



COMMONWEALTH of VIRGINIA

Office of the Governor

John E. Littel

Secretary of Health and Human Resources

November 9, 2022

MEMORANDUM

TO: The Honorable Mark D. Sickles, Chair
The Honorable George Barker, Vice Chair
Joint Subcommittee on Health and Human Resources Oversight

FROM: John Littel, Secretary
Office of Health and Human Resources

SUBJECT: 2022 Electronic Health Records Workgroup Report

This report is submitted in compliance with Item 283 (C 1-3) of the Appropriations Act directs that the:

1. Secretary of Health and Human Resources, in collaboration with the Secretary of Administration and the Secretary of Public Safety and Homeland Security, shall convene an interagency workgroup to oversee the development of a statewide integrated electronic health record (EHR) system. The workgroup shall include the Department of Behavioral Health and Developmental Services (DBHDS), the Virginia Department of Health, the Department of Corrections, the Department of Planning and Budget, staff of the House Appropriations and Senate Finance Committees, and other agencies as deemed appropriate by the respective Secretaries. The purpose of the workgroup shall be to evaluate common business requirements for electronic health records to ensure consistency and interoperability with other partner state and local agencies and public and private health care entities to the extent allowed by federal and state law and regulations. The goal of the workgroup is to develop an integrated EHR which may be shared as appropriate with other partner state and local agencies and public and private health care entities. The workgroup shall evaluate the DBHDS statement of work developed for its EHR system and the DBHDS platform for potential adaptation and/or use by state agencies in order to develop an integrated statewide EHR.

2. The workgroup may consider and evaluate other EHR systems that may be more appropriate to meet specific agency needs and evaluate the cost-effectiveness of pursuing a separate EHR system as compared to a statewide integrated EHR. However, the workgroup shall ensure that standards are developed to ensure that EHRs can be shared as appropriate with public and private partner agencies and health care entities.

3. The workgroup shall also develop an implementation timeline, cost estimates, and assess other issues that may need to be addressed in order to implement an integrated statewide EHR system. The timeline and cost estimates shall be used by the respective agencies to coordinate implementation. The workgroup shall report on its activities and any recommendations to the Joint Subcommittee on Health and Human Resources Oversight by November 1 of each year.

Should you have any questions or need additional information, please feel free to contact me at (804) 786-7765.

Enclosure

Pc: The Honorable Lyn McDermid, Secretary of Administration
 The Honorable Robert Mosier, Secretary of Public Safety and Homeland
 Security

ELECTRONIC HEALTH RECORDS WORKGROUP

REPORT TO THE GOVERNOR AND
GENERAL ASSEMBLY

2022



OFFICE OF THE SECRETARY OF
HEALTH AND HUMAN RESOURCES

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EXECUTIVE SUMMARY

Item 283 (C 1-3) of the Appropriations Act directs that the:

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- 2. The workgroup may consider and evaluate other EHR systems that may be more appropriate to meet specific agency needs and evaluate the cost-effectiveness of pursuing a separate EHR system as compared to a statewide integrated EHR. However, the workgroup shall ensure that standards are developed to ensure that EHRs can be shared as appropriate with public and private partner agencies and health care entities.*
- 3. The workgroup shall also develop an implementation timeline, cost estimates, and assess other issues that may need to be addressed in order to implement an integrated statewide EHR system. The timeline and cost estimates shall be used by the respective agencies to coordinate implementation. The workgroup shall report on its activities and any recommendations to the Joint Subcommittee on Health and Human Resources Oversight by November 1 of each year.*

The 2022 Electronic Health Records Workgroup focused on the following work plan during the group's three scheduled meetings in 2022:

- Provide updates on EHR implementation, procurement, and enhancements for agencies participating in the workgroup
- Share information and lessons learned regarding EHR procurements and funding streams
- Discuss interoperability activities within agencies and across public and private entities
- Review implementation and functionality roadmaps and procurement alternatives
- Develop recommendations and goals for continued workgroup activities in calendar year 2023

The EHR workgroup reviewed updates on the status of EHR procurements for Virginia Department of Corrections (VADOC), Virginia Department of Health (VDH) and the Department of Behavioral Health and Disability Services (DBHDS) pertaining to EHR business and functional requirements, procurement timelines and appropriated funding. This review highlighted the importance of interoperability in each respective member agency EHR procurement and uncovered opportunities to achieve alignment across systems by sharing business and functional requirements and applying lessons learned from market research and vendor negotiations. Workgroup recommendations reflect the results of this review.

EHR IMPLEMENTATION UPDATES

The purpose of the workgroup is to collaborate on the development of member agency EHR systems, to review the costs and benefits of using one vendor and product or allow the agencies to use different vendors and products as long as 1) all systems would be interoperable; and 2) agencies can access and share data on individuals receiving medical care and health care services at multiple state facilities. Per the directive, the workgroup may consider and evaluate other EHR systems that may be more appropriate to meet specific

agency needs and evaluate the cost-effectiveness of pursuing a separate EHR system as compared to a statewide integrated EHR. In discussions prior to 2022, the workgroup recognized member agencies were at different stages of EHR implementation and each needed to proceed with separate procurements, keeping in mind interoperability across systems as a key requirement.

DBHDS EHR Update on Existing EHR Initiatives and Projects

DBHDS successfully implemented the Millennium EHR across its twelve facilities and has shifted focus to interoperability and data exchange with the Community Service Boards (CSBs) and providers external to DBHDS, utilizing two additional solutions by 2022 fiscal year end. CommonWell, Cerner's Health Information Exchange solution and Cerner Direct. DBHDS is targeting to fully implement the Health Information Exchange, CommonWell, within Fiscal Year 2023. Cerner Direct, secure EHR to EHR communication, has been implemented since second quarter of 2022.

The Health Information Exchange platform, **CommonWell** by Cerner, allows specific patient data to be shared (sent and received) among participating providers, who are internal or external to DBHDS, and connected to the CommonWell Health Information Exchange network. Benefits of CommonWell include DBHDS provider access to valuable clinical data for care coordination and decision making, monitoring of patient movement and behavioral health management. It also reduces health related costs by eliminating redundant or unnecessary testing. Currently, the Office of the Attorney General is finalizing their review of the use policy. Once finalized, DBHDS will begin using CommonWell, the Health Information Exchange.

Cerner Direct is a secure messaging solution that provides the ability to send specific, regulatory compliant portions of the patient's chart, securely and directly to another provider, internal or external to DBHDS. This solution has been in use as of second quarter 2022. It promotes interoperability and data sharing by providing the ability for providers to share pertinent portions of the patient record to help make more informed decisions on the coordination of care and patient treatment and/or discharge plan.

EHR initiatives to automate data flow into the EHR that have been funded for Fiscal Year 2023 include integrations with blood glucose devices, vital sign machines, food and nutrition system, and automated medication dispensing cabinets. Additional funded Fiscal Year 2023 EHR enhancement projects include the configuration of the forensics information management module within the EHR, implementing an enterprise provider dictation (voice to text) solution, implementing an electronic signature module within the EHR for clinical forms that require patient signatures, and enhancing single sign on access to the EHR, improving the clinicians workflow by reducing sign on frequency. These projects are targeted for completion by end of Fiscal Year 2023.

The data exchange platform will be a centralized data management and reporting platform. The platform will receive data from the CSB electronic health record systems (EHRs), the state facilities, and other DBHDS systems; apply data standardization; and connect the records for a unique individual. This will provide a more comprehensive view of the services provided. The more detailed, encounter-level data that will be provided by receiving the CSB EHRs will allow for more complete and accurate reporting. This effort is funded by a mix of general and federal funds and is currently in the requirements-gathering phase.

The data exchange platform phased approach will include multiple phases. The initial phase will connect all of the Community Service Boards' EHRs to the DBHDS data exchange platform. During this phase, the CCC3 application and Little CARS, including the data and the reports, will be replaced with the data exchange platform receiving data directly from the CSB EHRs. This phase will also implement a single unique patient identifier regardless of where the data comes from. In phase two, the existing DBHDS data warehouse will be migrated to modernized enterprise data warehouse. The historical data and reports that were in the old data warehouse will be evaluated, validated, and moved to the modernized data warehouse. In the third phase, all remaining applications and processes will be migrated to the data exchange. The goal for this phase is to migrate any other data sharing applications or tools that are used between the CSBs and DBHDS, examples

would include TRAC-IT, PACT, JAIL and others. The Enterprise Data Warehouse platform would serve as the single hub for all reporting needs. This would allow for the decommissioning of several legacy applications and streamline the process for data sharing between the CSBs, DBHDS, and others.

To further assist member agencies with their ongoing and planned EHR procurements, DBHDS offered to share its compendium of lessons learned and best practices. DBHDS emphasized the importance of recognizing what is in versus beyond the agency's control regarding procurement and implementation timelines. DBHDS strongly encourages other agencies to develop an internal agency EHR steering committee early on for decision making before, throughout, and post implementation. Decisions appropriate for this committee would be project requests involving the EHR such as integrating with other third-party systems or devices to automate data flow, and prioritizing these projects or change requests. The EHR is constantly evolving and requires ongoing operational and IT support. In addition, it is imperative to understand what ongoing EHR support requirements will be necessary after implementation. This includes requirements pertaining to information security support, an internal or external IT help desk for different tiers of IT support, an EHR governance committee comprised of stakeholders from different departments to vet EHR change requests. Implementing a streamlined change control process for EHR change requests, and establishing a communication and training plan will help avoid operational disruptions and improve EHR adoption.

Exhibit 1. DBHDS EHR Activity Timeline

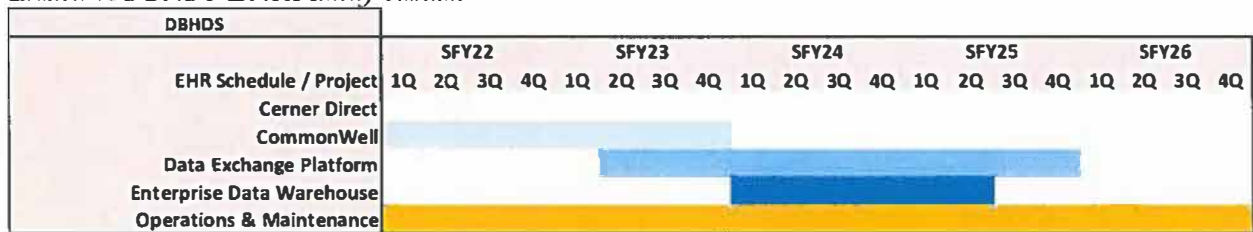


Exhibit 2. DBHDS EHR Budget and Appropriations

General Funds				
Budget	SFY23		SFY24	
Initiative	One-Time	Ongoing	One-Time	Ongoing
Personnel		\$ 3,941,393		\$ 3,941,393
O&M Cerner		\$ 4,244,392		\$ 4,265,992
CBORD Interface		\$ 34,380		\$ 34,380
APA CPT Licenses		\$ 90,000		\$ 90,000
Enterprise Dragon Dictation		\$ 180,000		\$ 180,000
Implementation: Clinical Forms eSignature Suite	\$ 580,000			
Implementation: Enterprise ADC Integration w/ EHR	\$ 600,000			
Implementation: Blood Glucose Integration w/ EHR	\$ 118,000		\$ 18,000	
Implementation: Vital Sign Integration w/ EHR	\$ 118,000		\$ 18,000	
Implementation Single Sign On EHR	\$ 211,670			
Cerner Project Resources	\$ 242,750			
FIMS	\$ 369,405			
Grand Total	\$ 2,239,825	\$ 8,490,165	\$ -	\$ 8,547,765

General Funds				
Budget	SFY23		SFY24	
Initiative: Data Exchange Platform and Enterprise Warehouse	One-Time	Ongoing	One-Time	Ongoing
Enterprise Data Warehouse Professional Services	\$ 125,000			
Enterprise Data Warehouse (includes Master Patient Management)	\$ 375,000			
HealthRegistries/HealthRecord	\$ 187,500			
HealthRegistries Set Up Fee	\$ 93,750			
Grand Total	\$ 781,250	\$ -	\$ -	\$ -

VADOC EHR Implementation Update

The Virginia Department of Corrections (VADOC) is in the early stages of the procurement process for a department-wide EHR system. After a thorough and extensive evaluation period of all vendor proposals, VADOC's EHR Evaluation Team concluded all scoring and evaluation activities in September of 2022 and submitted an intent to award. Moving forward, the next steps will include contract negotiation between VADOC and the intended vendor, followed by review of the draft contract by VITA and the OAG's office. Once VADOC has approval from those two entities, the contract will be finalized and signed by the vendor and VADOC.

VADOC conservatively anticipates contract negotiations to conclude no later than February 2023 with official implementation to begin in March of 2023. Item 404 Q.1., Chapter 2, 2022 Acts of Assembly, Special Session I (the 2022 Appropriation Act), provides appropriation for the implementation of EHR systems in all facilities. However, until negotiations are completed and a contract is signed, final cost for the system and implementation will not be known. VADOC is expected to update the workgroup once the contract has been executed.

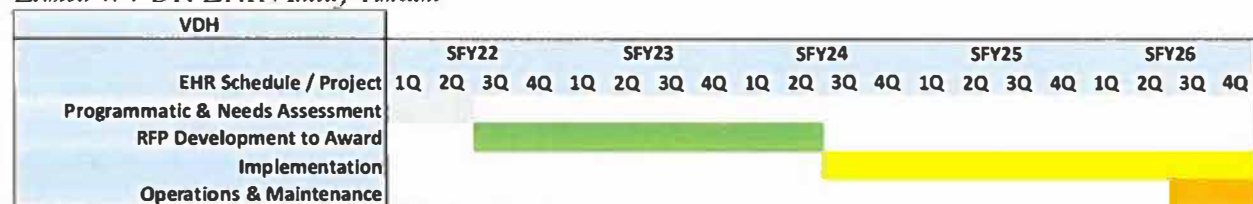
Exhibit 3. VADOC EHR Activity Timeline

VADOC	SFY22				SFY23				SFY24				SFY25				SFY26			
EHR Schedule / Project	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
RFP Development to Award																				
Implementation																				
Operations & Maintenance																				

VDH EHR Implementation Update

During 2022, VDH conducted a functional needs assessment including a mixed methods approach to define the needs and future state for the VDH EHR. The functional needs assessment study included four steps: a current state analysis, future state analysis, feasibility assessment, and EHR solution assessment, with concurrent change management activities. After completing the needs assessment and prioritizing the business functions and features for VDH's EHR in December 2021, VDH engaged in the EHR solution assessment to determine what public health Commercial Off-The-Shelf (COTS) systems might be available to procure. VDH elected to focus on products that are currently engaged within the Commonwealth and have public health capabilities. VDH met with VITA and VDH's Office of Procurement and General Services (OPGS) to review requirements language, required forms, and security requirements for a cloud-based EHR solution. To gather as many inputs and insights from across VDH programs and health districts as possible, the EHR planning initiative included over 131 stakeholders across 29 of the 35 health districts and all Central Office divisions. These accomplishments have set the EHR initiative at the department on the path toward a successful state-of-the-art EHR system implementation. VDH currently is on track to publish a Request for Proposal (RFP) for an EHR this fall with the goal of beginning implementation in Fiscal Year 2024, as shown in Exhibit 4.

Exhibit 4. VDH EHR Activity Timeline



During the 2021 General Assembly Special Session II, VDH was appropriated \$10 million for Fiscal Year 2022 of its total American Rescue Plan Act (ARPA) award of \$30 million, with an additional \$10 million non-general fund appropriated in both Fiscal Year 2023 and Fiscal Year 2024. ARPA funding for projects like VDH's EHR must be obligated by December 31, 2024 and fully expended by December 31, 2026. Failure to meet either of these deadlines places these federal funds at risk.

Exhibit 5. VDH EHR Current and Projected non-general fund Expenditures

FY22 (Actual)	\$930,000
FY23 (Estimated)	\$2,270,000
FY24 (Estimated)	\$6,800,000
FY25 (Estimated)	\$13,000,000
FY26 (Estimated)	\$7,000,000

EHR LESSONS LEARNED

DBHDS, VDH, and VADOC shared lessons learned from recent EHR procurement and implementations. In addition and outside of workgroup meetings, VDH interviewed leaders of previous IT implementations to learn from them. The following success factors were captured during the interviews with DBHDS, VADOC, a local government with EHR implementation, and VDH implementations of VAMS, EHD, PrepMoD, and VASE+.¹

¹CDC Vaccine Administration Management System (VAMS) <https://vams.cdc.gov/>; VDH Environmental Health Database (EHD). Multi State Partnership for Prevention Pandemic Response Management System (PrepMoD), <https://multistateprep.com/prepmod/>; Vaccine Appointment Scheduling Engine (VASE+) <https://vase.vdh.virginia.gov/vlhapgs/?p=vaseprep.vaccinationappointments>

Exhibit 6. Cross-agency Lessons Learned

Theme	Success Factors
Governance	<ul style="list-style-type: none"> • Define clear roles and responsibilities that empower project leaders to make timely decisions • Implement a well-defined change control process to enable effective management of scope process
Project Staffing	<ul style="list-style-type: none"> • Build the trust of end-users and increase adoption rate by properly staffing an appropriate support models for the functional areas and a help-desk that can respond quickly to user needs
Organizational Change Management	<ul style="list-style-type: none"> • Include Local Health Departments (LHD) representatives throughout the implementation • Develop multidisciplinary implementation support team that includes clinical and business stakeholders • Analyze user data in WebVision to identify and create a list of potential Super Users
Design	<ul style="list-style-type: none"> • Engage end-users early and often during the design process
Training and Testing	<ul style="list-style-type: none"> • Establish leadership support during go-live to enable a smoother transition • Create 2-10-minute user-role based Web Based Training (WBT) sessions coupled with Quick Reference Guides (QRG) • Engage training teams with established relationships with the user to be actively on-site during cutover to enhance the transition period
Maintenance and Optimization	<ul style="list-style-type: none"> • Communicate to end users what works and what is not working. Let the users know the corrective action plan • Establish processes and clearly define roles and responsibilities • Communicate release plans on software updates proactively

INTEROPERABILITY

While exchange of patient data is a shared goal across agencies, member agencies had different priorities for which partners they would engage first in this data sharing. VADOC identified the Virginia Commonwealth University (VCU) and University of Virginia (UVA) health systems as priority for interoperability given that the majority of inmate patient care is administered by VCU and UVA. DBHDS is implementing the CommonWell functionality, allowing state facility EHR-CSB (community services board) EHR communication as a first step in interoperability. VDH noted the importance of connecting with coordinated care networks, shared technology platforms which enables health and social service providers to send and receive electronic referrals.

The workgroup agreed that VITA can help assure alignment of interoperability requirements in their governance oversight role. As member agency procurements move forward, VITA will review EHR requirements as part of its normal processes (e.g., investment, cyber security, architecture, project, and procurement reviews) in order to identify general patterns and apply those as collaborative standards for the Commonwealth.

WORKGROUP RECOMMENDATIONS

During the final workgroup meeting, members expressed interest in continued collaboration and developed recommendations related to EHR procurement activities going forward. Those recommendations include:

- Continue workgroup meetings where members can provide updates on EHR implementations and enhancements and the sharing of best practices.
- While DBHDS, VDH and VADOC focus on separate implementations, each should seek opportunities for connectivity and interoperability across platforms.
- Agency representatives should research health information exchanges (i.e. Connect Virginia, CommonWell) and determine opportunities for interoperability.
- Each agency should review current & potential clinical use cases with other agencies in order to improve quality of care and health outcomes for clients engaging with multiple agencies. Opportunities may include shared information around Substance Use Disorder, Naloxone training and distribution and family planning.

- Future workgroup activities should include the identification of available data sources, if any, showing client overlap among the three agencies
- Each agency will identify funding and other resources needed to address interoperability dependencies, and resulting adjusted timelines, as they arise throughout implementation.

The EHR workgroup is committed to regular meetings May through October in 2023 to continue working on interoperability within agencies and across other public and private entities and exploring the role of exchanges such as CommonWell Health Alliance and Connect Virginia (HIE) in collective interoperability.

APPENDICES

Appendix A: Workgroup Participants

EHR Workgroup Participants	
Entity	Representative(s)
Office of the Secretary of Health and Human Resources	Lanette Walker, CFO
Office of the Secretary of Public Safety and Homeland Security	Brian Swann, Deputy Secretary of Public Safety Ashley Traficant, Assistant Secretary
Office of the Secretary of Administration	Joyce Reed, Deputy Secretary
Department of Health	Suresh Soundararajan, CIO Dr. Parham Jaber, Chief Deputy Commissioner for Community Health Services Bill Edmunds, Director of Process and Evaluation Oversight
Department of Behavioral Health and Disability Services	Erin Loar, Deputy Chief Information Officer Anna Smith, Director of Enterprise Applications
Department of Corrections	Zacc Allen, CIO Tre Moore, EHR Project Manager
Department of Planning and Budget	Mike Shook, Associate Director Banci Tewolde, Associate Director
Virginia Information Technology Agency	Robert Osmond, CIO John Kissel, IT Manager II
House Appropriations Committee	Susan Massart, Legislative Fiscal Analyst
Senate Finance and Appropriations Committee	Mike Tweedy, Legislative Analyst

Appendix B: DBHDS SFY23 Approved Initiatives

1. DBHDS SFY23 Projects
2. Integrate Enterprise Automated Medication Dispensing Cabinets with EHR
3. Electronic Signature for Clinical Forms
4. Blood Glucose Integration with EHR
5. Vital Sign Integration with EHR
6. Enhance Single Sign On with EHR
7. Forensics Information Management System Configuration within EHR
8. Food and Nutrition (CBORD) Integration with EHR
9. Enterprise Dragon Dictation for EHR