

# Information Systems

2016 Annual Report



## Message from the vice president and CIO

For nearly 12 years now, as your CIO, I've had the pleasure of reflecting on the achievements of an exceptional IT team, as we share those moments through our annual reports. In this, my final report, I'd like to also add what a pleasure and singular privilege it has been for me to share in the accomplishments of such an amazing group of professionals. The deeds and dedication of our men and women have continually driven and astounded me — day in and day out — over the past 12 years, and I will miss sharing in those efforts.

It is our hope that, from the contents of this report, you will appreciate the significant role the Department of Information Systems increasingly plays in the use of data and information to improve business operations, organizational efficiencies and, most importantly, patient care. Through our accomplishments, we've proven that IS is about much more than just the underpinnings of such things as infrastructure, processing, communications and storage, and is a true partner to our clinical and business colleagues, helping to optimize how they work, as together we solve real-world problems. Everything we do is directly aligned with VCU Health's core mission and vision, and to that end — like the whole of the organization — IT is imbued with a culture and understanding that centers on high reliability.

In my final message as your CIO, I would like to assure you that innovation has always been, and will continue to be, a key driver in the outcomes we achieve for IT-enabled clinical and business changes. At the same time, our department will always strive to balance the needs for available information (especially at the point of care) with a commitment to protect and secure that information to the highest levels of patient privacy. The development of improved EMR interoperability both facilitates and challenges that balance, especially as we strive for optimal continuity and flow of clinical data among such broad ranging venues of care. As your CIO, one thing I've learned is that this team is up for those challenges.

On that note, I'd like to share with you our accomplishments from 2016 across the following areas:

- Community Memorial Hospital at VCU Health (our single largest initiative)
- Clinical informatics and applications
- Departmental systems and integration
- IS support services
- Project management office
- IT security
- Technology and engineering services
- Telemedicine
- Enterprise analytics
- Business and financial systems



Richard Pollack, M.S., CPHIMS, FHIMSS  
Vice president and CIO  
Information Systems  
Virginia Commonwealth University Health System



# Making life better, by design

Not just design — but relevant design — drives everything we do.

In IS, we're innovative. We're forward thinking and proactive. But it isn't our job to assume what people need or want. Instead, we ask and (more importantly) we listen. Then we design with purpose around our patients' needs.

At VCU Health, this patient-centered approach informs the services we create, fosters the best patient experiences and helps to build better facilities as we embrace the changing landscape of health care.

For more than 180 years, our mission has been to teach and explore, so we can heal and improve the lives of Virginians. And that will never change. But like our name, our focus has shifted and expanded from not only treating the sick and injured, but also to maintaining health and preventing diseases before they happen.

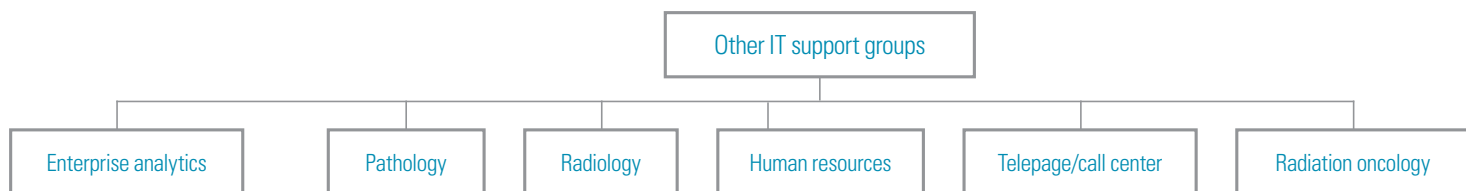
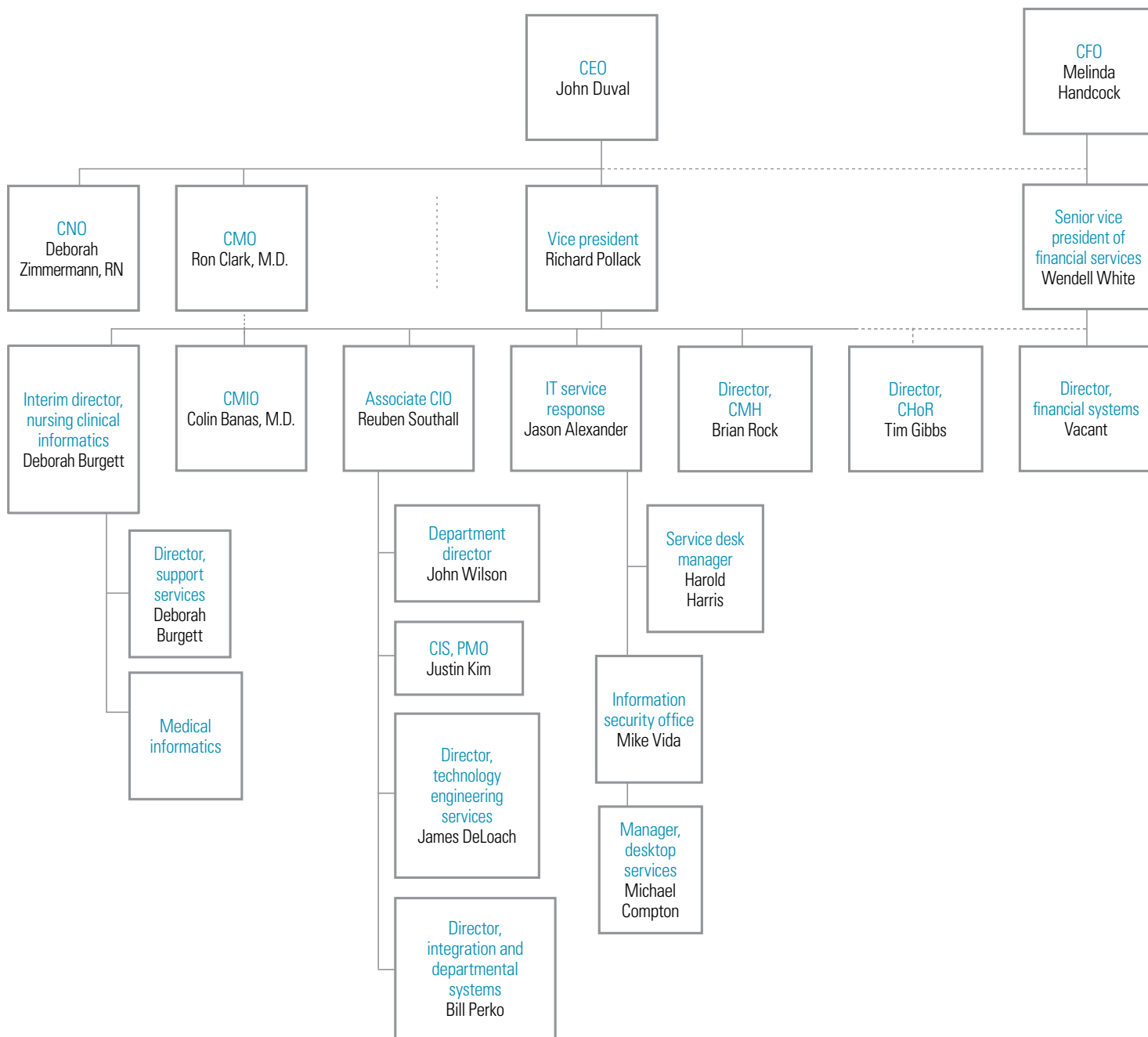
Everything we do has a singular purpose: designing (and implementing) a better tomorrow.

---

## OUR MISSION REMAINS THE SAME, AS WELL AS OUR GUIDING PRINCIPLES:

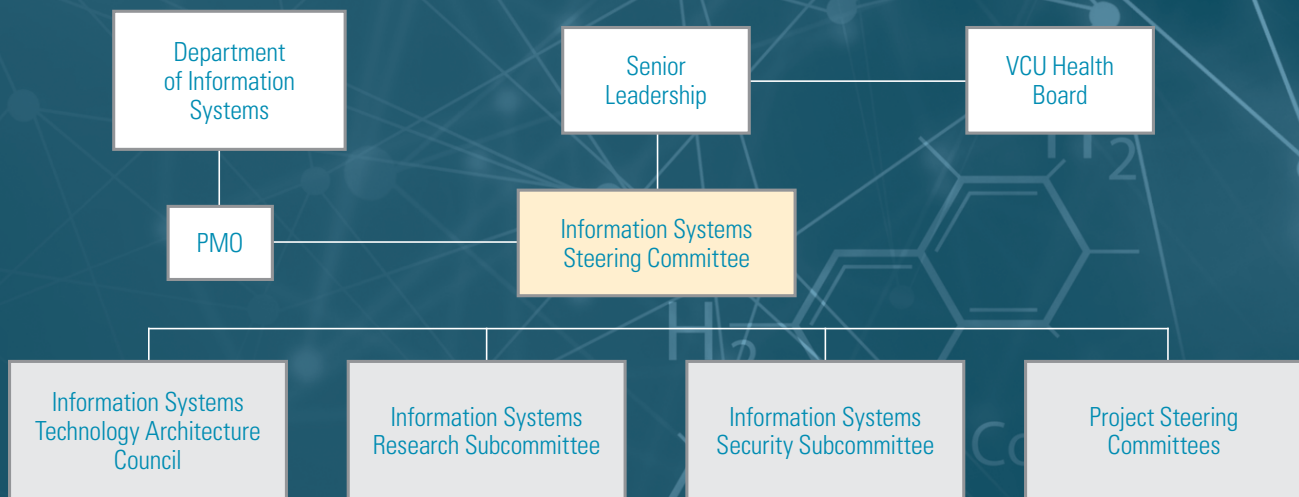
- An enterprise information governance process will be followed, as directed by the IS Steering Committee
- Policies and procedures ensuring accountability and auditability will be created and adhered to
- Metrics and key performances will be tracked, managed and distributed
- Explicit protocols will be followed to assess the impact of new and upgraded systems on information integrity and data quality, including all implementations, upgrades and changes
- Active quality control and improvement processes will be implemented as part of our course of day-to-day work efforts
- Confidentiality and security are assessed as part of our day-to-day work efforts
- Rigorous evaluation of data architecture, content and conformance to standards will be part of all implementations, upgrades and changes
- Principles of high reliability will be applied to everything we do

# IS organizational chart



The role of governance is to ensure the results of an organization's business processes are in order to meet its strategic goals and requirements. Governance also involves establishing measurement and control mechanisms that merge with employees' day-to-day processes, enabling them to effectively carry out their roles and responsibilities.

With these guiding principles in mind, we rely on the concepts of responsibility, accountability, communication and empowerment, otherwise known as RACE.



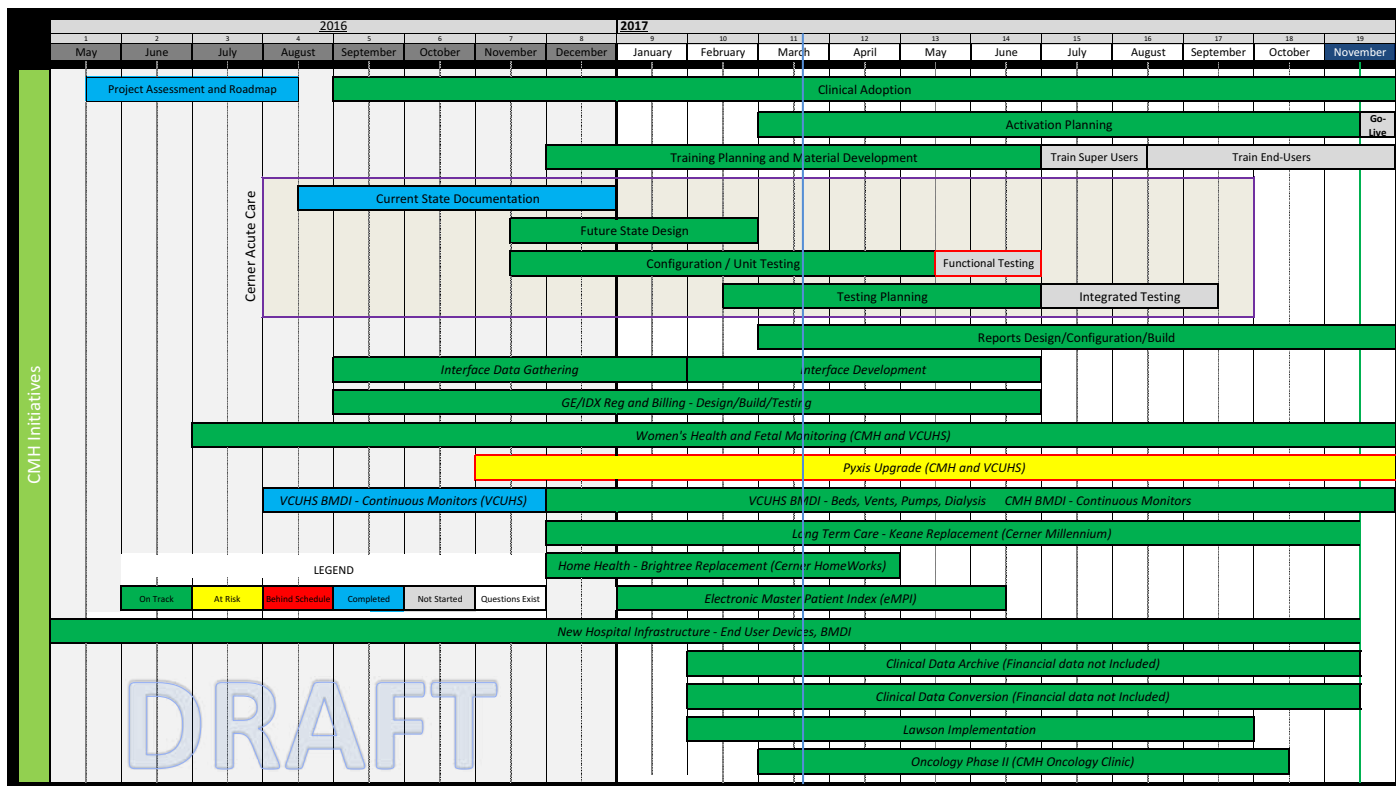
# Community Memorial Hospital (CMH) at VCU Health



At CMH, the role of Information Systems includes performing the tasks and activities needed to efficiently and effectively merge IT infrastructure (i.e., network, data centers, clinical applications, business applications and computing devices). We're truly proud of how we've accomplished this in 2016, bringing together the best of CMH and VCU Health.

But we aren't done yet. Active projects include:

- Acute care
- Long-term care
- Home health
- GE/IDX
- Lawson
- Hospital Infrastructure

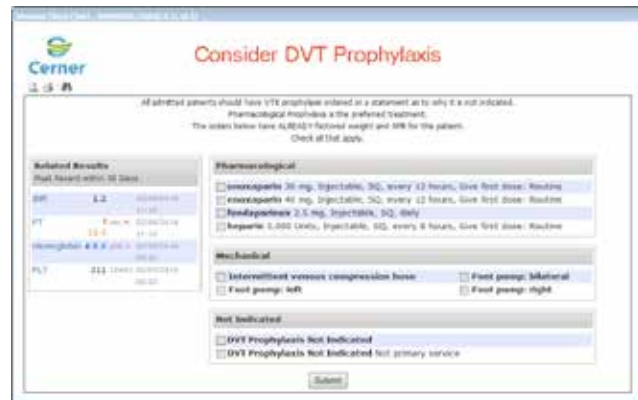


# Clinical Informatics and Applications

As the Department of Information Systems for VCU Health, providing application and system support is at the heart of what we do. Successful interoperability and interfacing among clinical users and most of the departmental systems takes an entire department, including individuals with specialized skills at the application and systems levels. Thanks to the outstanding collaboration of teams, this function represents one of our most significant areas of accomplishment.

Here's a look at what we did in 2016, including many of our plans going forward:

- MyPreventiveCare
- eRenewal for prescriptions
- Numerous rules and alerts to enhance patient safety:
  - DVT (deep vein thrombosis) rule
  - LifeNet automated notification
  - Insulin and no diet
  - Height and weight deviation greater than 20 percent
  - Ventilator protocols
- Meaningful Use Program: Successful Stage 2 attestation, including total dollars to date across hospital and practice plan of \$32M
- Smart anesthesia monitor
- Dialysis bundle
- Clinical trials notification process within Cerner
- Nursing intake redesign
- Foley removal
- Inpatient rehab therapy charges/minutes, Phase 2 - speech charges in iView
  - Inpatient rehab therapy charges/minutes, Phase 3 - report
- Electronic Warfarin education
- All orders reconciliation
- Sepsis agent/sepsis mortality report
  - Cerner report
  - Enterprise analytics report
- ED (Emergency Department) sepsis tool and reporting
- Pediatric septic shock
- LifeNet - Neuroscience ICU assessment band update and notification rule (discussion of brain death testing)
  - Neuroscience and medical respiratory ICUs
  - ED sepsis alert



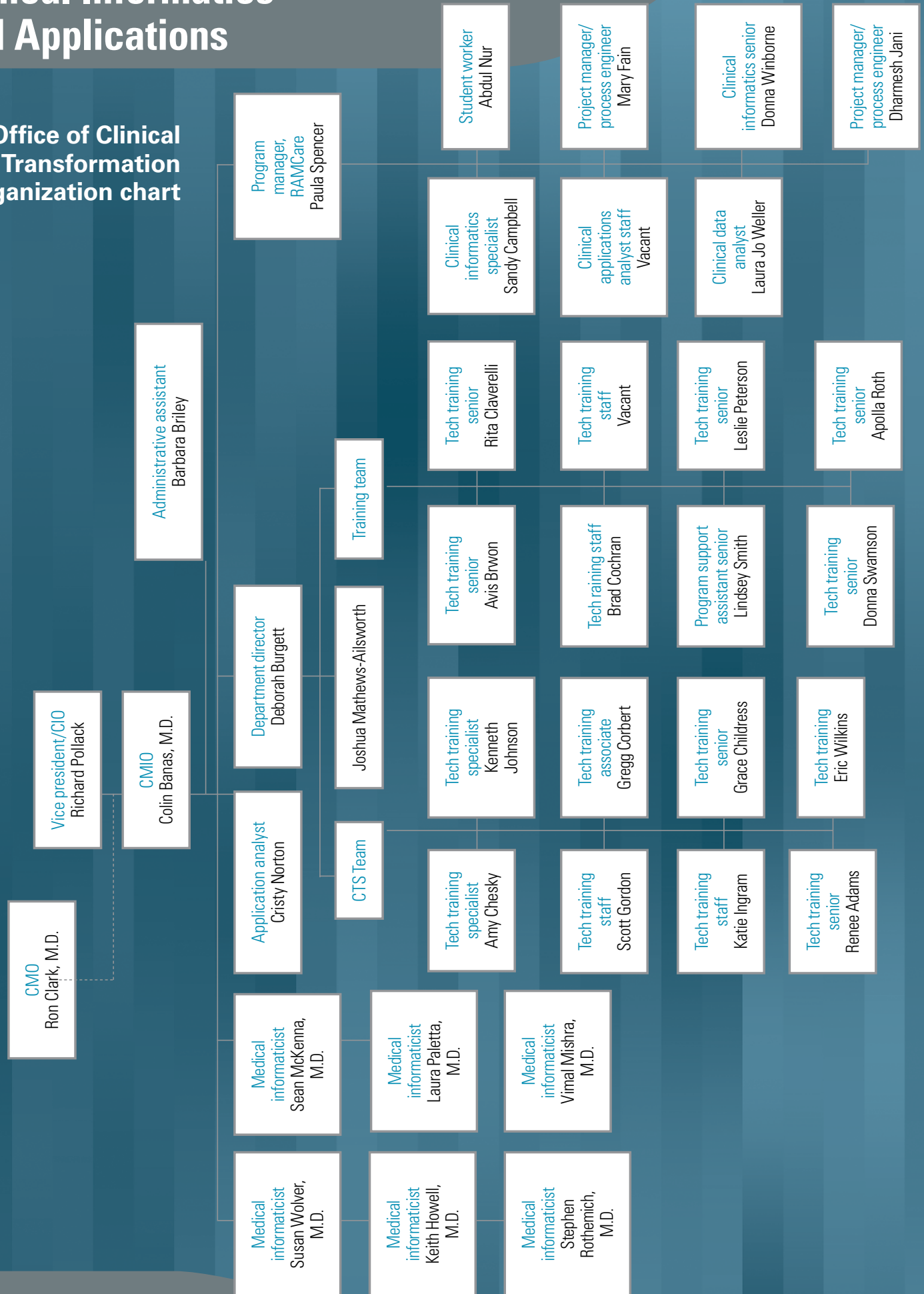
- New isolation types in Cerner (needed to identify patients with higher level of contact precautions; additional prevention measures need to take place per Centers for Disease Control and Prevention)
- ED and CDU depart summary updates, including:
  - Completed pending labs
  - Completed pending diagnostics, including RAD, MRI (Magnetic Resonance Imaging) and CT (Computerized Tomography scan)
  - Verbiage for QHIP (Quality Health Implementation Plan), including "Where You Go for Your Care Matters" text
  - MU (Meaningful Use) tokens for smoking, immunizations and allergies
  - Added dosing weight to the banner bar

OR optimizations and enhancements include:

- EP/cath lab: Cerner scheduling and tracking board updates
- Stony Point 9109 Building, Cerner scheduling for Stony Point Gynecology: Implemented central sterile, IVF (in vitro fertilization) procedure room
- Temperature monitoring of all freezers/refrigerators (The Joint Commission)
- Brain lab Trauma Orthopedic Implant templating system implemented
- SurgiNet build for sedation cases performed in procedural areas
- Anesthesia documentation build to meet Centers for Medicare and Medicaid Services (CMS) requirements for billing
- New documentation to meet CMS requirements for billing postoperative pain management by anesthesiologists
- Smart Anesthesia Manager (SAM) implementation, including automated alerts for active anesthesia case regarding antibiotic re-dosing, invasive line placements and gas usage

# Clinical Informatics and Applications

## Office of Clinical Transformation organization chart



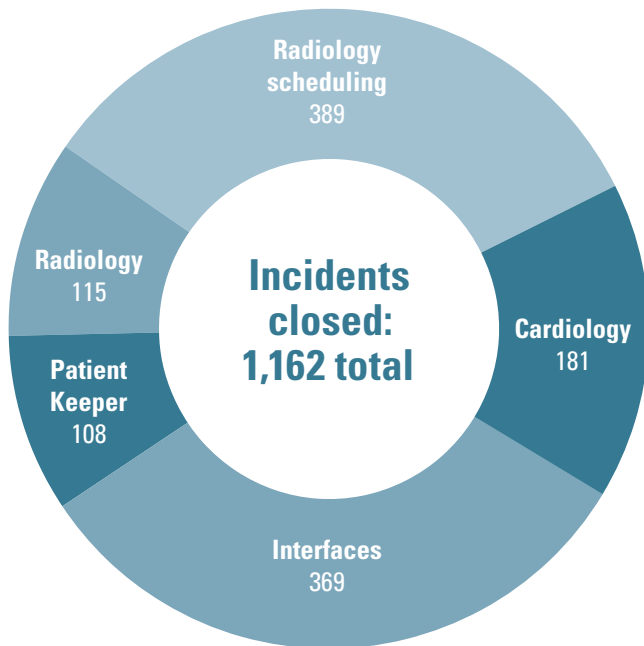


# Departmental Systems and Integration

We went a long way toward bringing it all together in 2016, including these accomplishments:

- Supported two full departmental system upgrades for cardiology and radiology
- Implemented a total of 30 interface-related projects
- Among system maintenance/support and enhancement incidents: Overall, the number of incidents increased by 58 percent, while the number of change orders completed increased by 61 percent, including:

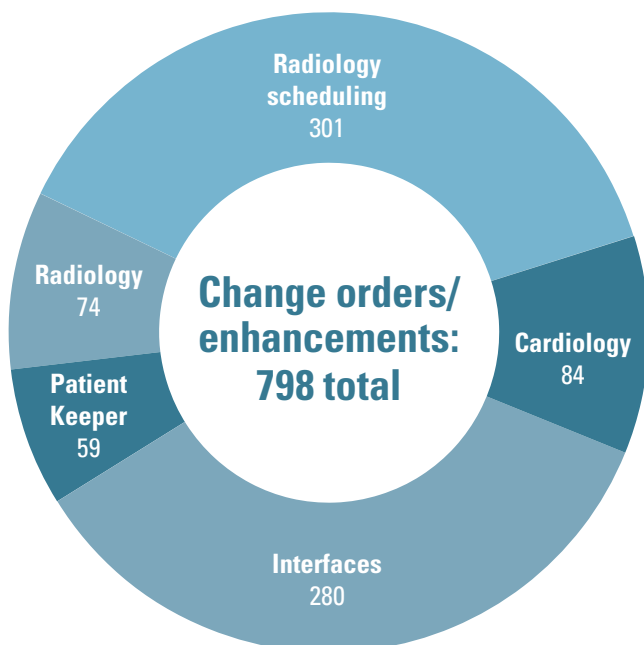
- AGFA PACS system implemented for cath-EP images
- Cerner scheduling for radiology implemented
- CHoR Pavilion implemented
- Cerner clinical trials system and link to OnCore implemented
- Cardiology systems future direction drafted and RFP developed
- Master Patient Index requirements developed and product chosen
- Clinical Data Archive requirements developed and product chosen
- Biomedical device integration (BMDI) capabilities extended house-wide



## What's next?

Here are some of the key goals for departmental systems and integration in 2017:

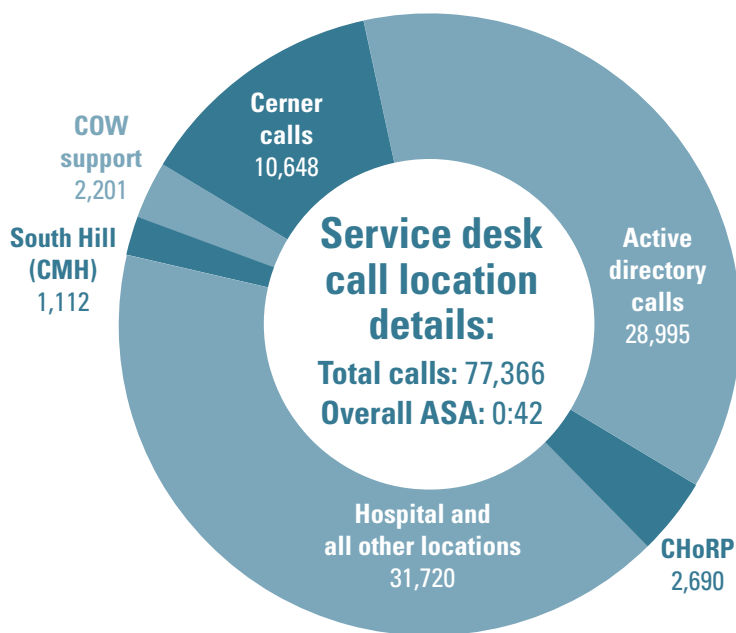
- Master Patient Index – Implement and use to onboard CMH and outreach patients
- Clinical Data Archive – Implement for CMH and outreach historical records
- CMH-related initiatives include supporting new hospital opening (via interfaces and BMDI, as well as new cardiology and radiology systems)
- BMDI expansion – dialysis and VitalsLink implementation
- Health Information Exchange (HIE) – Linkage to MedVirginia and CommonWell



# IS Support Services

With dependence on information technology steadily increasing, along with the need for constant improvement and reliable service, our team continues to prove itself through industry-based key performance indicators. KPIs are industry measures for overall performance in everything from service recovery, first contact resolution, customer satisfaction and abandonment rate to outage reduction, enterprise change management (change management policy approved as strategic HR competency component) and Information Technology Service Management (ITSM) documented reporting.

Here are just some of the KPI-proven results we produced in 2016:



## Service Desk notable 2016 accomplishments

- Abandoned rate reduced to 8.31 percent (Organizational Strategic KPI Goal: 12 percent)
- 1,565 Service Desk Manager knowledge base articles entered
- Average speed of answer: 0:42 seconds
- First Call Resolution: 75 percent
- 122,507 Service Desk records initiated via phone
- 18,454 Service Desk records initiated via electronic web submittal
- Customer Survey Satisfaction Scores: 93 percent (“extremely satisfied” or “satisfied”)

## Service Desk 2017 focus areas

- SDM enhancements – mobility functionality (iPad, iPhone, tablet, Android devices)
- Incorporation of enterprise change management policy into IT staff HR performance evaluations
- Robust employee satisfaction survey and Service Desk hospital rounding
- Significant increase in enterprise IT brown bag lunch sessions
- Installation of fully functional enterprise password reset tool (KeePass – security initiative)
- Reduce overall wait times by 30 seconds
- Increased first-contact resolution by 3 percent

## Unplanned Enterprise Outages

**336**  
CY 2015

**238**  
CY 2016

**28.2%** enterprise outage reduction

## 2016 Service Desk Avaya Call Data

Split/skill	Incoming calls	Aband calls	Abandon rate	Avg ans speed	Avg abandon time	Avg call handle time
<b>Cerner issues</b>	10,648	763	7.17%	0:28	2:13	5:57
<b>Cow support</b>	2,201	482	21.90%	0:23	5:57	2:42
<b>Login/password reset</b>	28,995	2,014	6.95%	0:42	3:02	5:00
<b>Chorp</b>	2,690	269	10.00%	0:39	1:37	5:25
<b>Service desk default</b>	31,720	2,683	8.46%	0:39	2:17	5:40
<b>Southhill</b>	1,112	216	19.42%	0:30	1:08	4:50
<b>Totals:</b>	77,366	6,427	8.31%	0:42	3:05	4:56
<b>Monthly avgs:</b>	6,447.17	535.58	8.31%	0:42	3:05	4:56

# Project Management Office (PMO)

The PMO serves the key role of supporting the intake, approval and execution of most of our projects. Currently, this team of certified project management professionals (PMPs) is primarily outsourced; in 2017, we're moving to deepen our integration by bringing many of those resources in-house.

Meanwhile, the PMO is accountable to the key stakeholders, as well as the customers our projects serve. By having that expertise on staff and supplementing with outside resources only when necessary, we believe that we can make those resources an even more integral part of VCU Health's services.

As we work to bring PMO resources in-house in 2017, key focus areas include:

- Project leadership, support, stakeholder management and documentation
- Reporting of:
  - Project metrics
  - Resource management
  - Project dashboards
- VCU Health governance support for:
  - Project request management
  - IT steering preparation
  - Phase Zero (a deep and detailed dive into understanding)
- Project management training
- Program development and continuous improvement

## Major IS Projects for Calendar Year 2016

Project name	Go-live date
Bone Marrow Transplant	Rolling go-lives until July 2017
Cerner oncology – Head and Neck	March 21, 2017 (expected)
Cerner Oncology – Multiple Myeloma	Nov. 29, 2016
Cerner Oncology – Leukemia/ MDS/Outpatient Heme	Jan. 31, 2017
Cerner Oncology – Breast	Nov. 1, 2016
Cerner Oncology – GI, Lung, Lymphoma	Aug. 26, 2016
Health Information Exchange – Bon Secours	Feb. 28, 2017
MyPreventiveCare	Dec. 20, 2016
Blood Transfusion Documentation	Dec. 13, 2016
Nursing Optimization – Admission History	Nov. 29, 2016
Stony Point 9109 Opening	Nov. 14, 2016
BMDI – Phillips Continuous Vitals Monitors	Nov. 1, 2016
Radiology Scheduling – Post Go-Live Revisions	July 27, 2016
Inpatient Rehabilitation – Interim Revisions	July 27, 2016
Electronic Data Interface for Transplantation Upgrade	April 27, 2016
Nurse Scheduling	Feb. 15, 2016
SMTP Relay Migration	July 1, 2016
WebEx Rollout	April 22, 2016
House Calls (Cerner Documentation)	May 13, 2016
Q-Path Cerner Interfaces	June 15, 2016
CMH – Storage Consolidation	June 17, 2016
Parkinsons Clinic	July 13, 2016
vBlock Replacement for VMWARE	Feb. 28, 2017
Expansion and Upgrade of the Primary Data Storage Appliance	Oct. 1, 2016
Deployed Internet Explorer to the Entire Organization	Sept. 30, 2016

When it comes to information systems, one of the first roles that comes to mind for most people is information security, and for good reason. With sensitive employee and patient data at stake, this is one of the most important underpinnings for VCU Health.

The IS Security group's mission directive is broad, including managing the risks for all data throughout the organization. And because many IT systems and applications are managed in a decentralized fashion, the group's "defense in depth" strategy must extend to an entire enterprise, in order to properly secure all sensitive information.

We're proud to report that, in 2016, our IS Security group improved its protections by:

- Completed Phase 1 web content filtering, which now blocks more than 800,000 malicious webpages per month
- Integrating Information Security tools into our Security Information and Event Management (SIEM), as a service environment providing 24-hour, seven-days-a-week monitoring
- Redeveloping the vulnerability management environment
- Developing the information security framework in partnership with VCU

### By the numbers

**139** Risk assessments performed

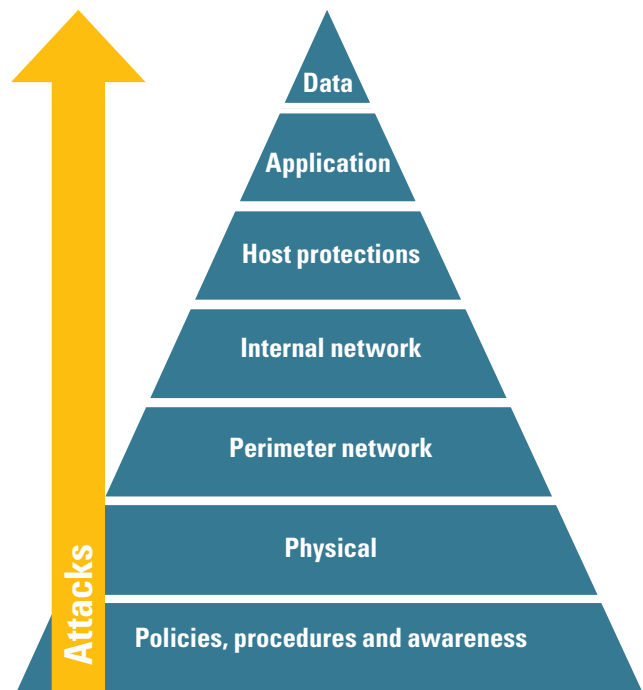
**141** Security incidents investigated and mitigated

**802** Access management requests filled

Looking ahead to 2017, some of our key objectives include:

- Phase 2 web content filtering
- Full two-factor authentication for all remote-access scenarios
- Fifteen newly published information security policies
- File-level-based change detection
- Continued integration of sources into the offsite monitoring environment
- Improved threat analytics

### Security defense in depth: Active defenses at VCU Health



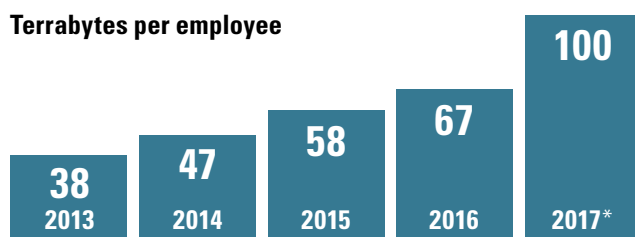
# Technology and Engineering Services (TES)

When it comes to technology infrastructure (including a campus-wide network of servers and storage), considerable investment and work are required to provide reliable, secure and protected access to our tools and systems. At the same time, ever-changing technologies, increasing degrees of information dependency in health care and a need for increased automation all require continual improvements to the components and infrastructure that keep us tied together and working.

In Information Systems, we keep these changes to the technology infrastructure invisible to you through careful planning and implementation, ensuring that we can accommodate growth in the number of applications, number of users and the amount of information that's stored, while you continue communicating, working and sharing vital information.

In 2016, TES accomplishments included:

- Supported opening of the following new major locations with new network, server and other infrastructure services:
  - Neuroscience, Orthopedic and Wellness Center (N.O.W.)
  - Children's Hospital of Richmond Pavilion
  - VCU Health at Stony Point 9109
  - The Jackson Center
- Implementation of a VCE vBlock (hyper converged technology)
  - A replacement for our VMware virtual server farm, vBlock provides increased performance and reliability for all of our virtual servers, while positioning us for better disaster recovery in the future.
- Expansion and upgrade of our primary storage appliances
  - Doubled capacity of the Isilon NAS (Network Attached Storage, which holds most clinical images, including PACS and CPACS, along with most of the organization's unstructured data)
  - Performed major software revision updates with absolutely no downtime
- Deployed Internet Explorer to the entire organization



\*Estimated

In addition to those accomplishments, we also participated in providing infrastructure services for the following outreach and renovation projects:

- Specialty Pharmacy
- OR - N7 - Anesthesia
- EP - Consult Room
- EP - Nurse Workstation 2
- N2 - Trauma Relo
- N2 - OTPT Relo
- Performance Improvement (W10W to OCS)
- Addiction Center (W11W)
- Main 8 - Phase 2
- HR Reno - 11th Floor
- HR Reno - 1st Floor
- Phase 2 - Biotech 8
- EP - EP 1 Reno
- EP - Nurse Workstation 1
- OR - M5 - Hallway
- Employee Communication Strategy Research
- Hayes Willis Health Center of South Richmond
- Forest Ave - Plastic Surgery
- Radiology Imaging (Gateway Basement)
- Main 9C
- Main 4 - Cardiology
- Pembroke
- Family Medicine Construction/Relocation (Nelson 1)
- HR Reno - 8th Floor
- HR Reno - One Cap 19
- Phase 1 - Cytogenetics
- Children's Urology
- VA Medical Group (Colonial Heights)
- RX - Wireless Syringe Pumps (Medfusion)
- LMS - Cerner Training Modules
- VA Medical Group (Colonial Square)
- Welcome Center Renovation
- Temple Avenue
- Cafeteria - Phase 1
- North 5 Relo - Comp Medicine
- ACC5 - Phase 2 - Reno
- Main 8 - Phase 1
- Mayland Clinic
- Cardiac Tracking Boards
- Bracey (Tanglewood Family Medicine)
- Gaskins
- Parkinson's
- 2116 W. Laburnum Wireless
- Cath Lab
- COVA Clinic
- CMH AV/FireEye
- AAC5 Renovation
- Data Center Renovation (411 E. Franklin)
- Maryland Clinic

For that reason, in 2017 we will continue to strengthen our foundation through:

- Enterprise rollout of Cerner's Instant Access (Tap-n-Go)
- Enterprise rollout of MaaS 360 (a mobile device management utility that will allow much greater access via mobile devices)
- Enterprise rollout of Cisco's AnyConnect VPN, replacing the F5 Firepass and enabling two-factor authentication
- Support for major construction projects of VTCC and CMH
- Beginning a major overhaul of aging network equipment
- Pilot Thin Clients on the "Computer on Wheels" (and, if successful, begin rollout)
- Migration of Virginia Premier's 250 servers to the VCU Health infrastructure

## Telemedicine

By leaning on telecommunications technology, telemedicine (also referred to as telehealth or e-health) extends the reach of VCU Health professionals, by allowing them to evaluate, diagnose and even treat patients in remote locations. But the technology does more than just bring much-needed health care to distant areas; it also serves as a multiplier for expert resources, extending the abilities of a single physician to numerous locations, without requiring them to leave their home facility.

As part of the Office of Clinical Transformation, here are some of the ways our telemedicine team worked to improve in 2016:

- Added/set up new telemedicine consultative services linking:
  - Sleep disorders clinic to VCBR
  - VTCC-CMH to pediatric telepsychiatry
- Equipped Jackson Center for telepsychiatry consults through CMH
- Enabled pediatric telepsychiatry between CHoR (Children's Hospital of Richmond) ED and VTCC (Virginia Treatment Center for Children)
- Brought Genetics to CMH
- Equipped the following conference rooms with videoconferencing capabilities:
  - Two new conference rooms at CHoR
  - Main 8 (Ob/Gyn)
  - Two conference rooms at Stony Point 9109
  - Two conference rooms at N.O.W.
- Enabled seven care provider workplaces/PCs with HIPAA compliant (telemedicine) video teleconferencing

In calendar year 2017, our efforts will help to bring more and better health care through:

- Virtual visit platform, phase one implementation
- Pilot clinics phase one (follow up visits) operationalization
- Diabetes telemonitoring, pilot implementation
- Project ECHO for substance abuse implementation

## Enterprise Analytics

By bringing together disparate data from many disciplines, Enterprise Analytics provides us with the ability to collect, analyze and process analytical information across all or most functions of our business. The end result includes actionable information and intelligence that would otherwise not occur without these valuable integrations.

Here are some of things we did in 2016 to keep our data talking:

- Institutional implementation of Tableau server in concert with Tableau desktop, paving the way for moving from a centralized model to a self-service data acquisition model
- Created an application for tracking and reporting ED diversion times
- Developed a new application for managing the Honoring Choices program (which promotes documentation of advance directives)
- Deployed an analytics web portal to give VCU Health employees one URL for accessing Enterprise Analytics dashboards and reports
- Published a comprehensive Request for Purchase for an Enterprise Data Warehouse concept that will serve both operations and research initiatives (ultimately for years to come)
- Successfully acquired new data sources in the data warehouse that includes Virginia Hospital and Healthcare Association inpatient discharges, real-time ED diversion, OB TraceVue and genomics

In 2017, Enterprise Analytics will focus on:

- Implementing phase one of the next generation Enterprise Data Warehouse, enabling advanced operational and research analytics
- Deploying a major Cognos upgrade from 10.2.1 to Cognos 11 (Cognos Analytics)
- Migrating the Optum IDX Data Exchanger to new, more capable Windows server
- Doubling the capacity of the Tableau server to accommodate an expansion of self-service analytics
- Deploying an analytics portfolio for Community Memorial Hospital at VCU Health
- Implementing a fully automated eCQM (quality measures) solution by collaborating with the Performance Improvement team and Medisolv Inc.

When most people think business and financial, they think patient billing, goods and services purchasing, and financial reporting. But in order to keep VCU Health running smoothly, those systems must seamlessly integrate with many others (e.g., time reporting, patient registration and scheduling, staff scheduling and accounting, as well as the maintenance of materials inventory).

To help keep all of these systems working together — smoothly and reliably — we made the following improvements to business and financial systems in 2016:

- Major upgrade of core Infor/Lawson v10, including the following co-upgrades:
  - Upgraded Lawson Business Intelligence (LBI)
  - Upgraded Lawson Mobile Supply Chain Management (MSCM)
  - Migrated from Lawson Process Flow to Infor Process Automation
- Conversion from Infor Managed Services to CloudSuite Services
- Infor/Lawson external review of system utilization and establishment of corporate road map
- Expanded EDI supply chain processing for new external clinic operations (CHoRP, Stony Point 5 and NOW)
- GE-IDX cache upgrade, April 2016
- New GE-IDX ETM pre-service workflow, implemented November 2016
- New third-party liability process, implemented August 2016
- Professional Remit Rewrite, with 63.5 percent manual transaction reduction
- Single Patient Guarantor, conversion/implementation November 2016
- GE-IDX Financial Class Determinator Module, implementation February 2016
- Cerner radiology and oncology scheduling (went live)
- Palm scanning (went live)
- Upgraded Automated Admission notification process to United HealthCare (went live)
- Enhancements to Language Services interpreter request process
- First scheduling question guide in Surgery (went live)
- Orthopedic provider schedule enhancement projects to support patient access initiatives

## Going forward, we have the following improvements planned for 2017:

- CHoR Infor/Lawson finance conversion
- CMH Infor/Lawson conversion
- Kronos 8.0 upgrade (eliminating Java)
- Kronos mobile solution rollout
- Kronos badge reader replacement project (year one of three)
- Community Memorial Hospital at VCU Health, implementation of GE-IDX HPA billing system
- Implementation of GE-IDX HPA ETM hold bill workflow
- Self-service check-in kiosk rollout to include payment processing
- Kickoff of outward facing online scheduling to integrate with vcuhealth.org redesign
- Overhaul of real-time insurance eligibility checking
- Rollout of patient estimation software

# IS Team Member Accomplishments

## New hires

Lindsey Smith, *program support assistant senior*  
Marcellus Gainey, *tech training staff*  
Donna Swanson, *tech training senior*  
Duane Lynch, *service desk apps-senior*  
Victoria Brock, *clinical informatics-senior*  
Donald Harris, *data security specialist*  
Jon Yi, *business analyst*  
Terence Grier, *clinical application analyst*  
Cindy Salay, *clinical application staff*  
Samuel Davies, *SurgiNet anesthesia analyst*  
James Haines, *information services manager (OR)*  
Charles Sanders, *nursing informatics director*  
Blakely Herlick, *clinical informatics staff*  
Kristy Williford, *clinical informatics staff*  
Daniel Akeyeampong, *certified pharmacy tech*  
Terry Zacharias, *network senior*  
Katie Ingram, *clinical transformation specialist*  
Craig Wright, *clinical transformation specialist*  
Craig Cotman, *clinical transformation specialist*  
Darlene Hill-Clarke, *clinical transformation specialist*

## Promotions

Ryan McBrearty, *storage engineer senior*  
Kevin Johnson, *clinical transformation specialist*  
Donna Swanson, *clinical transformation trainer senior*  
Vimal Mishra, M.D., *board certification in clinical informatics*  
Ron Gillum, *data security associate*  
Barbara Goodman, *financial apps - staff*

## Retired

Sharon Wiser, *data security senior*

## Degrees/certifications

Romany Faheem: Project Manager Professional (PMP), December 2016; Certified Wireless Network Expert (CWNE #202), December 2016; Certified Wireless Design Professional (CWDP), July 2016

Kevin Tome: NexPose Certified Administrator and StealthWatch for Security Operations

## 5 years of service

Annamarie Butterworth  
Ralph Naylor  
Mark Sumner  
Kathy Holder  
Pam Holtz  
Laura Jones  
Michael Meikle  
Apolla Roth  
Jessical Barner

## 10 years of service

Jeremy Langford  
Paul Hoke  
Bernard Argenzio  
Richard Pollack  
Sandra Campbell

## 15 years of service

Karen Tinsley  
Kiwana Wingo  
Paula Spencer

## 20 years of service

Craig Cotman  
Sharon Grow  
Jerry Moye  
Timothy Rodgers

## 25 years of service

Deborah Simms

## 35 years of service

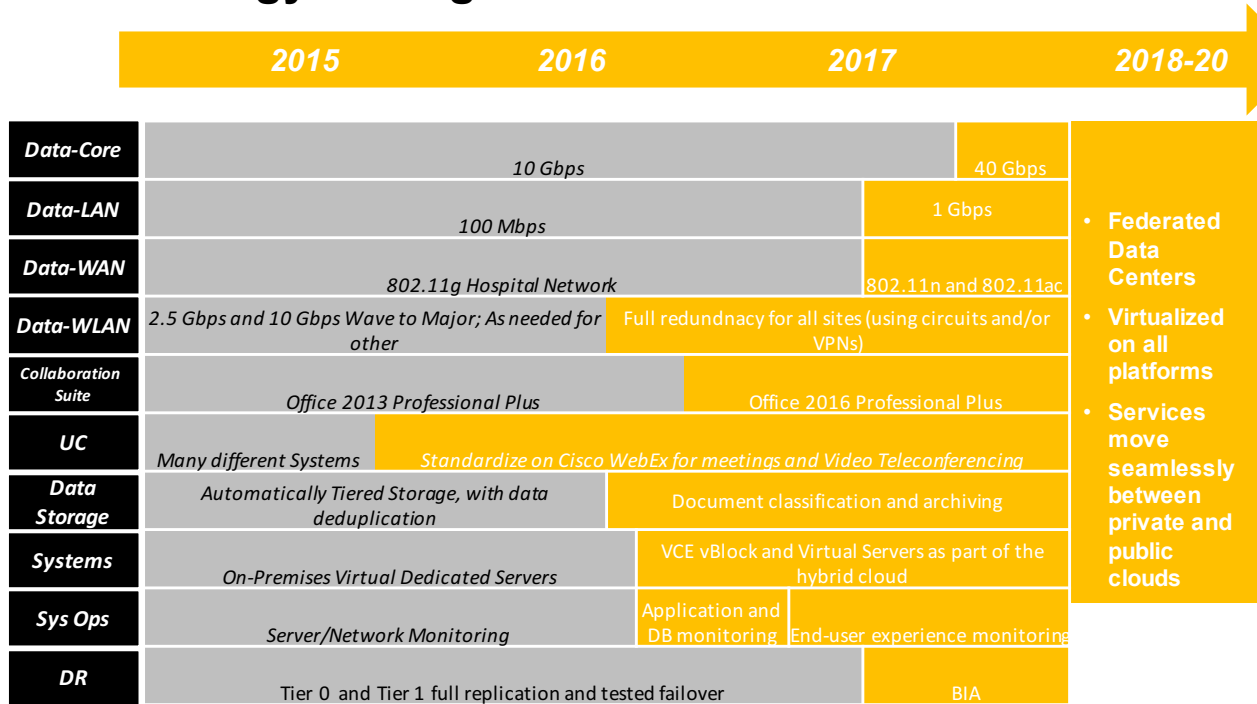
Rebecca Ilog  
Barbara Goodman  
Delores Lambert



# EMR Road Map

Project Manager	FY 2017												FY 2018												FY 2019												FY 2020											
	Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4														
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D												
	<p><b>EMR Roadmap</b></p> <p><b>Nursing Optimization - Discharge</b> Nursing Optimization - Care Compass Nursing Optimization - View Optimization</p> <p><b>Blood Transfusion</b> Breast Milk Management Mobile Communications - CareAware</p> <p><b>Provider Optimization</b> MD Mobility PowerChart Touch Population Health (Inpatient Case Management, Cerner HealthCare)</p> <p><b>Pharmacy Pyxis</b> BMDI - Venis &amp; Dialysis BMDI - VitalsLink BMDI - Infusion Management</p> <p><b>Bone Marrow Transplant</b> Interoperability/HIE - BSeccours, DoD, VA</p> <p><b>Oncology I - Remaining PowerPlans</b> Oncology II - CMH, Inpatient Adult, Inpatient Pediatrics, Research</p> <p><b>Charge Capture Project</b> Womens Health &amp; Fetal Monitoring (Replace OB Traceview with expanded womens health module) Meaningful Use Stage III / IMACRA / MIPS Behavioral Health Rehabilitation Cerner 2015 Upgrade</p>																																															
	<p><b>EMR Roadmap - Detailed/Miscellaneous</b></p> <p>IT Impact from New Constructions Master Patient Index Archive Solution API PCS (Acuity) Community Memorial Hospital ACR Select</p> <p>Cerner 2015 Upgrade Cerner 2018 Upgrade Cerner 2019 Upgrade</p> <p>Cerner / OTTR Transplant Solution Cerner Enterprise-Wide Registration &amp; Scheduling Document Imaging Improvements Cardiology Replacement Telehealth Virtual Visits E-Prescribing of Controlled Substances Infection Control Interoperability - CommonWell and Resonance Patient Engagement Tools Specimen Tracking Capacity Management - Tele Tracking Baby SENTRY In Vitro Fertilization</p>																																															
	<p>Vendor Neutral Archive</p>																																															

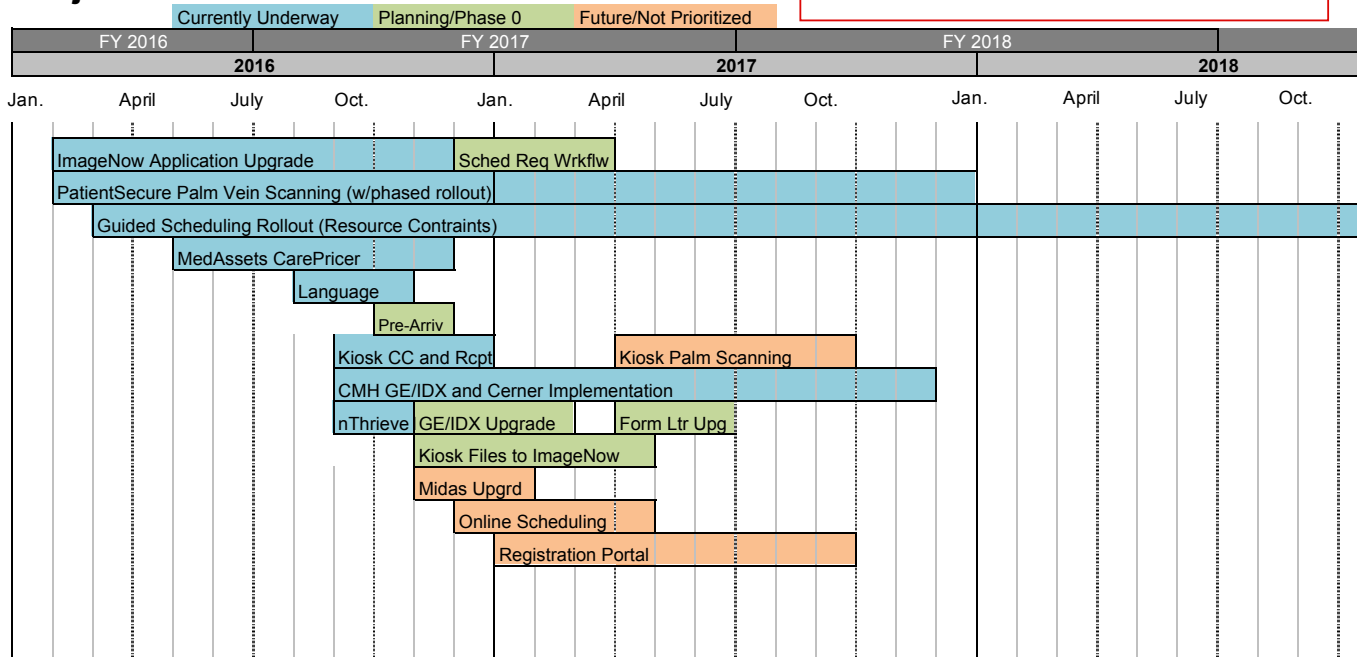
## Technology Strategic Direction Overview



In Progress      Future

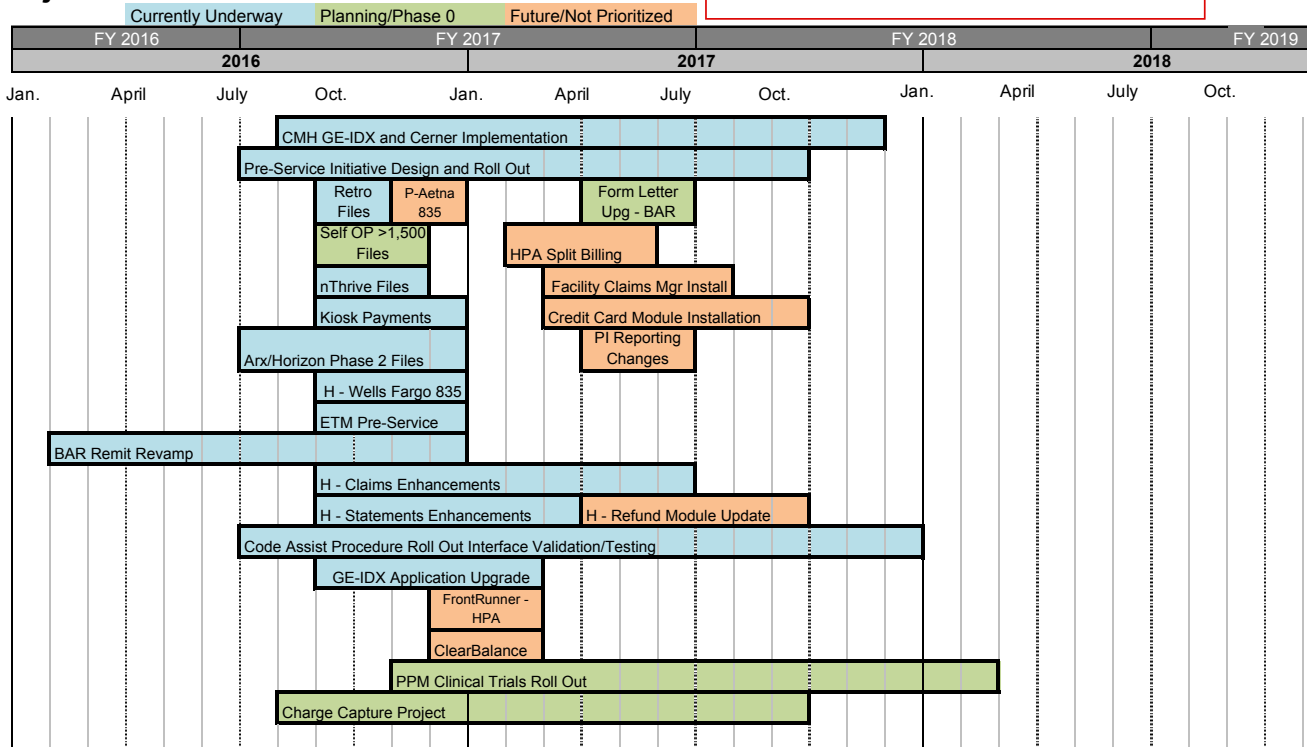
### PAIS IT Roadmap Project Timeline

**Updated  
9/30/2016**



## Revenue Systems IT Roadmap Project Timeline

**Updated  
October 2016**



VCU Health System InfoSec Roadmap	FY16				FY17			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Risk / Governance</b>								
<b>New Information Security Framework</b>					Policy Development			
Improved Assessment Process	New Assessments / Process				Implement New Process and Workflow			
Network Access Control					Airwatch Implementation			
Mobile Device Security								
PCI								
Asset Management & Assessment								
Disaster Recovery					Third Party Disaster Recovery			
Internal Audit - Collaboration / Tracking								
Vulnerability Management			New Vulnerability Scanner		New Vulnerability Program			
<b>Access Management</b>								
Courion - Password Reset					Consider Replacing Courion / New Implementation			
Courion - AD Provisioning								
Courion - Cerner Provisioning	Cerner Provisioning							
Courion - IDX Provisioning			IDX Provisioning					
Two Factor Authentication					Implement DUO 2FA to Replace Symantec			
<b>Incident Response</b>								
Incident Response Procedure			New IOC Procedures		Ongoing Incident Response			
Mitigation of Issues					Mitigation of Detected Issues and Misconfigurations (FTP, Cloud Sharing, etc)			
End Point Security			Triumphant Deployment		Endpoint Encryption to all Devices / MBAM			
Rogue Detection/Management								
Absolute Recovery					Ongoing System Cleanup			
Forensics / E-Discovery	Implement Technology				Evidence Collection as Necessary			
SIEM			SIEM RFP		Proficio Implementation			
<b>Compliance Monitoring (P2 / Fair Warning)</b>								
Malware Analysis		New Tool Implementation			Team Training / Integration into IOC / Technology Review			
Network Firewalls		Palo Alto Upgrade						
Proxy Servers					Implement Proxy Servers		Datacenter Firewall Implementation	
Intrusion Detection							Clean up of Policy Violations / Policy	
					Technology Review for FY18			

**KEY**

Funded / In Progress
Funded / Not Started
Not Funded / Not Started
No Current Activity / Possible Risk
Completed



**VCU**Health™

Information Systems  
701 East Franklin Street  
Box 980483  
Richmond, Virginia 23298-0483

A VCU University Relations publication  
an equal opportunity/affirmative action employer 004018-01