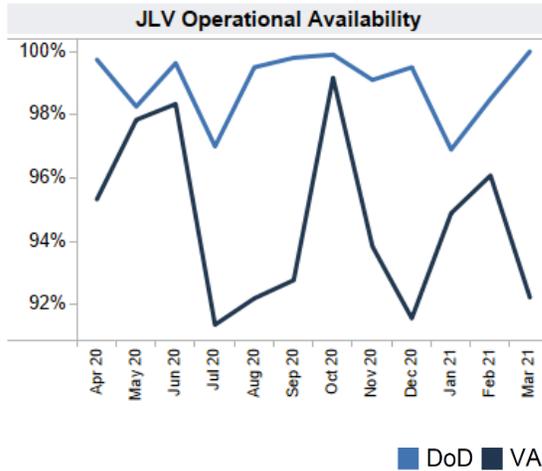
Metric A.5: Data Availability

Definition

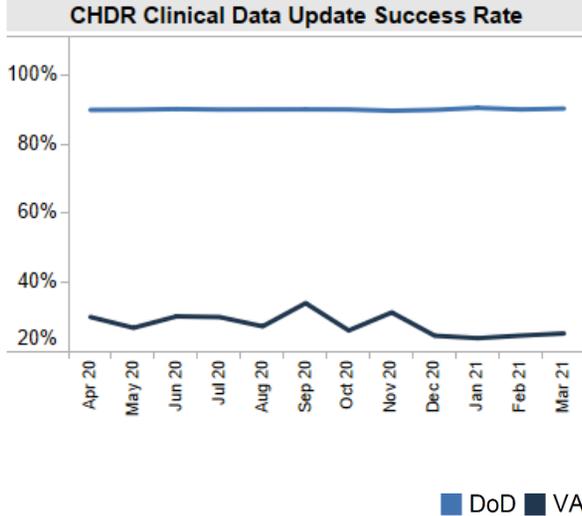
DOD – The percentage of time the Data Exchange Service is available on the data server for all the sites located in the data centers in support of DOD-to-VA HIE

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 decreased by 1.01 percentage points between the first and second quarters to 98.92 percent.	There are no factors of note.
VA	Change	Impact Factors
▲	The average monthly data availability increased by 0.25 percentage points between the first and second quarters to 99.99% percent.	There are no factors of note.



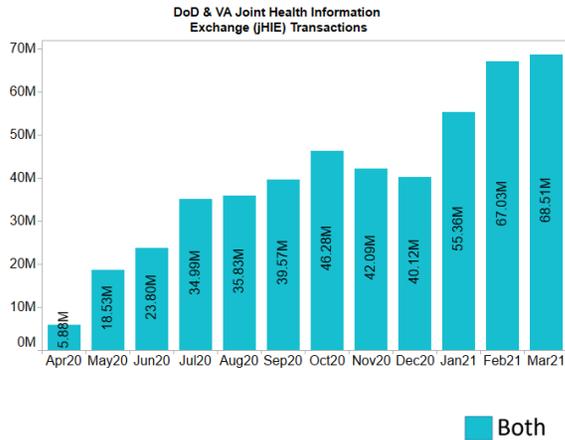
Metric A.6: JLV Operational Availability		
Definition		
The percentage of time during the month that the JLV was available for log in and functionally operational by DOD and VA users (i.e., available for users to conduct a patient search and to access both DOD and VA EHR data in the cloud environment)		
DOD	Change	Impact Factors
▼	The average monthly operational availability decreased by 1.03 percentage points between the first and second quarters to 98.47 percent.	There are no factors of note.
VA	Change	Impact Factors
▼	The average monthly operational availability decreased by 0.46 percentage points between the first and second quarters to 94.40 percent.	<p>The decrease in the average operational availability of JLV was driven by outages in services that JLV uses to connect to VA and DOD data sources, which include:</p> <ul style="list-style-type: none"> • VistA Data Service (DS) (VDS) (VA Log in and retrieval of VA records) • Snareworks (DOD Log in) • Patient Discovery Web Service (PDWS) (Patient look up) • Master Veterans Index (MVI) (Retrieves VA patient ID) • jMeadows (Connects to MVI/PDWS/VDS) • Bidirectional Health Information Exchange Relay (BHIERelay) (retrieval of DOD records)



Metric A.7: CHDR Clinical Data Update Success Rate from DOD to VA and VA to DOD		
Definition		
<p>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.)</p>		
DOD	Change	Impact Factors
▼	<p>The average monthly CHDR clinical data update success rate had a decrease of 0.93 percentage points from 91.25 percent in quarter one to 90.32 percent in quarter two.</p>	<p>There are no factors of note.</p>
VA	Change	Impact Factors
▼	<p>The average monthly CHDR clinical data update success rate had a decrease of 2.75 percentage points from 27.40 percent in quarter one to 24.65 percent in quarter two.</p>	<ul style="list-style-type: none"> Analysis over the FY2021 Q1 revealed large backlogs in messages from DOD to VA causing anywhere from 1 to 6 day delays in the VA receiving DOD messages as well as receiving responses to VA messages. The DOD CHDR team are in the design stages of replacing the current interface component to mitigate these delays, however there is no ETA for deployment to production at this time.

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.

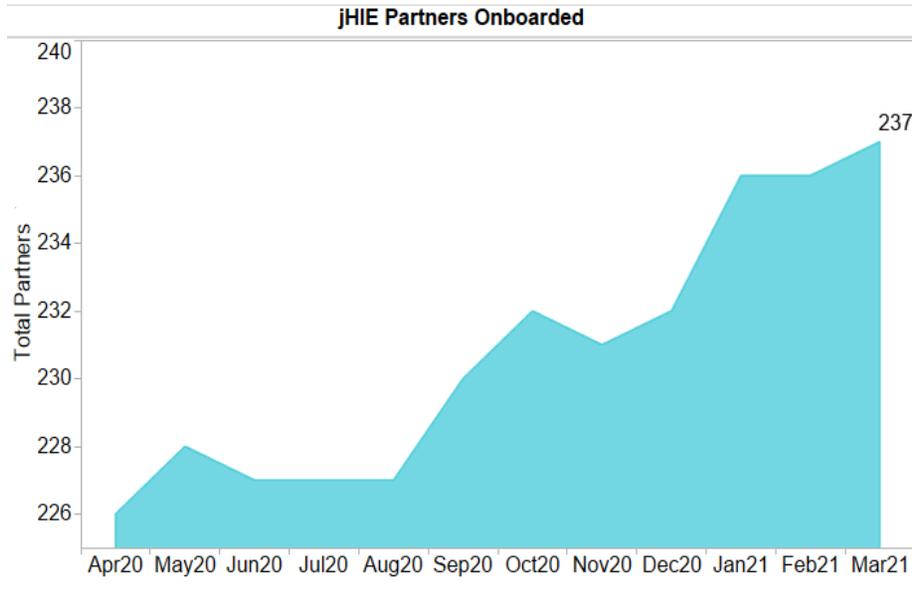


Metric B.1: Joint HIE Transactions

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 increased by 48.58 percent between the first and second quarters to 190,902,267.	The increase in the total number of joint HIE transactions was driven by: <ul style="list-style-type: none"> • An increase in appointments at both DOD MTFs and VA VAMCs, causing an increase in pre-fetch joint HIE transactions. • An increase in JLV usage from MHS GENESIS and VA OEHRM wave deployments. • An increase in JLV usage from JLV training and increased awareness of joint HIE capabilities.

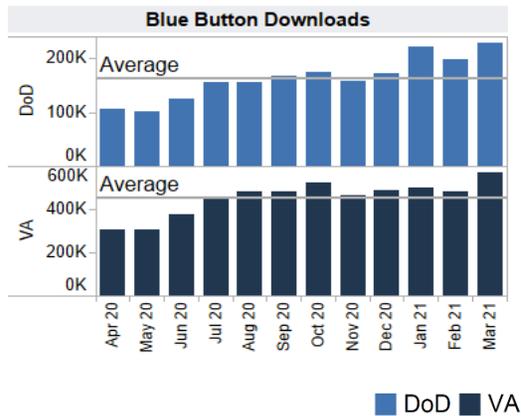


■ Both

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
▲	Five additional joint HIE partners were onboarded between the first and second quarters, bringing the total to 237.	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.

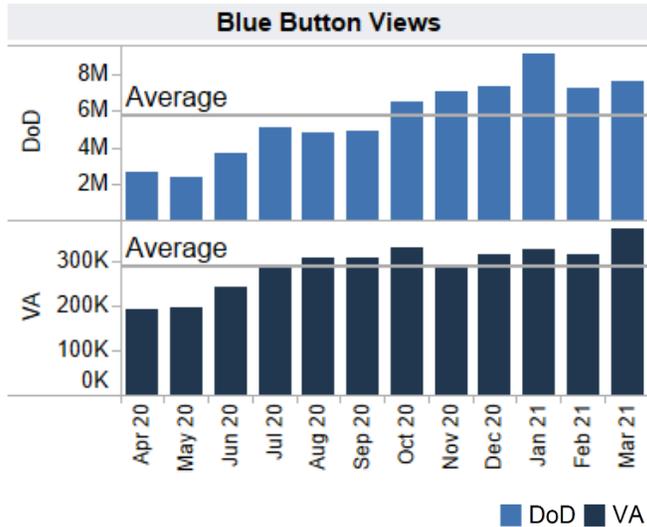


Metric C.1: Blue Button Downloads

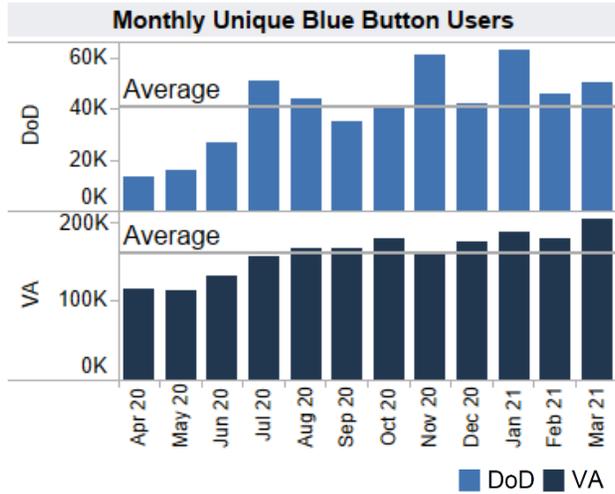
Definition

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 28.97 percent between the first and second quarters to 652,645.	The increase in the number of Blue Button Downloads was driven by: <ul style="list-style-type: none"> • Patients accessing their COVID-19 test results using Blue Button's Health Record. • TOL gaining nearly 10k new users per week during Q2 FY2021. • Patients accessing their health records from the 'legacy EHR' (AHLTA) as their places of care transition to MHS GENESIS. Some patients believe they need the historical records as their provider team is using a new system. • Patients using Blue Button as verification of receiving their COVID-19 vaccination in the immunization displays.
VA	Change	Impact Factors
▲	The total quarterly number of Blue Button downloads increased by 5.35 percent between the first and second quarters to 1,562,743.	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 increased by 14.93 percent between the first and second quarters to 8,046,297.	There are no factors of note.
VA	Change	Impact Factors
▲	The average quarterly number of Blue Button views increased by 2.56 percent between the first and second quarters to 339,287.	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 increased by 9.87 percent between the first and second quarters to 53,075.	There are no factors of note.
VA	Change	Impact Factors
▲	The average monthly number of Blue Button unique users increased by 10.35 percent between the first and second quarters to 190,072.	There are no factors of note.