Electronic Health Records Interagency Workgroup

Interim Report

October 15, 2018

Overview

Item 281 (C) of the 2018 Appropriations Act ("the Act") directs the Secretary of Health and Human Resources, in collaboration with the Secretary of Administration and the Secretary of Public Safety and Homeland Security, to establish an interagency workgroup to oversee the development of a statewide integrated electronic health record (EHR) system. The full language contained in the Appropriations Act is below:

C.1. The 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, 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 can 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 adaption and/or use by state agencies in order to develop an integrated statewide EHR.

C.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 pursing 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.

C.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 October 15, 2018.

The workgroup, organized by Secretary of Health and Human Resources, Daniel Carey, was established in June 2018 and includes representatives from the Virginia Department of Behavioral Health and Developmental Services (DBHDS), the Virginia Department of Health (VDH), the Virginia Department of Corrections (VADOC), the Virginia Department of Planning and Budget (DPB) and the Virginia Information Technologies Agency (VITA):

Health and Human Resources	*Daniel Carey, M.D., Secretary*
Public Safety and Homeland Security	*Brian Moran, Secretary* *Jae K. Davenport, Deputy Secretary*
Administration	*Keyanna Conner, Secretary*
Department of Health	*Debbie Condrey, CIO*

Department of Behavioral Health and Developmental Services	Chris Sarandos, CIO Suzanne Battaglia, Director of Health Information
Department of Corrections	Rick Davis, CIO Kim Moore, Project Manager
Department of Planning and Budget	Mike Shook, Associate Director Banci Tewolde, Associate Director
Virginia Information Technology Agency	Nelson Moe, Commonwealth CIO Michael Watson, Commonwealth CISO Todd Kissam, Enterprise Architecture Manager

From June through October 2018, the workgroup held seven meetings. The Department of Planning and Budget was inadvertently absent from all but the last 3 meetings. The workgroup began by first focusing on the status of EHR implementations at each relevant Agency. Agencies were asked to provide a synopsis of business requirements, statuses of any EHR implementations or procurements, budget for those implementations, and a timeline.

VDH

Currently, VDH uses an in-house developed application to store some of the information contained in its medical records. A good portion of the data, however, is still paper based. The Governor's 2018 introduced budget included funding to implement an EHR system, but the action was later removed in order to ensure interoperability with other projects. VDH is just beginning its process of collecting business requirements for an electronic health records system.

DBHDS

DBHDS has implemented Soarian (a Siemens product) in three state inpatient hospitals. Siemens was recently purchased by Cerner and support for the Soarian product ends in 2025. In September 2018, the agency signed a statement of work with Cerner to implement its product, Millennium, at all DBHDS hospitals throughout Virginia.

VADOC

Currently, all medical records at VADOC are paper only. The Agency has been developing a Request for Proposals (RFP) for an EHR system at its women's correctional facilities for some time. As part of the RFP preparation process, VADOC evaluated its business requirements against the DBHDS product and concluded the product, in its current form, would not meet the agency's needs. However, VADOC included in its RFP a definition of interoperability as defined by the workgroup and a requirement within for any vendor to demonstrate interoperability and data sharing with other EHRs. VADOC released the RFP on August 16, 2018, and the proposal process closed on October 16, 2018.

C.1. Evaluate common business requirements for EHRs to ensure consistency and interoperability.

The group recommends that any EHR solution should:

- Be truly interoperable, demonstrated through a technology overview
- Integrate with existing technologies, third parties, non-Commonwealth entities, and Community Service Boards
- Provide efficiencies of scale with vendors based on volume. This should include discounted licensing, etc.
- Comply with existing data sharing agreements; share data analytics tools when possible

- Acknowledge that data and its access are owned and controlled by the Commonwealth
- Exist under a Joint or Cooperative and GSA Contract IT Procurement for utilization by other agencies, subject to modifications through statements of requirements and work

VADOC and DBHDS are currently the only two state agencies with fully developed EHR system business requirements. VDH is just starting the process to collect business requirements. The workgroup compiled each agency's general business needs for a functional and effective EHR. See exhibits A, B, and C for further details.

C.1. Evaluate the statement of work and platform developed by DBHDS for potential adoption by state agencies.

In comparing the high level business requirements between the agencies and the current EHR system in production at DBHDS, the workgroup discussed that integrating the VADOC, VDH, and DBHDS platforms into this EHR system may be difficult to achieve and potentially more expensive than pursuing a fully interoperable system with different technology solutions for each agency. Customizing one EHR solution to meet the varying needs of each agency is likely to be extensive due to the diverse business needs of each (these are outlined in the agency overviews described in the attached exhibits). With the existence of application program interfaces (APIs), interoperability of data and systems are possible and may be less expensive. The workgroup plans to investigate this more fully in order to provide cost estimates of customizations for each agency.

C.2. Consider and evaluate other EHR systems that may be more appropriate to meet specific Agency needs and evaluate the cost-effectiveness of pursuing separate EHR systems

DBHDS is on track to implement an updated EHR system, by Cerner, for use at all the behavioral health hospitals. This product meets the needs of DBHDS but may not meet the majority of the needs for other agencies. The workgroup is aware of several other EHR vendors with quality products which are tailored toward specific types of care settings such as ambulatory vs non-ambulatory. The workgroup continues to evaluate these EHR systems in detail to determine the cost-effectiveness of pursuing these systems separately as an alternative to a single EHR solution. The workgroup acknowledged pursuing separate EHR systems could also be costly. Requiring agencies to follow a certain process and criteria outlined in the recommendations below may mitigate the risks.

Interim Recommendations
The workgroup recommends that all agencies be required to meet the below criteria in adopting an EHR:

1) The agency must adopt data standardizations in line with the Fast Healthcare Interoperability Resources specifications and Clinical Document Architecture. The use of data standards is critical in order to achieve interoperability and data sharing. For example, in order to determine patient matching, there must be a common link or standard utilized in all systems. Interoperability standards are developed by the Office of the National Coordinator and are based on the Fast HealthCare Interoperability Resources specification, a standard for exchanging healthcare information electronically. These standards are set to be released in October 2018.

2) Before any RFPs go forward for EHR procurements, each agency must determine whether an existing EHR solution will substantively meet the business needs without increased cost from customization. Once this research and determination is complete, the respective Agency Head and Secretary, the Secretary of Administration, and the Secretary of Finance must concur and

approve the plan. All contracts developed for EHR procurements must be Joint or Cooperative and GSA Contract IT Procurements so that others may utilize the contract with their own statement of work.
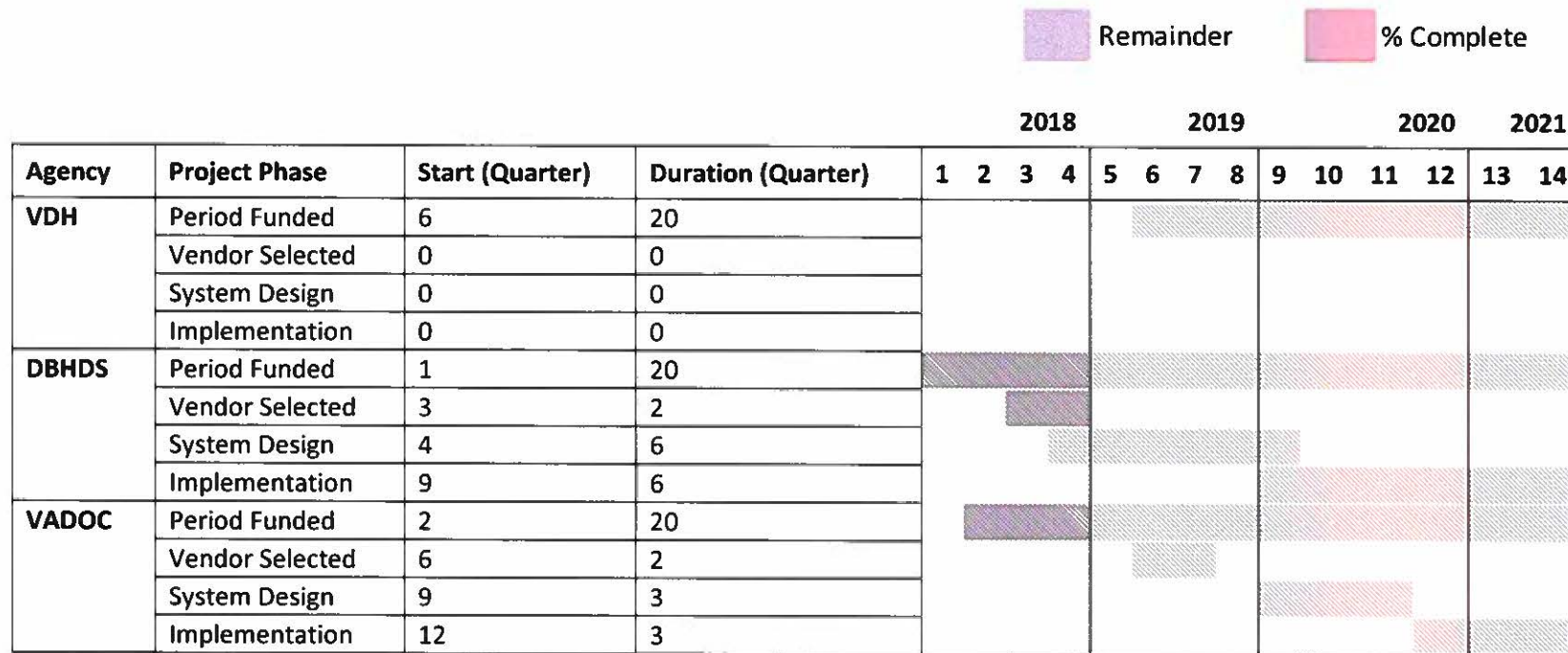
3) All RFPs must require vendors to demonstrate interoperability and real-time data exchange with other EHR systems.

In addition, the workgroup recommends:

4) The Chief Data Officer develop a single data sharing trust agreement for use among state agencies.

5) The workgroup continue to meet and more fully evaluate the cost and benefits of implementing a single, statewide EHR system or, alternatively, focus on interoperability

C.3. 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 following overview outlines workgroup members' costs and expected timelines relative to the implementation of EHR solutions. This information is subject to change, as each project progresses.

Remainder   % Complete

Agency	Project Phase	Start (Quarter)	Duration (Quarter)	2018 1 2 3 4	2019 5 6 7 8	2020 9 10 11 12	2021 13 14
VDH	Period Funded	6	20				
	Vendor Selected	0	0				
	System Design	0	0				
	Implementation	0	0				
DBHDS	Period Funded	1	20				
	Vendor Selected	3	2				
	System Design	4	6				
	Implementation	9	6				
VADOC	Period Funded	2	20				
	Vendor Selected	6	2				
	System Design	9	3				
	Implementation	12	3				

*For VDH, some timelines have yet to be established.

Agency	General
VDH	$ 4,500,000
DBHDS*	$ 61,964,786
VADOC	$ 5,000,000

*DBHDS costs are calculated using a four-year aggregate of committed funds.

Virginia Department of Behavioral Health and Developmental Services

Overview and Requirements

Major Areas of Responsibility

- Virginia's publicly-funded behavioral health and developmental disabilities services system is comprised of 40 locally-run community services boards, 13 state facilities and over 1,100 private providers. The system serves children and adults who have or who are at risk of mental illness, serious emotional disturbance, developmental disability or substance use disorders. In FY 2017, 216,901 unduplicated individuals received services in the publicly operated behavioral health and developmental services system. Behavioral health includes both mental health conditions and substance use disorders.
- DBHDS operates 13 state treatment facilities:
  - DBHDS operates eight state hospitals for adults with a current statewide census of 1,337 that serve adults with behavioral health disorders: Catawba Hospital (near Salem), Central State Hospital (Petersburg), Eastern State Hospital (Williamsburg), Piedmont Geriatric Hospital (Burkeville), Northern Virginia Mental Health Institute (Falls Church), Southern Virginia Mental Health Institute (Danville), Southwestern Virginia Mental Health Institute (Marion), and Western State Hospital (Staunton).
  - DBHDS operates the Commonwealth Center for Children and Adolescents (CCCA) in Staunton for children with serious emotional disturbance, current census is 33.
  - DBHDS currently operates two state training centers with a statewide census of 150: Central Virginia Training Center (near Lynchburg) and Southeastern Virginia Training Center (Chesapeake).
  - DBHDS also operates Hiram Davis Medical Center in Petersburg (current census of 57), which qualifies as a training center and provides medical and skilled nursing services to state hospital patients with serious physical and medical care needs.
  - DBHDS operates the Virginia Center for Behavioral Rehabilitation (VCBR) in Burkeville, with a current census of 443. VCBR provides secure evaluation and rehabilitation services to individuals found by the court to meet sexually violent predators (SVP) criterion.
- DBHDS employs 6,873 people statewide. Of those, 6,077 are full time and 796 are wage.
- DBHDS protects individuals receiving public or private behavioral health or developmental services from abuse, neglect, or exploitation and assures that public and private services providers adhere to basic standards of quality. DBHDS licenses over 1,100 private providers. DBHDS also has a legislative mandate to assure and protect the legal and human rights of individuals receiving services at state facilities or in programs operated, licensed or funded by the department. In addition, DBHDS supports a network of case managers operated by CSBs across the state.

- The DBHDS central office provides strategic direction and financial resources to and operational and financial oversight of the public behavioral health and developmental services system. DBHDS works to strengthen partnerships with state agencies, advocates, individuals, family members, and others to raise awareness of the needs and challenges of individuals with mental health or substance use disorders or developmental disability and to promote access to and continuity of needed services.

In 2011, the Siemens Soarian EHR was chosen for DBHDS because it offered the best cost, function, and ability to customized the EHR to meet behavioral health needs. At the time, there were no large, acute EHR systems that met behavioral health needs as part of the model system. Soarian was acquired by Cerner in 2015. Cerner continues to maintain Soarian. However, since 2011, Cerner has built behavioral health functionality in the model Millennium system and is committed to continuous development. DBHDS influenced the design of Cerner Millennium based on our use of Soarian. Millennium offers a comprehensive hospital EHR that includes behavioral health functions. DBHDS will be implementing Millennium over the next three years in all hospitals (12).

Virginia Department of Health (VDH)

Overview and Requirements

I. Summary

The Virginia Department of Health (VDH) consists of 33 centrally administered Health Districts and two locally administered Health Districts (Arlington and Fairfax). These Districts are located throughout 119 different jurisdictions across the Commonwealth of Virginia. The map below depicts the 35 Health Districts throughout the state.
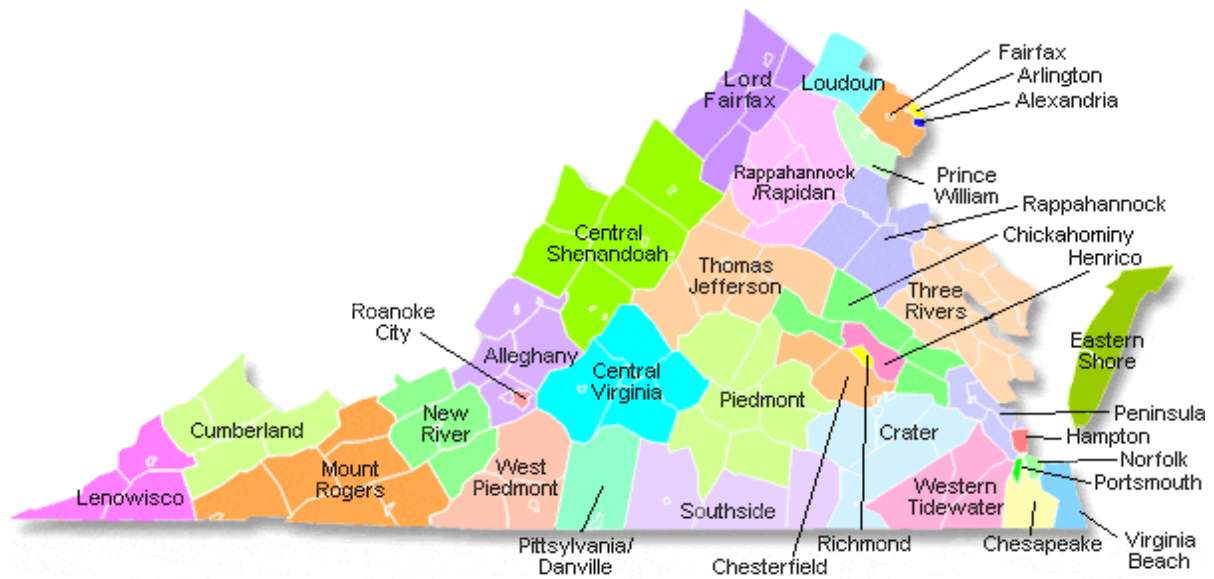
VDH is also comprised of 91 Local Health Departments and 38 satellite offices, the latter of which primarily focus on Environmental Health and Women Infants and Children (WIC).

In terms of adopting an agency-wide Electronic Health Records System (EHR), VDH's broad and multifaceted nature necessitates a carefully planned and robust solution for managing patient health data. Business needs across all previously-mentioned programs and services must be considered in order to ensure successful implementation and accurate cost analysis.

To this end, the following contents further list out VDH's operational landscape, program areas and focuses, and a current analysis of agency business requirements. These contents do not represent an exhaustive list of agency functions or requirements, but rather serve to illustrate its intricate and widespread presence across a myriad of the Commonwealth of Virginia's public service offerings.

II. VDH Office and Health District Services

VDH Offices	Health District (Clinical Services Provided)
Administration	Dental Clinic
Anatomical Program	Dental Varnish
Commissioner	Well Child Clinic
Drinking Water	School Physicals
Emergency Medical Services	Personal Care/Respite Care
Emergency Preparedness	Women, Infants and Children
Environmental Health Services	Case Management – Community Health
Epidemiology	Case Management – Home Visiting
Family Health Services	Case Management – Baby Care
Health Equity	Case Management – Every Woman's Life
Human Resources	Family Planning Clinic
Internal Audit	Pap Smear
Licensure and Certification	Pregnancy Tests
Medical Examiner	Prenatal Clinic
Newsroom	Sexually Transmitted Infection Contact Tracing
Public Health Nursing	Sexually Transmitted Infection Clinic
Radiological Health	Communicable Disease Investigation
Shellfish Sanitation	Tuberculosis Testing
Vital Records	Tuberculosis (active cases)
---	Latent Tuberculosis Infection
---	Immunizations
---	Travel Immunizations
---	Refugee
---	AIDS Drug Assistance Program

III. VDH Programs and Focus Areas

VDH Programs	
Licensure and Certification	*Drinking Water*
Health and Equity	*Emergency Preparedness and Response*
Internal Audit	*Commissioner*
AIDS Drug Assistance	Disease Fact Sheets
HIV/AIDS Surveillance	Food Safety
HIV Care Services	Healthcare-Associated Infections (HAI)
HIV Prevention Program	Influenza
Sexually Transmitted Disease	List of Reportable Diseases
Viral Hepatitis	MRSA
Environmental Epidemiology	Reportable Disease Regulations
Childhood Lead Surveillance	Reportable Disease Surveillance Data
Beach Monitoring and Swimming Advisories	*Child and Family Health*
Fish Consumption Advisories	Child Health
Harmful Algal Bloom Monitoring	Reproductive Health
Public Health Toxicology	Dental Health
Rabies Control	*Policy and Evaluation*
Toxic Substance Surveillance	Virginia Cancer Registry
Vectorborne Disease Control	*Prevention and Health Promotion*
Waterborne Hazards Control	Cancer Prevention and Control
Immunization	Child Passenger Safety
Data and Statistics	Diabetes and Prediabetes
Disease Surveillance	Domestic and Sexual Violence Prevention
Perinatal Hepatitis B Prevention	Free Breast and Cervical Screenings
Virginia Immunization Information System	Healthy Communities
Virginia Vaccines for Children Program	Healthy Eating and Active Living Program
Chief Medical Examiner	*Emergency Medical Services*
Bedding and Upholstery Inspection	*Epidemiology*
Childhood Lead Poisoning Prevention	Disease Prevention
Food and Restaurant Safety	Environmental Epidemiology
Onsite Sewage	Immunization
Shellfish Sanitation	Surveillance and Investigation
Pharmacy Services	Pharmacy Services
Health and Equity	Tuberculosis & Newcomer Health

IV. EHR High Level Requirements under Evaluation (Attachment A, incomplete draft requirements)

Practice Management	Patient Appointments and Registration	May include: patient scheduling, intake, eligibility, referrals, financial information, consents
	Clinical Services	May include: DBE charting, family history (PFHS), History of Present Illnesses (HPI), Review of Systems (ROS), progress notes, assessments, care coordination, treatment planning, medical decision making (MDM), allergies, lab orders, lab tracking, radiology, alerts
	Billing and Accounts Receivable	May include: 3rd party billing, patient self-pay, ICD10, CPT, HCPCS coding, revenue, deposit and AR tracking per DOA requirements, billing by services and programs, F&A interfaces, fee options (flat, sliding, no), Debt Setoff interface, global account management, HIPPAA compliant claims and remittance processing, patient payment plans, account write-offs, billing control at state and district levels, HICFA 1500/ADA billing, electronic agreements for payers, statewide fee schedule maintenance, transaction research and review
Department Operations	Vaccine and Drug Inventory	May include: vendor, inventory and supply usage management, automatic reorder triggers, patient encounters and services linkages
	Time and Effort	TBD
Primary Clinical Services	General Health Services	May include: Gynecology, Occupational and Employee Health, Adult Health Management, Prenatal Clinic, Teen Wellness Clinic, Child Wellness Clinic
	Case Management Services	May include: Baby Care Program, Home Visiting, Community Health Worker, Every Women's Life, Maternal and Child Health Case Management, Chronic Health
	Tuberculosis Clinic	May include: Active TB cases, LTBI cases (not infectious), TB contact tracing, TB screening and testing
	STI Clinic	May include: providing confidential testing, education, treatment and information on Sexually Transmitted Infections (STIs) including HIV hepatitis B and C viruses
	Refugee Clinic	May include: health history, physical assessment, laboratory work, health education, administration of medications and vaccines. communicable disease testing , school physicals
	Family Planning Services	May include: birth control, breast exams, pap smears, colposcopies, nutrition information, safe sex information, sexually transmitted infection (STI) screening and treatment, preconception health

		information, pregnancy tests, family planning counseling
	Laboratory Services	May include: sharing consumer-specific clinical information between providers and laboratories utilized by VDH including DCLS, LabCorp and Quest
	Pharmacy Services	May include: prescribing, dispensing and managing medications for clients and providers including the VDH Central Pharmacy and various local pharmacies.
	Immunization Clinic	May include: providing services aimed at preventing and decreasing the rate of Vaccine Preventable Diseases including school required vaccinations, travel vaccinations, non-routine vaccinations (including Rabies), and any others recommended by the Advisory Committee on Immunization Practices (ACIP); recording Information in the Virginia Immunization Information System
Secondary Clinical Services	Communicable Disease	May include: ADAP, other HIV related services and other communicable diseases.
	Community Education	May include: Car Seat program (LISSDEP), Safe Sleep Program, Breastfeeding, Tobacco Cessation and Chronic Disease programs
	Lead	May include: Providing lead testing, monitoring, treatment, and follow-up for children who have suspected or definite lead exposure and recording the information in the Virginia Electronic Disease Surveillance System (VEDSS).
	Dental	May include: Remote Hygiene Program, Dental Clinic
	Personal Care/Respite Care	May include: Personal Care, Respite Care

In addition to the items mentioned above, VDH requires interfaces to several mission critical applications already in use at VDH. These include the syndromic surveillance applications, Cardinal, the statewide financial system, several registries including the immunization registry and the vital records registries and to WebVision, VDH's in-house application that is currently used to manage portions of patient care.

ABOUT THE VIRGINIA DEPARTMENT OF CORRECTIONS

The Virginia Department of Corrections operates secure facilities and Probation and Parole offices to provide care and supervision to approximately 104,000 individuals, including almost 30,000 offenders in custody in VADOC facilities; almost 67,000 supervised in the community by Probation and Parole staff; and approximately 7,400 state responsible offenders housed in local and regional jails.* At 22.4 percent, Virginia has the lowest three-year reincarceration recidivism rate among the 45 states that report this rate for State Responsible (SR) offenders. The use of evidence-based re-entry programming and treatment during an offender's incarceration and supervision in the community after release from custody directly impacts Virginia's recidivism rate.

For FY2018, the Virginia General Assembly authorized 12,230 full time equivalent (FTE) positions for the Virginia Department of Corrections (VADOC). Of these positions, 11,258 FTE positions were filled as of December 31, 2017. As the largest state agency, the Department has a vacancy rate of 8 percent, with 972 FTE positions vacant as of December 31, 2017.

Organizational Structure

The Virginia Department of Corrections operates 26 major institutions, eight field units, six work centers, 43 Probation and Parole districts, five Detention and Diversion Centers, three Regional Offices, one Academy for Staff Development and one Department headquarters. In addition, Virginia Correctional Enterprises (VCE) maintains 30 different plants in 16 physical locations. Units coordinate their individual roles and functions and work closely together to promote the overarching "Oneness" of the Department, thereby contributing to the successes and goals of the Agency. The organizational units are structured under the Director's Office; Division of Administration; Division of Operations; and Division of Programs, Education and Re-entry.

	FY2017	FY 2017 Per Capita	FY2016	FY 2016 Per Capita	+(-) Per Capita
Personal Services	$587,965,121	$20,354	$574,583,155	$19,630	$724
Direct Inmate Cost	192,125,717	6,651	191,953,467	6,558	93
Indirect Cost/Recoveries	39,559,965	1,369	42,890,086	1,465	(96)
Continuous Charges	31,442,018	1,088	28,410,252	971	118
Property Improvements/ Equipment	14,579,708	505	10,944,427	374	131
Total	$865,672,529	$29,967	$848,781,387	$28,997	$970

Offender Services

Services are aligned within the VADOC so that offenders with long sentences or behavior problems receive programs that promote positive prison adjustment. Those offenders nearing release receive programs intended to reduce recidivism. Services are also offered to offenders under Community Supervision so that they can continue a successful re-entry into the community.

Here are some of the offender services that VADOC provides:

Health Services Unit

The Health Services Unit functions through a corps of highly trained professionals who are well educated in the goals and techniques of modern health science. It employs approximately 1,200 dedicated healthcare professionals, made up of both VADOC staff and contractors. Within the Correctional environment, they provide both routine and urgent healthcare to all offenders. There are approximately 750,000 patient visits annually, including nurse and doctor sick calls, chronic care visits, dental visits and other specialty appointments. They also operate 189 infirmary beds, providing a higher level of service to offenders who need more care. There are also secure units in two hospitals and relationships with many other hospitals and clinics for inpatient or outside care.

Mental Health

Over one-fourth of the institutional population has been assessed as having mental health issues. In addition to staffing the Agency's licensed units, Qualified Mental Health Professionals (QMHPs) offer core and outpatient services to all offenders at the major facilities. These services include crisis management, group therapy, medication management, monitoring, screenings, assessments and brief individual solution-focused sessions on a variety of topics. We are currently developing and implementing specialty housing units (pods) for the seriously mentally ill (SMI) population, as well as for offenders who are vulnerable for other reasons. We have increased the number of QMHPs working in the Probation and Parole districts. These district Mental Health Clinicians serve as community liaisons, consultants and trainers to address higher recidivism rates for offenders with mental health issues.

Mental Health Groups

Therapy groups are designed to facilitate management of symptoms and improve functioning levels. Groups available may include Distress Tolerance Skills, Coping with Stress, Interpersonal Effectiveness Skills, Emotional Regulation, Houses of Healing, Seeking Safety, Mood Management, Mind over Mood, Mindfulness Skills, Symptom Management, Illness Management and Recovery, Social Skills, Trauma Resolution, Traumatic Stress and Resilience, and Self Management.