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September 30, 2021

MEMORANDUM

TO: The Honorable Ralph S. Northam

CC: The Honorable Luke Torian, Delegate and Chair, House Appropriations
The Honorable Janet Howell, Senator and Chair, Senate Finance and Appropriations
Dan Timberlake, Director, Department of Planning and Budget

THROUGH: The Honorable Daniel Carey, MD
Secretary of Health and Human Resources

FROM: M. Norman Oliver, MD, MA
State Health Commissioner

SUBJECT: Chapter 0001 of the Acts of Assembly of the 2021 Special Session II
VDH Reports Required for ARPA Project Appropriations

As required in Chapter 0001 of the Acts of Assembly of the 2021 Special Session II, the Virginia Department of Health (VDH) is providing implementation plans and schedules for the five projects requiring the submission of these documents. VDH will provide additional details in the quarterly update report that is due by December 31, 2021.

These reports includes the following ARPA project appropriations to VDH:

1. Broadband connectivity at local health departments
2. Electronic Health Records
3. Facility Infrastructure at VDH Central Office and Local Health Departments
4. Modernization of VDH administrative systems and software
5. Records Management System

Our staff has worked diligently since the August special session to turn these appropriations and proposals into detailed plans for implementation. We are excited about the opportunity to use these funds to improve the efficiency and effectiveness of VDH and to improve the lives of the people of Virginia.

If you have any questions or need additional information, please let me know.

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

ELECTRONIC HEALTH RECORD (EHR)

American Rescue Plan Act (ARPA) State Fiscal Fund (SFF) Workplan

9/30/2021

Table of Contents

Context for ARPA Initiatives

The Virginia Department of Health (VDH) is excited about the opportunity presented by the appropriation of American Rescue Plan Act (ARPA) State Fiscal Funds in the August 2021 Special Session II of the General Assembly to improve public health in Virginia. The ability to procure and implement an Electronic Health Record (EHR) system has been one of the key priorities for the agency which may now come to fruition with the availability of this once in a generation funding opportunity.

Given VDH's full engagement in responding to the COVID-19 pandemic and the unknown course this response may take over the next one to two years, VDH will work with local health districts to build in flexibility in the implementation and timeline of this endeavor. When changes to plans occur, VDH will reflect that in future updates.

Executive Summary

Electronic Health Record (EHR) systems are patient-centered records system that bring together key information about a patient's health to enable data-driven, comprehensive care delivery.

EHR systems can be used to efficiently collect data in a format that can be shared across multiple health care organizations and leveraged for quality improvement, prevention activities, and public health reporting. The ability for the Virginia Department of Health (VDH) to obtain a comprehensive, interoperable EHR solution that will facilitate the collection of clinical, laboratory, billing, scheduling, and other health related information is a critical need.

This need has been further accentuated by the COVID-19 public health response. The lack of a robust and integrated technical infrastructure impacted health outcomes leading to a higher likelihood of missed opportunities in timely public health interventions such as testing and contact tracing. EHR systems can not only help with a pandemic response but can be a powerful tool to assess and improve population health outcomes as well through real-time reporting and data analysis.

VDH is seeking to identify a solution to replace its legacy patient demographic and billing system (WebVISION). The agency seeks to interface with existing single programmatic solutions such as the Virginia Information Immunization System (VIIS) and serve as the main repository of information across multiple clinical services programs including women's health, maternity, STD, HIV, TB, and immunization. This solution will offer strong data analytics for improving public health outcomes, comply with patient safety and regulatory standards, including the Health Insurance Portability and Accountability Act (HIPAA) of 1996. The goal is to deploy this capability across 120 clinic sites to serve over 250,000 patients or 400,000 clinical encounters per year.

Through the use of an EHR system and health information exchanges (HIE), VDH can leverage health information technology to efficiently collect and share data, reduce cost, improve emergency response, and make more timely diagnosis of health conditions that improve not only individual health, but also impacts population health across our in communities in the Commonwealth.

Objectives

- Fully implement a state-of-the-art EHR that local health districts (LHDs) can use to improve clinical efficiency and effectiveness of clinical services statewide.
- Enable delivery of safer, higher quality care for patients by allowing rapid access to accurate, up-to-date, and complete information regarding patient care.
- Reduce costs of care through decreased duplication of testing, lab procedures and medical visits through access to relevant and complete medical information of patients, especially for patience that seek care in multiple locations across the health district or across health district lines.
- Enhance transmission of EHR related financial transactions including 3rd party billing to maximize opportunities for funding of essential services.
- Improve the patient experience via reduced clinical cycle times, enhanced two-way communications and a patient portal to promote greater patient ownership of their overall health.
- Increase visibility and accountability for services provided at each local health district and fulfill programmatic reporting requirements for state and/or federally funded initiatives through report generation
- Positively impact employee morale as well as employee recruitment and retention since the availability and access to an EHR is a tool that healthcare staff expect in modern clinical settings.
- Ensure that the EHR meets all the Commonwealth's rigorous Information Technology standards for a cloud based Commercial off the Shelf Technology (COTS) solution. Interfaces with all the required internal and external data systems.
- Fulfill all reporting requirements for all VDH federal and state programs that use the EHR.

Background

VDH has been actively seeking to obtain an EHR since early 2016. In 2016, VDH released an EHR request for information to conduct a market analysis on EHR systems as well as inform the scope of the solution for VDH. This was in large part driven by federal program requirements by the Title X federal funding requirements. This effort did not lead to a successful inclusion of the ask in the Governor's Budget submission in 2016. In May of 2018, the Governor approved SFY20 Budget Language for Cabinet Secretaries to convene an EHR Work Group to study the implementation of a statewide HER. In the following year, SFY21 Budget language directed the EHR Work Group to reconvene with the direct involvement of the House and Senate Money Committees. While the SFY21/22 Budget appropriated almost $16 million for VDH to partner with other state agencies to implement a collaborative solution, in May of 2020, the General Assembly removed VDH's EHR appropriation due to funding concerns associated with COVID-19. In August of 2021, General Assembly Special Session II approved VDH's request for $30 million to procure and implement an EHR.

Additionally, it should be noted that in January of 2021, Fairfax Health District, one of two locally administered health districts in the state (along with Arlington Health District) entered a contract with an

EHR vendor after a competitive RFP process. The contract has language that allows other government entities to use its contract to forego the time and expense of the RFP process.

Problem Definition

While VDH has a patient demographic and billing system (WebVision), it needs an EHR to achieve the strategic goals previously identified. WebVision was developed internally by VDH's Office of Information Management (OIM) staff. It is not a real-time, patient centered system that brings together the patient history, clinical assessment, lab findings and other pertinent information for clinical decision-making.

Managing health information in a clinical paper environment is challenging in an electronic era when patient centric data system should have the capacity to provide robust scheduling, assessments, diagnosis, service planning, progress notes, document medical information including electronic prescribing and laboratory information. The collection of detailed clinical information about reported cases, which is necessary to confirm the diagnosis, to understand transmission, or to determine disease-related risk factors, is still heavily dependent on paper manual processes. A focus on EHR implementation in public health is pertinent for examining impacts of public health programming and interventions for the positive change in population health. Clinical paper records and disparate systems retaining various health information also present a barrier in engaging patients in their own care where access to a patient portal cannot be granted.

Paper medical records also limit the ability to collect and share important public health information for reporting and surveillance, for coordination of care amongst contributing providers in the same agency or across other state agencies (i.e. in Health and Human Resources, Public Safety) and can lead to unnecessary duplication of services and costly operational inefficiencies. Furthermore, without a structured standardization for capturing clinical information that can be easily linked to meeting regulatory and billing requirements within VDH, opportunities to capture all revenue through third party payers is not maximized. Costly inefficiencies of a paper medical record and missed opportunities for full reimbursement of services can be potentially averted or minimized through the implementation of an EHR.

Lastly, the lack of a robust technology infrastructure can detract from recruiting the next generation of public health workforce and similarly hinder the provision of high-quality clinical care that residents of the Commonwealth would expect from VDH.

Evidence-Based Reasoning

Data and technology have become integral elements across public health operations, including responses to outbreaks, enhanced surveillance, and formal epidemiology investigations, yet VDH's current technology infrastructure is outdated. The CDC has expressed the importance of building preparedness and disaster response capabilities. Investment in modernizing data and technology tools would enable VDH to significantly improve the quality and agility of their responses to future emergencies. Improvements to data and technology also enable health equity through more data-driven decision making by providers and patients. The disproportionate impact to some of the communities and

demographics served by public health care systems demonstrates the need for modern systems to provide the best possible care.

Executive Sponsors, Key Stakeholders, and Initial Stakeholder Management Plan

VDH is coordinating with the larger EHR interoperability effort working with Deputy Secretary Walker Harris in the Office of the Secretary of Health and Human Resources and working with Nelson Moe the Commonwealth's CIO. In addition, VDH has identified the following leads for this project.

- Executive Sponsor: Parham Jaberi, MD, Chief Deputy Commissioner, Community Health Services (CHS)
- Project Manager: Bill Edmunds, CHS Director of Process Evaluation & Oversight

Dr. Jaberi and Bill Edmunds will engage senior leadership from VDH to provide strategic direction and oversight to the implementation of this effort. Steering Committee Members include the following:

Executive Steering Committee

Name	Title	Department
Dr. Norm Oliver	Commissioner	Office of Commissioner
Suresh Soundarajan	Chief Information Officer	Office of Information Management
John Ringer	Acting Executive Advisor for Administration	Administration
Dr. Lilian Peake	Director	Office of Epidemiology
Dr. Suola Adekoya	Medical Director	Community Health Services
Heather Board	Acting Director	Office of Family Health Services
Jeff Stover	Chief of Staff	Office of the Commissioner

In addition, VDH will convene an EHR Leadership Team in fall of 2021 and through the course of implementation of the project that will meet on a bi-weekly basis to review the progress for this initiative and make strategic decisions to fulfill its goals.

Proposed Solution, Feasibility, and Approach

Proposed Solution, Feasibility, and Approach

The funding from ARPA will be used to fund the procurement and installation of an EHR system to drive efficiency, cost savings, and productivity for VDH and its employees. To immediately address VDH need for digitizing the medical record there are five workstream phases to help prepare for the EHR vendor selection and information technology infrastructure. The five workstreams will take place over 4 months from October 2021 – January 2022 will continue while undergoing the EHR procurement process. The following workstream explanation and purpose helps illustrate how each workstream builds on each other

and the value they provide. Following the explanation and purpose is a summary outline of the workstream and the description of each phase.

Business optimization is the process of defining the vision, identify areas of opportunities, and implement new methods that make the business and clinical areas more efficient and cost effective. For instance, by automation of repetitive paper tasks and eliminating manual redundancies. This leads to enhancing the **client experience** by providing consistencies and quality standard of care at all the local public health clinics. The **data conversion strategy** is intended to provide a roadmap for performing the conversion of data from the manual paper process and the legacy system to the new EHR system.

Information technology (IT) infrastructure is the system of hardware, software, facilities, and service components that support the delivery of business systems and IT enabled processes. The IT infrastructure planning process defines and refines EHR roles within VDH and then identifies what is needed in the way of equipment, applications, and manpower to fulfill that role. The **implementation plan** is a document that details the comprehensive technology enabled business management processes VDH will use to guide operations. It serves as a guide to IT-related decision making, with IT tasks prioritized and implemented using the plan as a framework.

Change communication is the informational component of the change management strategy that helps stakeholders understand what is changing and why, and how it will specifically affect them. **Change management** is designed to take a big picture view around deploying a change. **Communications** is a critical component for creating an audience that is informed and aware, but one without the other won't necessarily help your audience embrace, accept, and continue to use the new EHR tool.

Workstreams	Description
Business Process Feasibility & Validation	▪ Prepare for interviews ▪ Conduct interviews ▪ Document & Validate Business Processes ▪ Create functionality requirements document
Data Conversion Strategy	▪ Map Data Sources and Digitization Considerations ▪ Assess Data Cleanliness & Completeness ▪ Map out preliminary data convergence plan
Implementation & Procurement Strategy	▪ Compare vendor capabilities to functionality needs ▪ Develop prelim phased implementation roadmap ▪ Development procurement strategy plan ▪ Write and put out for procurement
Infrastructure Planning	▪ Prepare tech environmental needs (VITA etc.) ▪ Prepare physical infrastructure needs
Communications & Change Management	▪ Document stakeholders and dependencies ▪ Create a communications and feedback plan ▪ Develop prelim change management strategy ▪ Connect with EHR SteerCo ▪ Develop EHR Taskforce and Working Groups

Proposed Solution Team

VDH's EHR Team will be a collaboration of the following major stakeholder groups:

- Community Health Services
- Office of Information Management
- Office of the Commissioner
- Fairfax Health District
- Division of Epidemiology
- Office of Family Health Services
- Division of Administration
- Local Health Districts
- Representative of District User Groups (Clinician, Nurse, Financial, Registration, Pharmacy & Lab)

Required Capabilities, Initial Risks, and Risk Management

Describe required capabilities to implement the proposed solution, major project risks, and an initial risk management plan

Required Capabilities

The EHR solution will include but not limited to the following domain categories of Direct Care, Supportive Functions, and Information and Technical Infrastructure:

- **Direct Care domains** are used for providing direct health care to, or direct self-care for, one or more persons. Applications may include but limited to clinical, documentation, CPOE, e-Rx, labs, diagnostics, Message Center, etc.
    - Care Management covering clinical practices and health services, case management, tuberculosis clinic, STI clinic, refugee clinic, family planning, laboratory, pharmacy
        - To include support of gynecology, adult health management, teen, and child wellness clinics, BabyCare program
    - Secondary Clinical Services including communicable diseases, community education, dental, lead testing and personal care/respite care
        - The solution will address ADAP, HIV related Services, and other communicable disease needs.
        - Dental will include dental clinics and the remote hygiene program.
        - Lead and personal care/respite care will also be addressed.
    - Clinical Decision
        - The solution will enhance the electronic patient experience for clinical practice, it will offer a platform where all treatment notes, care plans, coordination, labs, problems list, diagnosis, medications, allergies, prescriptions can be tracked in the patient's chart.
    - Operation Management & Communication
        - Communication with Medical Devices and Displays

        - Message Center for secure clinical messaging
- **Supportive Functions domains** that most frequently use existing EHR data to support the management of health care service and organizations may include but limited to patient & provider demographics, billing/financial, patient registration & scheduling, referral programs, reporting
    - Clinical Support
        - It will address community education programs including car seat, safe sleep, breastfeeding, tobacco cessation, and chronic disease prevention.
        - Occupational and employee health
        - Community Health Worker program, Every Women's Life program, maternal and child health case management, and chronic health education, outreach, and surveillance.
        - It will also support TB Clinic and associated services, contact tracing, screening, and testing.
        - The solution will include support for disease prevention, control, immunization, tracking, the WIC program, and the Office of the Chief Medical Examiner.
        - It will allow the ability to schedule and manage patient's appointments, registration, insurance verification, and referrals.
    - Measurement, analysis, research, and reports
        - The solution will allow for reporting per the outlined requirements.
    - Administrative and Financial
        - It will accept all payment types in the standard billing process including Medicare and Medicaid, create electronic agreements for all payers, enable electronic billing, and maintain statewide fee schedules.

- **Information & Technical Infrastructure domains** critical backbone elements include but limited to interoperability, Interfaces, security, privacy, data standardization/vocabulary, registry, audit trail, mapping local terminology, codes, and formats, informatics, and data-driven decision making.
    - Security
        - The solution will provide robust security including a component that will allow the appropriate centralize staff to maintain user accounts and prescribe specific levels of access.
        - It will adhere to all Commonwealth and VDH information security polices and include an extensive audit capacity including automated processes for individual records.
    - Interoperability and Interfaces including general interoperability, interfaces, required application interfaces
        - The solution will support data export/download, health information exchange (HIE), and application to application interfaces.
        - It will include interfaces for e-prescribing, laboratory, electronic billing, state immunization (VIIS), credit card/bank card payments, web F&A/Cardinal,

        - Direct Messaging HISP with other hospital systems and clinics.
    - Data conversion requirements including records to be converted and data migration
        - The solution will incorporate records to be converted based on the pre-determined factors outlined.
    - Patient Portal
        - Patient access management (patient portal access, ROI, etc.)

Project Risks and Mitigation Strategies

#	Project Risk	Mitigation Strategy
1	**Performance Risk:** Alignment of the functional requirements with functions/features of the EHR solution	The EHR implementation, its large stakeholder groups along with its team of supporting consultants will be thorough in compiling needs and evaluating the preferred software vs. the identified needs. VDH will plan a multi-day product demonstration by vendors to VDH's stakeholders where the vendors are asked to perform approximately 10 Use Cases to confirm that the software is capable of meeting VDH's needs.
2	**Scope Risk:** Prioritization of competing programmatic needs within the proposed timeline	Relatively early in the initiative, VDH will evaluate its core clinical services and make value judgements as to which non-core programs will be included in phase 1 of the initiative and which other programs are included in subsequent phases. Some programs may not be incorporated in the EHR. The Leadership Team will need to make these difficult decisions in a timely manner.)The negotiation with the vendor over the implementation costs should be initially benchmarked off of the Fairfax implementation cost and then based on economies of scale (VDH hopes to be able to make use of some of Fairfax's work product with their permission) and the additional complexity and logistics of implementing this tool at 120 sites vs. the 5 sites that makes up Fairfax's installed base.
3	**Schedule Risk:** Dependencies on VITA's ECOS process	VDH's OIM has very strong technical capabilities and an excellent working relationship with VITA

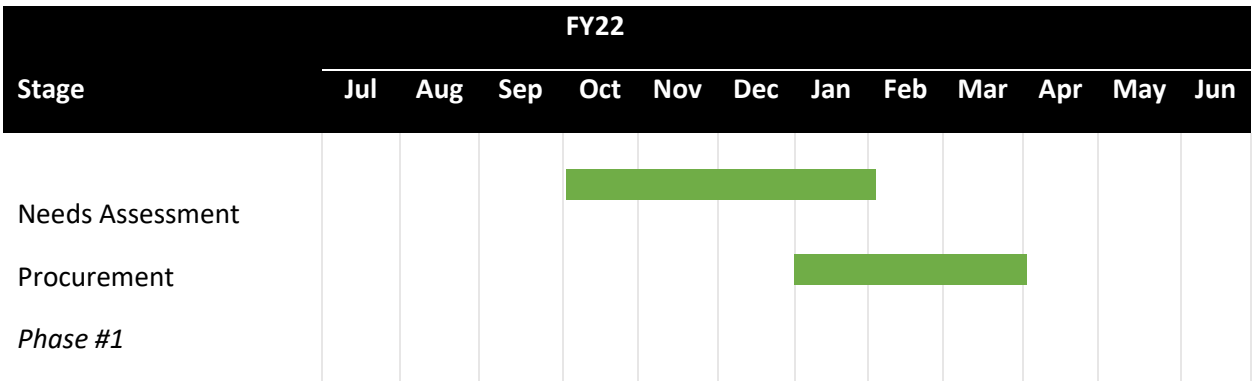
		so the extensive process should move as promptly as possible.
4	**Schedule Risk:** Dependency on broadband and bandwidth upgrades	VDH's Office of Information Management has been actively working with VITA and the state's telecom contractor for approximately 2 years on the planning and implementation of increase bandwidth at each VDH facility. OIM produces a monthly report and this effort has been proceeding at a pace that IT infrastructure should not be an issue for this initiative.
5	**Procurement Risk:** Timeliness and complexity of contract negotiations with EHR vendor	VDH plans to leverage lessons learned and start the contract negotiations early in the process to stay on schedule

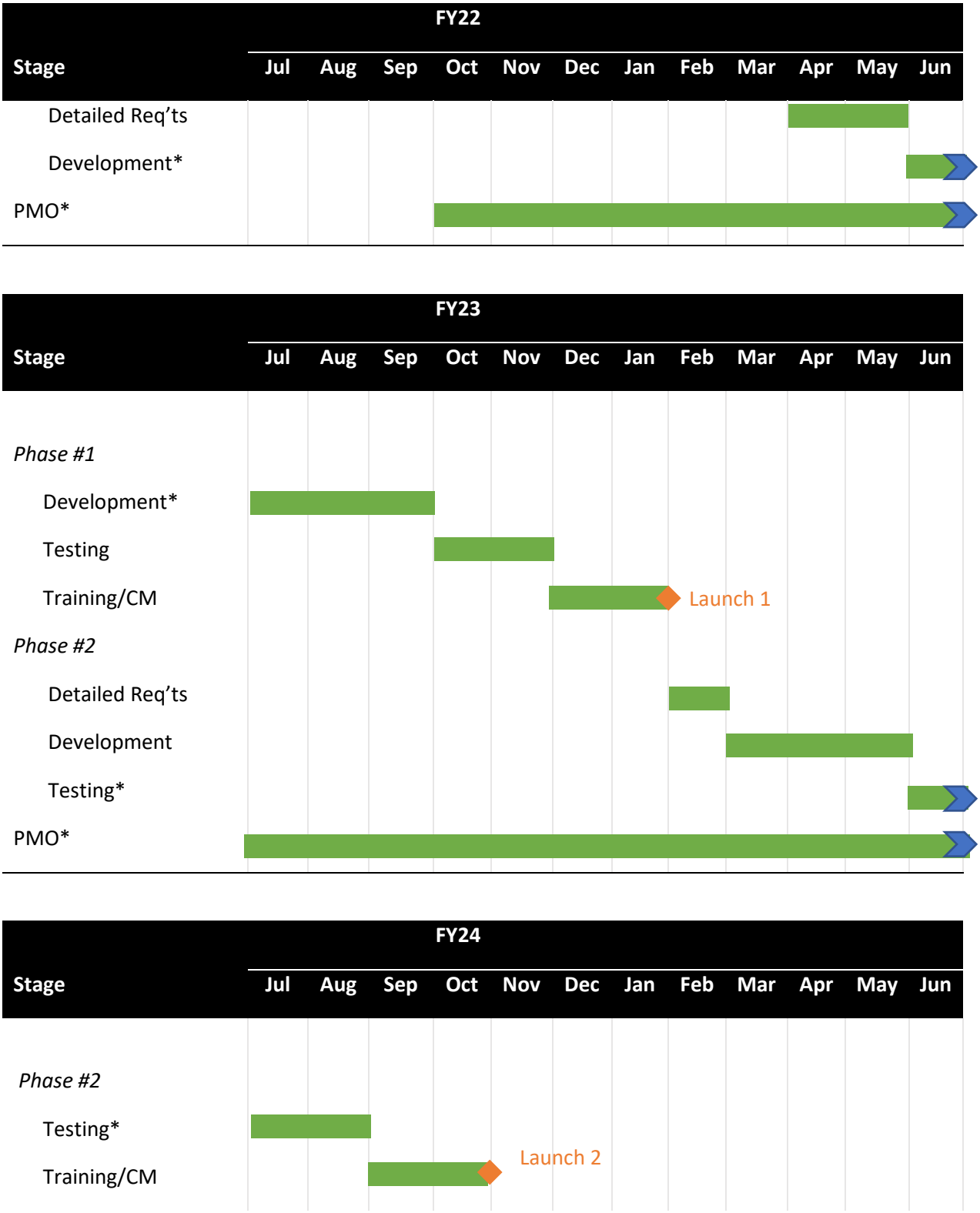
Change Management Considerations

VDH understands that transformation initiatives are successful not only with the right technology, processes, and resources, but also with people who are properly equipped for the changes. Successfully navigating transformation in a highly complex environment requires effective managing business process changes and the way people accomplish work, communications, and stakeholder management to create buy-in at the early stages. VDH will develop and implement an effective change management and communications strategy to establish employee understanding of the initiatives and any impacts to their individual jobs. The strategy will include communication of the goals of the upcoming changes, preparation and alignment of the changes, and an overall building of confidence in the benefits of the changes.

Initiative Timeline, Key Activities, and Milestones

Stages with asterisks and arrows indicate a phase that occurs over two or more fiscal years.

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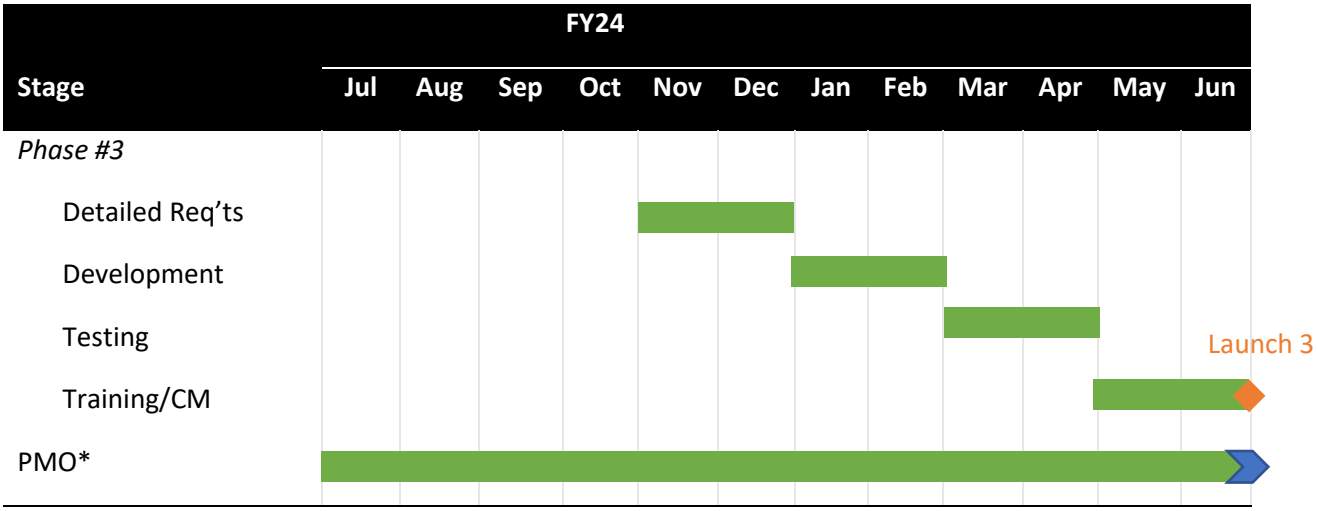

Initiative Budget

Total Budget: $30,000,000

Item	FY22	FY23	FY24
Phase 1	$9,800,000	$5,420,000	$0
Phase 2	$0	$6,990,000	$0
Phase 3	$0	$0	$3,830,000
Recurring Expenses	$200,000	$2,520,000	$1,240,000
Total	**$10,000,000**	**$14,930,000**	**$5,070,000**