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2015 Malcolm Baldrige National Quality Award Application

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GLOSSARY OF TERMS & ABBREVIATIONS

24/7 – Twenty four hours a day, seven days a week

5 Rights – For medication administration: Right Patient, Right Medication, Right Dose, Right Time, Right Route

5S –Tool used to sort, set in order, shine, standardize and sustain

A

A3 Problem Solving – Improvement tool that uses a structured method to determine the quickest and most cost effective way to ensure the root cause of a problem is identified, addressed and permanently eliminated

AA – Associate Administrator

AAHRPP – Association for the Accreditation of Human Research Protection Program

ACGME - Accreditation Council for Graduate Medical Education

ACS - American College of Surgeons

Action OI – Productivity management system from Truven

Adverse Event - An injury from a patient's medical management rather than by the underlying disease

AHA – American Hospital Association

AHRA – Association for Medical Imaging Management

AHRQ - Agency for Healthcare Research and Quality

AIDET – Acknowledge, Introduce, Duration, Explanation and Thank You. Communication framework for patient satisfaction

ALOS - Average Length of Stay

AOB – Adjusted Occupied Bed

AOS – Available on site

AP – Action Plan

APTT - Activated Partial Thromboplastin Time – lab test

ASHE – American Society for Healthcare Engineering

ASP – Achievement Sharing Program

ASPEN – A materials management company

ATP – Swab testing measure for bacteria left behind after cleaning (Adenosine Triphosphate)

B

BIG DOT - Results measure for Strategic Objectives

Black Belt - Full-time Six Sigma experts who lead improvement teams, work across the system and mentor Green Belts

BOT - Board of Trustees

BPPPC – Board Planning and Public Policy Committee

BPTL – Best Place to Learn Council

BSN - Bachelor of Science in Nursing

C

CA - Catering Associates

CABG - Coronary Artery Bypass Graft

CAHPS - Consumer Assessment of Healthcare Providers and Systems Survey of outpatient satisfaction implemented nationally by CMS

CAMC - Charleston Area Medical Center, Inc. includes four hospitals (General, Memorial, Women and Children's, and Teays Valley)

CAMC Foundation - Organization that does fundraising, fund management and fund distribution for the CAMC Health System

CAMC.org - Health system's internet website

CAMCHS - Charleston Area Medical Center Health System - governing organization for CAMC, IHCPI, CHERI and the CAMC Foundation

CAMC Physicians Group – see IHCPI

CAMnet – CAMC Health System's intranet page

CAP – College of American Pathologists

Cardinal – Provider of medical supplies to CAMC

CAUTI - Catheter Associated Urinary Tract Infection

CC - Core Competency

CD – Corporate Director

CDC -Centers for Disease Control

CDL – Circulatory Dynamics Laboratory

CEN - Communication Education Network

Cerner – Contracted provider of information technology services beginning in 2015 when they acquired Siemens Health Services

CEO - Chief Executive Officer, member of Executive Council, Board of Trustees, Strategic Planning Team and Senior Leader

CFO - Chief Financial Officer, member of Executive Council, Strategic Planning Team and Senior Leader

CHERI - CAMC Health Education and Research Institute

Cipher Health - Automated patient call back system

CLABSI - Central Line Associated Blood Stream Infection

CME – Continuing Medical Education

CMI - Case Mix Index

CMMI – Centers for Medicare and Medicaid Innovation

CMS - Center for Medicare and Medicaid Services

COI - Conflict of Interest

Collaborative Practice - Unit based multi-disciplinary teams that develop plans to achieve clinical/health outcomes for specific patient groups

Comparion - Healthcare information services company that benchmarks all hospitals using Medicare data (two year data lag)

COO - Chief Operating Officer, member of Executive Council, Strategic Planning Team and Senior Leader

COTH - Council of Teaching Hospitals

CPOE - Computerized Physician Order Entry

CPS – Comprehensive Pharmacy Services, our outsourced pharmacy management company

Crothall – Contracted provider of housekeeping services

CRM - Customer Relationship Management

CT – Computed Tomography X-ray

CV – Cardiovascular

D

DAISY Award – International Nurse Recognition Program

dba – Doing business as

DLCC – David Lee Cancer Center

DMAIC - Define, Measure, Analyze, Improve and Control

DNV, DNV-GL – Det Norske Veritas and Germanischer Lloyd: A provider of hospital accreditation approved by CMS in 2008 to accredit acute care hospitals in the US. CAMC seeks this accreditation in lieu of TJC accreditation

E

EA - Environmental Analysis

EBC - Evidence Based Care

EC - **Executive Council** - Senior Leader group comprised of the CEO, COO, CFO, Chief Nursing Officer, Chief Quality Officer, Chief Information Officer, Chief Medical Officer, Chief Strategy Officer, Chief Marketing Officer, Chief Compliance Officer, General Counsel, Hospital Vice Presidents / Administrators, Vice President/Administrator of Ambulatory Services, VP Finance, VP HR, VP Government Affairs, Safety Officer, President CHERI, President Foundation, Medical Staff Clinical Directors

ED - Emergency Department

EduTrack - Computer based training modules that track education program attendance

EHR – Electronic Health Record

EMR – Electronic Medical Record

EMS – Emergency Medical Services

Excess of Revenue over Expense - The benchmark net income of the organization as defined by Generally Accepted Accounting Principles but excludes gains and losses on debt refinancing, gains and losses on hedge transactions as well as other extraordinary items as defined by current accounting conventions

Expense per Adjusted Discharge - Measures the average cost of delivering care on the basis of a universal unit of service

F

FM – Family Medicine Center

FTE - Full time equivalent

FY – Fiscal Year

G

GEN or General – a CAMC hospital

GME – Graduate Medical Education

Governance Institute – Benchmark for best practices for board governance

GPO – Group Purchasing Organization

Green Belt – Staff trained in Six Sigma tools and processes. Operates in support of or under the supervision of a Six Sigma Black Belt

GYN - Gynecology

H

HCAHPS - Hospital Consumer Assessment of Health Providers and Systems Survey of patient satisfaction implemented nationally by CMS

Healthcare Performance Solutions – National source for Employee Engagement Surveys

H.E.A.R.T. – Service recovery process – Hear them, Empathize, Apologize, Resolve promptly, Thank them

HFMA - Healthcare Financial Management Association, provides revenue cycle tools to measure performance

HIPAA – Health Insurance Portability and Accountability Act of 1996 Privacy Rule

HIV - Human Immunodeficiency Virus - the virus that causes AIDS

HR – Human Resources

Huddles – Team discussion on key areas that impact unit operations and information exchange

I

ICD10 – International Classification of Disease 10th Edition, replaces ICD-9 for classification of diseases and procedures

ICU - Intensive Care Unit

IHCPI - Integrated Healthcare Providers, doing business as CAMC Physicians Group

IHI - Institute of Healthcare Improvement

Impact Leadership Team - Responsible for prioritizing and allocating resources for performance improvement

ImagineU – Virtual Program that provides high school students with health care career awareness and exploration

IP – Inpatient

IPOC - Interdisciplinary Plan of Care

IRB – Institutional Review Board

IRS – Internal Revenue Service

IS - Information Services

ISO 9001 – An international quality management standard

IT – Information Technology

IV - Intravenous

J

JIT - Job Instruction and Training that transfers needed knowledge and skills so that standardized work is performed

JLL – Jones, Lang, LaSalle – contracted provider for facilities management

Job Competencies - Knowledge, skills and abilities, and other requirements that are needed for someone to perform a job successfully

K

KCCHI - Kanawha Coalition for Community Health Improvement

KEEP/ASP Program – Key Employee Earnings Plan / Achievement Sharing Program

KRONOS - Online system for time and attendance

KSA – Knowledge, Skills, and Abilities

KWP – Key Work Process(es)

KWS – Key Work System(s)

L

Lean - Change management tools to reduce waste in work

LINCs – Dashboard with HCAHPS and post-discharge information

LOS - Length of Stay

LS – Leadership System

LT – Long(er) Term

M

M/B - Mother Baby

Magnet – Designation by the American Nurses Credentialing Center that recognizes quality patient care, nursing excellence and innovation in professional nursing practice

MAK - Medication Administration Check is a system that uses bar-coding for positive identification of patient and medication with real-time safety checks at time of administration

MEM or Memorial – a CAMC hospital

MET - Medical Emergency Team

MIMs – Management Information Meeting held quarterly

Moody's A3 - Financial bond rating organization

Morrison – Contracted provider for food services

mPINC – Maternity Practices in Infant Nutrition and Care

MS - Medical Staff

MSEC - Medical Staff Executive Committee

MU - Meaningful Use, using certified electronic health record (EHR) technology. Providers must attest to demonstrating meaningful use every year to receive an incentive and avoid a Medicare payment adjustment

MVV - Mission, Vision, Values

N

NCCI – National Council on Compensation Insurance

NDNQI - National Database of Nursing Quality Indicators that is owned by the American Nurses Association

Neuro – Neurosciences services

NHSN – National Healthcare Safety Network

NIAHO - National Integrated Accreditation for Healthcare Organizations

NICU - Neonatal Intensive Care Unit

NPS – Net Promoter Score, measure of customer loyalty

Nursing Council(s) – Nurse leaders within CAMC who meet to collaborate and utilize decision-making processes to ensure, maintain and improve nursing practices including Nursing Management Council, Standards and Practice Council, Quality Improvement Council, Education Council, Retention and Recognition Council and Evidence-Based Nursing Research Council

O

OB/GYN – Obstetrics and Gynecology
OCC – Outpatient Care Center
O/E - Observed to Expected
OIG – Office of the Inspector General
OP – Outpatient
OR – Operating Room
OSHA - Occupational Safety and Health Administration

P

PAA – Potentially Avoidable Admission
PAC - Physician Advisory Council
Pap - Papanicolaou test, used to detect cancer or pre-cancerous conditions
Partners in Health - A rural health care network, which includes CAMC and small, rural and critical access hospitals, Federally Qualified Health Centers and rural health departments
PCI - Percutaneous Coronary Intervention
PCP - Primary Care Physician
PI - Performance Improvement
PIC - Performance Improvement Council
PICU – Pediatric Intensive Care Unit
PMPM – Per-Member Per-Month
PMS - Performance Management System
PPE – Personal Protective Equipment
PQI – Prevention Quality Indicators
PRC – Professional Research Consultants
Premier- Premier's focus in on leading the transformation to high-quality, cost-efficient healthcare through resources such as a database that is the most comprehensive in the industry and sharing best practices
Premier Quality Advisor/Safety Surveyor - Quality benchmark that compares over 1,800 hospitals nationally
Proj – Projection
Prophylactic – Preventive
PSA - Primary Service Area
PTO – Paid Time Off

Q

QA- Quality Assurance

QI - Quality Improvement

QIC - Quality Improvement Council

QIPS – Quality Improvement and Patient Safety Committees; resident QI committees

QOPI - Quality Oncology Practice Initiative

Quantros – Online complaint management reporting system

QUEST - Collaborative program developed by Premier, IHI and a group of hospital leaders to help hospitals improve their performance in five measurement domains to improve overall patient care

R

RAC – Recovery Audit Contractor, companies contracted by CMS to identify and correct improper Medicare payments

RCA – Root Cause Analysis

RFP – Request for Proposal

RMG - Resource Management Group

RN – Registered Nurse

RxAuditor – Pharmacy database for AcuDose software

S

SA - Strategic Advantage(s)

Safety Net - Providers that organize and deliver a significant level of health care and other related services to uninsured, Medicaid, and other vulnerable patients

Sarbanes/Oxley - 2002 U.S. federal law which established a broad array of standards for management boards

SC - Strategic Challenge(s)

SCIP - Surgical Care Improvement Process

SCM – Supply Chain management

Service Lines – Organization of health care services into categories. At CAMCHS, this includes Cardiovascular, Medicine, Surgery and Mother/Baby

Service Plus - Program for all employees to support patient satisfaction and engagement

SET - Service Excellence Team

Sg2 – Resource for healthcare data projections and analytics-based expertise

Siemens – Contracted provider of information technology services ending in 2015 when they were acquired by Cerner

Sigma Theta Tau – Honor society of nursing and the second largest nursing organization in the world

Six Sigma - Use of statistical tools to reduce variation in work processes

SL - Senior Leader(s)

SMART– Specific, Measurable, Achievable, Realistic and Timely

SO - Strategic Objective(s)

SOP – Strategic Opportunity

Soarian - Siemens software used to help streamline patient access, optimize throughput, and support the delivery of healthcare

SP – Strategic Plan

SPL - Single Point Lesson - a one page document depicting the steps necessary to perform a task

SPP - Strategic Planning Process

SPT - Strategic Planning Team

SSA - Secondary Service Area

ST - Short Term

SWOT - Analysis of strengths, weaknesses, opportunities and threats used as an input in the Strategic Planning Process

T

TAT – Turn around time

TCT - Transforming Care Together, innovative management and care delivery model

Tertiary - Specialized consultative care, usually on referral from primary or secondary medical care personnel

TJC - The Joint Commission, a national not-for-profit evaluation and accrediting body

Top 10% - Performance is equal to or greater than organizations in the 90th percentile and is among the top 10% of organizations in the database

Top 25% - Performance is equal to or greater than organizations in the 75th percentile and is among the top 25% of organizations in the database

Top Box - Percentage of survey respondents giving the most favorable response on the measure

Top Decile - A decile is a method of splitting up a set of ranked data into 10 equal subsections. CAMC considers top decile to be the top 10%

Top 5 Board - Board in all departments that identifies the department's top five areas of improvement using define, measure, analyze and improve. Processes that are in "control" are not listed on the board. Used to deploy action plans from the Strategic Planning Process

Top Quartile - A quartile is a method of splitting up a set of ranked data into 4 equally large subsections. CAMC considers top quartile to be the top 25%

tPA – Medication for treatment of acute stroke (tissue plasminogen activator)

TransforMED – Patient-Centered Model for Medical Home National Demonstration Project

Truven - Analytical company specializing in healthcare data, volume projections and productivity using Action OI

TVH – Teays Valley Hospital, a CAMC hospital

U

UPS - Uninterruptible power supply

U/S - Ultrasound

V

VAT – Value Analysis Team

VBP – Value Based Purchasing - a government payment methodology that rewards quality of care through payment incentives

Vermont Oxford – National source for NICU results comparisons

Vision Pillars - Provides a balanced scorecard approach to strategic planning

Visual Management - TCT Tool that is a set of visual controls, designed to create a transparent, and waste free environment, so that a process or system can be understood at a glance

VOC - Voice of the Customer

VP - Vice President

VPN – Virtual Private Network, used for internet connectivity

W

Waste Walk - TCT Tool that identifies any activity that is not adding value in the creation of products or services for the customer

WCH - Women and Children's Hospital, a CAMC hospital

WF – Workforce

WhyNotTheBest – Website providing clinical and HCAHPS comparative data

WLDS - Workforce Learning and Development System

WMC – Women's Medicine Center

WV - West Virginia

WVBOM – West Virginia Board of Medicine –Licensing body for allopathic medical staff in WV

WVHA – West Virginia Hospital Association

WVHCA - West Virginia Health Care Authority responsible for Certificate of Need (CON) and rate regulation in WV as well as the data source for market share

WVYRBS - West Virginia Youth Risk Behavior Survey

Organizational Profile

P.1 Organizational Description. Nineteen year old Patrick is alive today because of the lifesaving, innovative care he received at Charleston Area Medical Center (CAMC) when he was sixteen. His family was passing through West Virginia on vacation when Patrick sneezed. A simple sneeze is usually not cause for alarm. For Patrick, diagnosed with Ewing's sarcoma of the spine (a form of cancer), the sneeze broke his back and caused him to lose feeling in his feet. He was taken to CAMC and underwent spine stabilization when he suddenly went into cardiac arrest. The care team saved his life through an innovation no one else in healthcare had attempted - using a clot-busting stroke drug (tPA) on a pediatric patient in cardiac arrest. The team of CAMC doctors and nurses who provided the life-saving care showcased the innovation in thinking and action that thrives throughout the CAMC Health System. When this case was presented at the 9th Annual New York Neuro Emergencies and Neuro Critical Care Symposium, it was recognized as a best practice and received acclaim and recognition by the medical community. Patrick (now in college), and his family stop to visit the CAMC nursing staff as they head south from Canada annually for their vacation. This is a story of how teamwork, persistence, caring and innovation saved a life against all odds and created a long term relationship. *This is our story. This is at the heart of what we do at CAMC.*

Charleston Area Medical Center (comprised of CAMC General, CAMC Memorial, CAMC Women and Children's, and CAMC Teays Valley hospitals) is:

- West Virginia's third largest employer.
- The largest not-for-profit hospital in WV.
- Ranked in the top 1.5% of hospitals in the nation in size in a state that has a total population of less than 2 million people.

CAMC has a multi-faceted role as a regional tertiary referral center, community hospital, teaching, and safety net hospital for central and southern West Virginia. Patients are transferred to us from other facilities (even our competitors) for our clinical expertise and wide range of specialized services that others in the state are unable to offer including:

- Level 1 Trauma Center (highest level designation by the American College of Surgeons).
- Highest level Neonatal Intensive Care Unit and Pediatric Intensive Care.
- West Virginia's only kidney transplant program.
- Subspecialists in every service line.

Distinguishing factors that influence our operations and help us achieve our core competency include:

- **Importance to the Community –** As the largest provider of charity care in West Virginia, we believe it is our responsibility to influence the health of our community far beyond the treatment of disease. Based on our comprehensive community health needs assessment, we have taken a proactive approach to identify community needs and to address health issues. CAMC provides 17% of the charity care provided by all acute care hospitals in West Virginia. Our community benefit is $124 million or 13.94% of our expenses (68% greater than the national average of 8.3%). This drives the achievement of our *Core Competency: Improving the health and economics of our community.*
- Our **Performance Improvement (PI) Culture/ Infrastructure and Innovation** is deeply embedded throughout the CAMC Health System and would take years for our competitors to replicate. We were an early leader in translating leading edge performance improvement practices to health care and more recently, our relentless PI journey has resulted in an innovative management and care delivery model aimed at redesigning patient work processes to reduce waste, increase direct time at the patient's bedside and improve the overall quality of care. Under the DMAIC umbrella, this innovation [Transforming Care Together (TCT)] is being systematically deployed to all clinical areas, resulting in meaningful change and improved satisfaction for both patients and staff.
- **Learning Environment** – Being a teaching hospital keeps CAMC on the leading edge of healthcare and medical practice. We provide research, clinical trials, continuing and graduate medical education, nursing and allied health education programs. In addition to the students who use CAMC as a clinical rotation, we have 171 physician resident employees. Nearly 50% of our medical staff is comprised of these former residents. In addition, the entire WV and regional medical community benefits from the availability of the high caliber physicians from our programs.
- **"Grow Our Own" -** Our long standing focus on teaching is a result of our location in a rural, economically challenged state with a limited workforce pool and difficulty recruiting from out-of-state. We have addressed our strategic challenge of recruiting competent staff by "growing our own" through both formalized and internal education and training programs. The medical residency and nursing programs support this approach as does our identification of talented internal candidates who are mentored to support their personal and professional growth.
- **Sustainability** – In a state with declining population, rate regulation, and less than half of the residents employed, we have designed our work systems and processes to not only

Figure P.1-1 Health Care Service Offerings

Main Health Care Service Offerings	Locations	Key Delivery Mechanisms/ Service Lines	Importance to Success
Charleston Area Medical Center – 908 beds **91% of CAMCHS revenue; 6,407 employees; Largest hospital in WV**			
Inpatient, outpatient and emergency services	CAMC Memorial Hospital (424 beds)	Cardiovascular, Medicine, Surgery	Tertiary care referral center and community hospital services
	CAMC General Hospital (268 beds)	Trauma, Medicine, Surgery	
	CAMC WCH (146 beds)	Mother/Baby, Surgery	
	CAMC Teays Valley (70 beds)	Medicine, Surgery	Small community hospital for access/referral base
Integrated (IHCPI) – dba CAMC Physicians Group - 34 sites, 127 physicians **8% of CAMCHS revenue; 408 employees**			
Inpatient and outpatient services	Hospitalists and specialists Physician office services		Breadth and depth of specialty physician practices, Support continuum of care

deliver the BEST care to our patients but also to increase our competitive advantage as a low cost provider in the region. As a routine process of ongoing improvement efforts, we expect to achieve an annual $10 million reduction in our costs, resulting in cost reduction of $155 million since 2002. We are also a leading organization in using a holistic sustainability model that helps us to ensure we can deliver on our mission and create success now and in the future.

P.1a Organizational Environment

P.1a(1) Health Care Service Offerings. CAMC Health System's main health care service offerings, delivery mechanisms and relative importance of each to our organizational success are shown in Figure P.1-1.

Figure P.1-2 Mission, Vision, Values, Core Competency

MISSION, VISION, VALUES, CORE COMPETENCY
MISSION: Striving to provide the best health care to every patient, every day.
VISION: CAMC, the best health care provider and teaching hospital in WV, is recognized as the: • **BEST** place to receive patient-centered care • **BEST** place to work • **BEST** place to practice medicine • **BEST** place to learn • **BEST** place to refer patients (Our Vision Pillars Figure 2.1-6)
VALUES: Quality, Service with Compassion, Respect, Integrity, Stewardship, Safety
CORE COMPETENCY: Improving the health and economics of our community.

P.1a(2) Mission, Vision, and Values.

Our Vision and Mission drive our Beliefs.

➔ Our Beliefs drive our Values.

➔ Our Values drive our Behaviors.

➔ Our Behaviors drive the achievement of our Core Competency (Figure P.1-2).

Our core competency is essential to fulfilling our mission by providing quality health care services through innovative programs and services and by supporting the economics of our community. Our behaviors demonstrate our intentionality in our support of our local economy.

P.1a(3) Workforce Profile. CAMC Health System's workforce profile (Figure P.1-3) describes our employees, physicians and volunteers and their educational requirements. We do not include students as a segment of our workforce because they do not do the work of the organization (per the Baldrige definition). Recent changes we have experienced to our workforce composition are a planned shift to employment of specialist physicians to provide trauma coverage and fill gaps in the delivery of services to meet community need. We have increased the percent of employed physicians by 43% from 2009 to 2014. CAMCHS is union free. The key drivers that engage our WF in achieving our mission and vision are listed in Figure P.1-4 and were determined through approaches described in 5.2a(2). Key WF health, safety, security, and accessibility requirements and measures are provided in 5.1b(1) and 6.2c(1).

Figure P.1-3 Workforce Profile

Total Workforce – 8,005			
Workforce Segments	**Segment**	**% of WF**	**Educational Requirements**
	EMPLOYEES 6,917*		
	Nursing	29%	LPN, RN (AD, BSN, MSN)
	Non-Nursing	71%	Up to Post-Graduate
	PHYSICIANS 761		
	Non-Employed	57%	Post-Graduate
	Employed **	21%	
	Residents **	22%	
	VOLUNTEERS 327		
	Volunteers	<1%	

* Additional segmentation AOS
** Included in employee totals and percentages

P.1a(4) Assets. CAMC's major facilities include our four hospital campuses and outpatient sites. We are intentional in investments (intelligent risks) to balance growth, innovation and state-of-the-art healthcare delivery to create success now and in the future. We recently completed construction of a $72 million CAMC Heart and Vascular Center and a new $48 million outpatient cancer center opened in May 2015. We are an early adopter of technology, equipment and practices based on the use of intelligent risk criteria. Through our strategic planning process, we have identified the crucial role of investing in our information technology infrastructure as a catalyst for driving quality and safety outcomes. Recognizing

Figure P.1-4 Patients and Other Customers, Stakeholder Groups and Requirements

Groups P.1b(2)				Key Requirements and Expectations P.1b(2)	Performance 7.1a(1)	Satisfaction/ Dissatisfaction 7.2a(1)	Engagement 7.2a(2)
Patients	Inpatient (IP)			High quality, safe care	7.1-1 - 7.1-11	7.2-2 - 7.2-10	7.2-21
				Communication/respect	7.1-42; 7.3-29		
				Responsiveness/timeliness	7.1-45		
	Outpatient (OP)			High quality, safe care	7.1-37 - 7.1-40	7.2-11 - 7.2-17	7.2-22
				Communication	7.1-43 - 7.1-44		
				Timeliness	7.1-46 - 7.1-48		
	Emergency (ED)			Timeliness	7.1-49 - 7.1-50	7.2-18 - 7.2-19	7.2-23
				High quality, safe care	7.1-42		
Stakeholders	WF Segments	Employees	Nursing	Work processes	7.1b(1); 7.3-30; 7.4-27	7.3-20 - 7.3-23; 7.3-30 – 7.3-31	7.3-13 - 7.3-19; 7.4-1
				Understanding change	7.3-8; 7.3-30		
				Confidence in leadership	7.3-16 – 7.3-17; 7.3-30		
			Non-Nursing	Understanding change	7.3-8; 7.3-31		
				Work processes	7.1b(1); 7.3-31; 7.4-27		
				Confidence in leadership	7.3-16 – 7.3-17; 7.3-31		
		Physicians		Quality patient care	7.1-1 - 7.1-24	7.3-20 - 7.3-24; 7.3-26 – 7.3-27	7.3-14 - 7.3-19; 7.3-26 - 7.3-27
				Work processes	7.1-25 – 7.1-39		
		Volunteers		Purposeful work	7.3-28	7.3-28	7.3-28
				Respect	7.3-28		
Other Customers	Community			Access to care	7.1-52 - 7.1-53; 7.4-18 - 7.4-19	7.2-26 - 7.2-27; 7.2-24; 7.4-26	7.2-26 - 7.2-27; 7.5-16; 7.5-18
				Health improvement	7.4-16 - 7.4-21		
	Payors			Cost effective	7.5-11 – 7.5-12	7.5-4 – 7.5-5; 7.5-13; 7.5-19	7.2-26–7.2-27; 7.5-19 - 7.5-31
				High quality care	7.1-1 – 7.1-2; 7.1-10		

the shift from inpatient to ambulatory services and the employment of physicians, we are investing in our outpatient infrastructure.

P.1a(5) Regulatory Requirements. CAMC is required to operate under WV Certificate of Need law and rate regulation. Other key regulatory bodies include CMS, WVDHHR and OSHA. CAMC meets or exceeds regulatory requirements for these entities and additionally undergoes voluntary accreditation and review of more than 80 programs by professional organizations (AOS). In 2014, we changed from using TJC as our accrediting body to DNV because the DNV accreditation is: 1) process driven, 2) uses the ISO 9001 methodology, and 3) is better aligned with our Baldrige performance improvement journey.

P.1b Organizational Relationships

P.1b(1) Organizational Structure. CAMC Health System, Inc. (CAMCHS) is the parent company of Charleston Area Medical Center (CAMC), CAMC Foundation, CAMC Health Education and Research Institute (CHERI) and Integrated Healthcare Providers (IHCPI) dba CAMC Physicians Group. The CAMC Health System has a 17 member volunteer Board of Trustees (BOT) which also serves as the Board of CAMC. The CAMC Health System meets WV state law requirements for nonprofit board membership including community representation. Our governance operating system components are systematic and include structure, oversight responsibilities, talent and infrastructure (AOS).

The President/CEO reports to the BOT of the Health System and Senior Leaders (SL) report to the CEO, Executive Vice President/COO or the Executive Vice President/CFO. The

Figure P.1-5 Key Partners Relationships

	Key Partners	Role in Work Systems (Inpatient Care, Outpatient Care, Emergency Care)	Role in Enhancing Competitiveness	Key Two Way Communication Mechanisms	Role in Contributing to and Implementing Innovations	Key Supply Chain Requirements
SYSTEMS THAT GUIDE (Fig. 6.1-1) 1	WVU/ Charleston	• Resident education • Patient care for inpatient, outpatient and emergency patients	• Provide leading edge practice • Primary care, specialist and sub-specialist MS • Residents • Education	• QIPS • Program review • Member of Strategic Planning Team and Executive Council	• QIPS • Academic learning environment • Early adopter of best practices/innovation	• Improve clinical outcomes • Resident satisfaction with education Figures 7.2-2 - 7.2-8; 7.3-24 – 7.3-25
	Premier	• Collaborator on operational and clinical performance improvement for all work systems	• Provide benchmarks and best practices • Best Practice Learning Collaboratives	• Reporting: CMS, VBP, QUEST • Pay for Performance • Regular onsite visits, national meetings, collaboratives	• CMS Innovation Center convener • Testing ground for innovative ideas	• Improve CMS Clinical Indicators • Timelines for data submission • Accuracy of data Figures 7.1-5; 7.1-10; 7.1-30; 7.1-33; 7.1-34; 7.1-38
SYSTEMS THAT DO WORK (Fig. 6.1-1) 2	Crothall	• Environmental cleaning for inpatient, outpatient and emergency patients • Infection prevention	• Infection control • Patient satisfaction for cleanliness	• Environment of Care Report • Quarterly reviews • Goal cascade process and reporting	• Industry best practice leader • New tools, techniques and technology • Societal impact of CAMC on the community	• Improve HCAHPS cleanliness • Decrease infectious disease rates Figures 7.1-5; 7.1-62
	JLL	• Building and structures management • Facility and energy management • Construction and project management • Clinical engineering • ISO standards	• Provide benchmarks and best practices • Regulatory compliance • Staff training • Document management	• Quarterly reviews • Customer satisfaction reviews • Work order system • Annual financial review • Goal cascade process and reporting	• JLL innovation website elicits and implements best practices and innovations from employees across the entire JLL organization client list • Societal impact of CAMC on the community	• Decrease energy costs • Asset Life Cycle management • Key Performance Indicators Figures 7.1.73; 7.4-24 - 7.4-25
	CPS	• Pharmacy and medication management for inpatient, outpatient and emergency patients	• Industry research • National trend analysis • Focus on quality and decreasing cost • Project drug shortages and identify alternatives	• Medication adverse events • MAK overrides • Soarian • Goal cascade process and reporting	• Clinical Leadership Team • Best practices for clinical outcomes	• Decrease turnaround time • Decrease cost • Prevent adverse events Figures 7.1-68 - 7.1-70
	Morrison	• Nutritional care for patients • Food service for staff and visitors • Provide insight into customer behavior	• Patient and family satisfaction with food • Healthy meals • Prevention of food borne illnesses • Environmental and social issues	• Monthly satisfaction • HCAHPS • Quarterly reviews • Goal cascade process and reporting	• Support core competency • Work with community health improvement teams • Five Dimensional Innovation Model • Partnership with Healthy America	• Medically valid diets • Improve patient and employee satisfaction Figure 7.4-22
SYSTEMS THAT SUPPORT (Fig. 6.1-1) 3	Siemens/ Cerner	• Information System management and operations	• Proven workflows • Best Practice Order Sets • Industry best practice leader	• Down time • Member of Strategic Planning Team, Executive Council and COO Staff Meeting • Clinical documentation • Soarian	• Use of technology to solve complex monitoring issues • Support availability and use of Big Data • Cerner #13 in *World's Most Innovative Companies* by Forbes in 2013	• Decrease down time • Work flows • Decrease cost Figure 7.1-67

CAMC Health System Board also provides oversight for CHERI, the CAMC Foundation and IHCPI. Presidents from each of these entities report to the CAMCHS President/CEO. Leadership from all system entities serve on the Executive Council. All planning and processes are fully deployed throughout the health system entities. CAMC Teays Valley Hospital became a CAMC hospital in March of 2014.

P.1b(2) Patients, Other Customers, and Stakeholders. Patients are our key customers and are segmented by inpatient, outpatient and emergency. Other key stakeholders include our workforce (WF) segments, community and payors. Figure P.1-4 provides key patient, other customer and stakeholder groups, key requirements and performance expectations, satisfaction/ dissatisfaction and engagement measures. Market segments are defined as our primary (PSA) and secondary (SSA) service areas (Figure 7.5-20).

P.1b(3) Suppliers and Partners. We have a systematic approach (using eight criteria) for the strategic selection of suppliers, partners and collaborators as described in 2.1a(4) that focuses on building relationships that move suppliers to that of partner. Systematic communication approaches are used to share strategic and performance improvement plans and results ensuring that we build successful relationships. Figure P.1-5 outlines our key partners, their role in our work, guidance and support systems (Figure 6.1-1), role in enhancing our competitiveness, role in innovation, key mechanisms for two-way communication, and supply chain requirements.

P.2 Organizational Situation

P.2a Competitive Environment

P.2a(1) Competitive Position. CAMC is the largest hospital in West Virginia serving 12 counties with 598,618 residents (Primary Service Area 352,923; Secondary Service Area 245,695). CAMC leads service area market share with 35.1% for the total service area (48.0% PSA and 16.3% SSA). We are the top choice hospital in the service area as measured by the Alan Newman Research Image and Awareness Survey (Figure 7.2-1). In 2014, CAMC Health System had 39,118 inpatient discharges; 684,524 outpatient visits; 2,605 births; 115,986 visits to our Emergency Departments and 50,913 Urgent Care visits.

We compete [redacted] For our service area, we serve as the tertiary referral and safety net hospital for ten general acute care and six critical access facilities, including for our competitors. CAMC also serves as a designated sponsor hospital for all service area critical access hospitals and provides education, consultation and medical education support to assist these hospitals to remain viable in their communities.

P.2a(2) Competitiveness Changes. We have a strong market share position (Figure P.2-1) and continue to show growth, while our competitors show declines. Other key changes affecting our competitive situation surfaced through our

Figure P.2-1 Market Share and Key Competitors

Hospital	Beds	2011 Market Share	2012 Market Share	2013 Market Share	Variance 2011-2013	Market Share Change
CAMC	908	34.9%	35.2%	35.1%	0.2	0.57%
Comp A	<400	13.4%	13.2%	13.2%	-0.2	-1.49%
Comp B	<400	11.0%	10.7%	11.0%	0.0	0.00%
Comp C	<400	5.1%	4.7%	4.4%	-0.7	-13.73%

environmental analysis (and that are addressed in Figure 2.1-6 goals and action plans as noted) include:

- Health care reform including payment reductions (*Goals 17, 18)*
- Shift in hospitals to critical access status and decreasing number of specialists at our referring hospitals *(Goals 13, 18)*
- Decreasing population and health status in central and southern West Virginia *(Goal 19).*

These key changes create opportunities for innovation and collaboration as identified in the SPP:

- Working with our critical access and service area hospitals in the delivery of safety net services for pre-admission and post-discharge key work processes *(Goal 7).*
- Expanding telemedicine beyond the statewide WV Perinatal Telehealth Project that links rural health care sites with the tertiary care centers and perinatologists *(Goal 19).*
- Leading Kanawha Coalition for Community Health Improvement (KCCHI) efforts for community needs assessment, and prioritizing and addressing key community health issues *(Goal 19).*
- Partners in Health Network to support our rural hospitals, health departments and clinics throughout the state. Through our work as a founding member of this network, CAMCHS is able to support the viability of small rural hospitals through our learning environment, increasing access, coordination of care and performance improvement efforts *(Goals 7, 20).*

P.2a(3) Comparative Data. Key sources of comparative and competitive data from within the healthcare industry are listed in Figure P.2-2. Comparative data from outside healthcare

Figure P.2-2 Comparative and Competitive Data Sources (Full list AOS)

Data Sources	Types of Data	Results
AHRQ/CMS	Quality, Satisfaction, Cost	7.1; 7.2
Comparion	Quality Benchmarking, Safety	7.1
Crothall	Dietary, Cleaning	7.1
Healthgrades	Quality Benchmarking, Safety	7.1
Premier	Quality, Safety, Infection Control	7.1
Registry/Databases	Service Specific Quality, Cost	7.1
Sg2	Financial, Efficiency	7.1
Alan Newman Research	Image Awareness Survey	7.2
Health Care Performance Solutions	Employee Survey	7.3
Nursing Solutions	Employee Turnover	7.3
OSHA	Workforce Climate	7.3, 7.4
BoardSource	Board Performance	7.4
Governance Institute	Board Performance	7.4
COTH/Moody's	Financial Performance	7.5
Truven	Market Projections, 100 Top, Productivity	7.5
WVHCA	Cost, WV Market Share	7.5

include Alan Newman Research, Moody's, and BoardSource. CAMC is a founding member of QUEST, a Premier and IHI national hospital collaborative, comprised of a subset of 350 high performing hospitals that submit detailed comparative information. The areas include evidence-based care for inpatient and outpatient core measures (process measures), in-hospital mortality (outcome measures), cost of care (efficiency measure), harm composite score (safety measure), and patient experience (experience measure). These comparisons are against "best in class" hospitals in the country, including many Baldrige National Award winners. QUEST provides national benchmarks based on the top decile and top quartile performance of organizations shown to outperform most U.S. hospitals.

CAMC is an approved vendor by CMS for the HCAHPS survey (#15 in the nation in total volume of clients), allowing the use of unadjusted results for early data analysis.

There are a number of limitations we are unable to control including:

- Comparisons published by CMS provide adjusted results but lag by 9–18 months.
- Some benchmarks provide only averages.
- Uniform billing data is available from the WVHCA but there are strict policies regarding the release of data, and the information is dated by at least one year. Since this data excludes inpatient data for WV residents using out-of-state hospitals, we have included all payor data from states that make their data publicly available. The out-of-state data excludes bordering states KY and OH but includes VA, PA and MD.
- Outpatient origin data is not available for non-CAMC Health System hospitals and non-hospital facilities. Outpatient volumes for a very limited number of procedures are self-reported on the Uniform Report to the WVHCA.
- A limitation for segmentation of our hospitals' data is that CAMC operates under one provider number and all CAMC hospitals are recognized as one entity by CMS.

Figure P.2-3 Key Strategic Challenges and Advantages

STRATEGIC CHALLENGES	Healthcare Services	Operations	Societal Responsibilities	Workforce
Governmental pressure on continuously increasing quality and decreasing cost **(SC1)**	X	X	X	
Recruiting and retaining competent staff **(SC2)**				X
Medical Staff alignment and integration **(SC3)**				X
STRATEGIC ADVANTAGES	Healthcare Services	Operations	Societal Responsibilities	Workforce
Scope of services **(SA1)**	X		X	
Performance improvement culture and infrastructure **(SA2)**		X		X
Learning culture **(SA3)**		X		X
Grow Our Own **(SA4)**				X

P.2b Strategic Context. Figure P.2-3 shows our key strategic challenges and advantages aligned with the areas of health care services, operations, societal responsibilities and workforce.

P.2c Performance Improvement System. Performance improvement (PI) is a way of life at CAMC that is shaped by our cumulative experience and decades of growth that span the quality improvement teams of the 1980s to being an early adopter of the Six Sigma methodology from successful manufacturing models in the 1990s. We utilize DMAIC (Define, Measure, Analyze, Improve and Control) to systematically evaluate and improve key organizational projects and processes (Figure P.2-4).

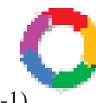
Figure P.2-4 DMAIC Process for Improvement

Define	• Determine strategic opportunity for improvement (data driven) • Identify customer requirements • Define the problem
Measure	• Develop process measures based on criteria • Collect process data • Check the data quality and identify benchmarks • Understand process behavior • Baseline process capability and potential
Analyze	• Analyze the process • Develop theories and ideas (potential root causes) • Analyze the data (trends and benchmarks) • Verify root causes and understand cause and effect
Improve	• Plan improvement strategies • Pilot strategies • Measure effectiveness • Implement improvements and re-measure as needed
Control	• Standardize new process • Sustain • Spread improvements

Note: This symbol signifies use of DMAIC process for improvement throughout this application.

Key elements of our PI System are described in Figure P.2-5 (full details AOS). Our "Grow our Own" approach has enabled us to develop and keep internal expertise to help cascade PI throughout the organization with 8 full time Six Sigma Black Belts, 92 Green Belts and 7 Quality Specialists.

Figure P.2-5 Performance Improvement Breadth and Depth

IMPROVEMENT IS EVERYWHERE
Improvement is CAMC Health System wide from the Board to every employee: • **Organizational Level:** Baldrige • **System and Process Level:** Enterprise Systems Model (Figure 6.1-1) • **Department Level:** Improvement Projects • **Individual Level:** PI training starting at orientation
IMPROVEMENT IS SYSTEMATIC
Process Improvement uses: • **Process Improvement Methodology**: DMAIC (Figure P.2-4) • **Tools**: 5S, Lean, Visual Management, A3 Problem Solving, Waste Walk, Standardized Work, Root Cause Analysis, ISO 9001 and others
IMPROVEMENT IS FACT BASED
Improvement is evaluated: • **Improvement Tracking**: Top 5 Boards, Scorecards • **Performance Verification and Accountability**: Organization Performance and Capabilities Review (Figure 4.1-3), Performance Management System (Figure 5.1-1)
IMPROVEMENT IS MATURE (Started in 1989)
Improvement is shared: • More than 67 Committees **Performance is integrated:** • Organizational Knowledge Management (Figure 4.2-1) 

Leadership

1.1 Senior Leadership. Senior leaders (SL) lead the organization using the Leadership System (LS) (Figure 1.1-1). The LS was developed by the Executive Council (EC), is in its sixth cycle of learning, and is used to guide the organization and provide a systematic approach to deploy the mission, vision, values and the expectations for how we lead in the CAMCHS. The foundation of the system is our mission and vision pillars. At the center are our patients and families. Every leader is expected to role model our values and demonstrate strong communication and listening skills. The numbers represent what a leader must accomplish. ① Leaders must understand the key requirements of their stakeholders in order to provide the ***best health care to every patient, every day*** (our mission) by ② setting direction, ③ aligning and cascading goals to the WF, ④ implementing action plans, ⑤ achieving plans, ⑥ mentoring and developing people, and ⑦ changing systems and structures to support performance improvement (PI). This is augmented by actions every leader must role model and cannot delegate (arrows). The LS fosters alignment and integration, guides SL personal actions and is fully deployed from SL to all leaders throughout the system to build leadership skills, commitment and PI. We measure the effectiveness of the LS through the achievement of our goals and the employee engagement survey.

1.1a Vision, Values, and Mission

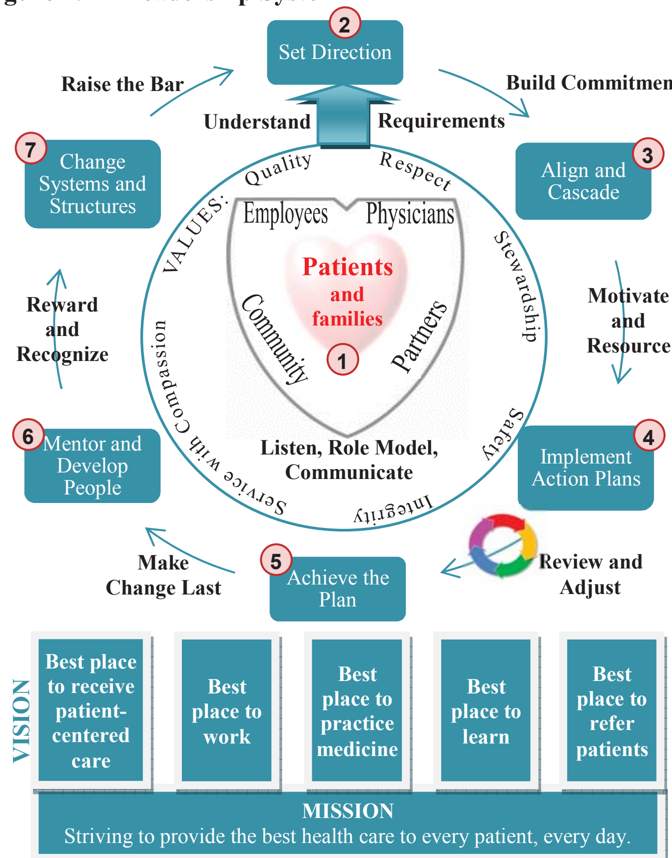
1.1a(1) Vision and Values. The EC and the Board of Trustees (BOT) set the MVV and use a systematic approach to review them annually as part of the strategic planning process (SPP) (Figure 2.1-2①). This process incorporates review by the Board and SPT and determines if the MVV remain viable in addressing current and future patient and stakeholder expectations and that they support sustainability of the CAMC Health System now and in the future.

SL deploy the MVV through the steps in the LS. Systematic approaches are used for deployment to the workforce of all system entities, key suppliers and partners, patients, payors and community (Figure P.1-4). These approaches include: 1) communication methods (see Figure 1.1-3 for methods by stakeholder segment), 2) performance planners (Figure 5.1-1), 3) orientation and education (Figure 5.2-3), 4) reward and recognition (Figure 5.2-2), 5) meetings, 6) contracts, 7) patient letters and handbooks, and 8) visual reminders. DMAIC is used to improve our MVV approach, deployment and integration method. SL are evaluated annually on their effectiveness in role modeling the values and how their actions reflect a commitment to these values. As examples, *Quality* is demonstrated by SL serving as champions for PI teams and *Stewardship* is reflected through service on community boards, volunteer activities and wise use of resources.

A recent cycle of learning resulted in the development and deployment of *My CAMC Blue Book* (AOS) to operationalize our values for the entire WF [3.2a(2)]. Two additional cycles of learning include incorporation of our MVV into Reptrax, our vendor tracking software and into all bid documents.

1.1a(2) Promoting Legal and Ethical Behavior. SL use a 5 step approach (Figure 1.2-1) to demonstrate their commitment to and promote an environment that requires legal and ethical behavior. This approach is deployed through: 1) Conflict of

Figure 1.1-1 Leadership System



Interest (COI) disclosure; 2) internal and external audits; and to all workforce through 3) Code of Conduct; 4) Compliance Hotline; 5) orientation; 6) annual in-services; 7) rounding; and 8) promoting open communication. These systematic approaches to promoting a legal and ethical environment are reviewed annually through the SPP (Figure 2.1-3 I).

SL set the standard for zero tolerance for non-compliance. The Chief Compliance Officer, a SL, has responsibility for oversight and reports directly to the BOT's Audit Committee on findings. Corrective action results and Compliance Hotline outcomes are used for organizational learning. Recent cycles of learning have resulted in revisions to required annual in-services for all employees and improvements to audit charters.

1.1a(3) Creating a Successful Organization. Senior Leaders' actions build an organization that is successful now and in the future by using the Enterprise Systems Model (Figure 6.1-1) to provide a fully integrated systems perspective through the design and ongoing improvement of our work systems and processes to be the *BEST place to receive patient-centered care* for our patients and to achieve our Core Competency (CC) of improving the health and the economics of our community. The LS is the vehicle for creating this environment and hardwiring these actions and the Sustainability Review process described below serves as the approach for evaluation and improvement.

The LS is our process for creating the environment and establishing the requirement for achievement of the mission (LS foundation), improvement of organizational performance (LS⑦), performance leadership (LS④⑤), organizational learning and learning for the people in the WF (LS⑥⑦).

A workforce culture that delivers a consistently positive experience for patients and other customers and that fosters customer engagement is created by focusing on the customer's requirements (LS 1) before direction is set. As described in 3.2a(2), we have a systematic process of identifying and deploying these requirements to all people and processes involved in patient and other customer support. A cycle of learning is a performance management matrix to further guide leaders with an objective evaluation of values and standards of behavior expectations which comprises 30% of all annual performance reviews.

SL create an environment for innovation and intelligent risk taking through our Innovation System (Figure 1.1-2). Our Innovation Culture supports this system though identification of culture drivers and forcing functions at different organizational levels. Our Innovation Process and Innovation Management provide the systematic processes to support success in the future. Achievement of the strategic objectives and organizational agility is accomplished through SL reviews in Figure 4.1-3, down to the performance results of every leader (LS 5). SL participate in succession planning and the development of organizational leaders [5.2b(3)] by identifying: 1) succession planning positions; 2) who could fill each position short-term; 3) the status of each succession plan candidate; and 4) by leading, guiding and mentoring selected candidates. A culture of patient safety is created and promoted though our values, the LS, and by including safety in the *operational* sustainability factors review process.

As a cycle of learning, CAMC implemented a highly integrated systematic Organizational Sustainability process to ensure sustainability for both ST and LT timeframes (full system AOS). Ten *operational* and six *strategic* sustainability factors have been defined. Each factor is assigned to a SL who is responsible for oversight, ongoing management (including PI plans), and reporting during the SPP (Figure 2.1-3) to identify any potential blind spots. The owner is responsible for ensuring the factor is sustainable and assessed for its environmental, social, and economic impacts as well as its sustainability related to disaster preparedness, disaster recovery, and continuity of operations [6.2c(2)] and Figure 4.1-3. These factors are reviewed as part of the SPP and status is tracked monthly.

Operational sustainability (those factors that are critical to stay viable short-term) is evaluated based on ten factors that include 1) financial and resource availability, 2) data (Figure 4.1-3), 3) WF capacity and succession planning [5.2b(3)], 4) WF capability, 5) facilities, equipment, technology, regulations, 6) legal and ethical environment, 7) safety, 8) key work systems and processes (Figure 6.1-1), 9) key suppliers and partners, and 10) supply chain.

Strategic sustainability (critical to stay viable long-term) is evaluated based on six factors: 1) PI and performance

Figure 1.1-2 Innovation System

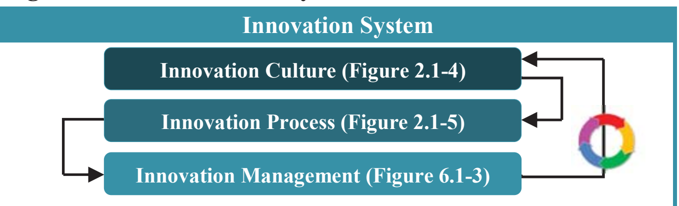


Figure 1.1-3 Senior Leader Communication Model

Senior Leader Communication Methods (Figure 7.4-1)	Frequency	Key Decisions	Need for Organizational Change	Patients & Families	Workforce: Employees	Workforce: Physicians	Workforce: Volunteers	Community	Payors	Partners & Suppliers
*BOT Committees	M	x	x							
*SL Staff Meetings	W	x	x		x	x	x			x
*AA/CD Staff Meetings	W	x	x		x	x	x			x
*Department Meetings	M	x	x		x					x
*Goal Cascades/SWOT	A	x	x		x	x	x			x
*Top 5 Boards	D	x	x		x	x	x			x
*Huddles	D	x	x		x					
*Performance Planners	A		x		x	x				x
*Orientation	O		x		x	x	x			x
*Leadership Rounding	D		x	x	x	x	x			x
*MIMs	Q	x	x		x	x	x			x
Safety Alerts	R	x	x		x	x	x			x
*Manager Forums	Bi-A	x	x		x	x				
*Nursing Governance	M	x	x		x					
*MSEC	Bi-M	x	x			x				
*MS Departments	M	x	x			x				
*Physician Advisory	M	x	x			x				
*GME Committee	Bi-M	x	x		x	x				
Inside the Boardroom	M	x	x	x	x	x	x	x	x	x
Employee Surveys	A				x	x	x			x
Contracts	N					x			x	x
*Intra/Internet site	D	x	x	x	x	x	x	x	x	x
CEN	D		x	x	x	x	x			x
Vital Signs	M	x	x	x	x	x	x			x
Newspaper Insert	Q	x	x	x	x	x	x	x	x	x
Marketing/Direct Mail	O			x	x	x	x	x	x	x
*Social Media	D	x	x	x	x	x	x	x	x	x

* Indicates two-way communication. Workforce - includes all system entities.
**D=Daily; W=Weekly; M=Monthly; Q=Quarterly; A=Annually; O=Ongoing; R=Real time; N=As needed

leadership (P.2c), 2) customer engagement (Figure 3.1-1), 3) organizational and personal learning (Figure 5.2-3), 4) strategy, innovation and intelligent risk taking (Figure 2.1-2), 5) leadership skills and development, and 6) community and social responsibility (1.2c).

As a result of our sustainability review process, we identified the opportunity to obtain Upper Payment Limit funding through the Federal Government. Our SL, working with the WVHA and state government, were successful in achieving this innovative funding solution that supports the financial viability of not only CAMC, but all WV hospitals.

The alignment and integration of the Enterprise Systems Model, LS and Organizational Sustainability Process is reviewed annually as our approach for creating a successful organization. As a cycle of learning, we are participating in the IHI Leadership Alliance designed for leadership of organizations with a track record of quality improvement to create an environment to not just survive, but thrive under emerging payment models.

1.1b Communication and Organizational Performance

1.1b(1) Communication. The LS requires the ability to communicate as a prerequisite for becoming a leader (bottom of the center circle of the LS). In addition, we require SL to have the ability to engage the entire WF, patients and other key customers. SL approach to engage the WF [5.2a(1)] is hardwired into the LS requirements for leaders to "build commitment", "motivate and resource" and "reward and

recognize". These requirements are supported by the systematic methods described in Figure 1.1-3, many of which encourage frank, two-way communication, cover all stakeholders and include multiple methods for each stakeholder. SL effectiveness is assessed through annual employee engagement surveys. As cycles of learning, each SL participates in Crucial Conversations and Crucial Accountability training with emphasis on frank two-way communication while creating a safe environment, and to support a focus on action for PI (Figure 4.1-3).

In addition to methods in Figure 1.1-3, to support our ongoing commitment to communicate with and engage our patients and families, we have integrated social media into processes to allow SL to respond real time to patient concerns gathered via social media sites through 24/7 monitoring, routing to the appropriate person and validating closure. Cycles of learning for engaging our community and payors include improvements in social media content and an online Health Information Center.

Key decisions and needs for organizational change are communicated through a systematic and cascading process from SL to managers to frontline workforce using the LS's actions. The communication method (Figure 1.1-3) depends on: 1) the audience (both internal and external); 2) scope; and 3) how quickly the message needs to be delivered. The method is evaluated for effectiveness both formally and informally (AOS). Cycles of learning led to the CEO's "Inside the Boardroom" email sent to the workforce on BOT meeting day to provide transparency and timeliness of sharing meeting highlights and increased use of social media for rapid deployment of key messages.

To achieve the "Best Place to Work," SL take an active role in motivating the workforce including reward and recognition programs (LS 6) to reinforce high performance and a patient, other customer and health care focus. This approach includes formal and informal programs (Figure 5.2-1) that are aligned with the LS and are based on input from WF surveys and listening posts. As an example, the CEO recognizes Heart and Soul winners each month at CAMC Board Meetings. A cycle of learning led to recognizing departments with the most improvement in their overall HCAHPS score and in 2015 a recognition program, created and managed by our medical staff to recognize workforce members, was initiated.

1.1b(2) Focus on Action. SL create a focus on action to achieve our mission, improve performance, and attain our vision through the LS and the SPP closed-loop alignment and integration shown in Figure 2.1-1. SL identify the needed actions and develop action plans to accomplish our mission through the SPP. Action plans from system goals are deployed through goal cascades (Figure 2.1-2 12) to individual WF members (Figure 5.1-1). BIG DOTs (Figures 2.1-6 and 2.2-1) serve as key performance measures for tracking action plan progress across all vision pillars. SL achieve innovation and intelligent risks as described in 1.1a(3) and Figure 1.1-2.

Creating and balancing value for patients, customers and other stakeholders to ensure the resources are prioritized to reach our goals is achieved by SL through the 16 steps of the SPP (Figure 2.1-2): Stakeholder needs are assessed (1-3); Balancing value for patients, customers and stakeholders is established by creating a focus on organizational performance and is supported by the balance between our pillars and associated BIG DOTs (4); Plans are aligned and integrated (5-7); Resources are provided for established plans - including financial and WF capability and capacity (8-10); Plans are deployed (11-13); Pillar goals and BIG DOT results are reviewed to ensure balance is being achieved (14); Course corrections are made if we need to adjust (15); and Best practices are shared (16).

SL ensure that PI is achieved through our review process (Figure 4.1-3) and the Impact Leadership Committee's role in prioritizing resources for needed improvement/innovation of key processes (Figure 2.1-5). Both processes were established as a cycle of learning. PI goals are set by the CAMCHS Board and results are reviewed monthly by the Quality Committee of the Board with expectations/directives for improvement (minutes AOS). The BOT Planning and Public Policy Committee (BPPPC) also reviews overall goal and BIG DOT progress quarterly to ensure our focus on action and the balance of value for patients, customers and community stakeholders that they approved as part of the SPP is being achieved.

1.2 Governance and Societal Responsibilities

1.2a Organizational Governance

1.2a(1) Governance System. Our governance structure is outlined in P.1b(1) and is established to ensure responsible governance through compliance with state laws, IRS guidelines, diligent adherence to the organization's governing documents, and the nomination and election processes for all health system entities. A cycle of learning this year expanded the role of the Nominating Committee to that of a Governance Committee to enhance accountability for systematic centralized review of these processes.

The Governance System: 1) reviews and achieves accountability for SL actions through our legal and ethical requirements and audit processes described in Figure 1.2-1. Additionally, 2) the BOT establishes accountability for SL actions by establishing annual performance goals for the CEO and 3) approving performance planners for each SL that cascade from the annually approved CAMCHS strategic plan (Figure 2.1-2). 4) Strategic Plan results are systematically reviewed through the BOT's seven committees and 5) reported at meetings of the full Board (4.1b) quarterly. 6) Achievement of performance planner goals for the CEO and SL is reviewed annually by the Board Compensation Committee as described in 1.2a(2). A cycle of learning resulted in the adoption of a standardized format for scorecards for SL linking their performance and creating line of sight accountability.

Fiscal accountability is achieved through the BOT's review of 1) monthly financial indicators including financial statements/budget reports, 2) credit rating report, and 3) bond covenants. Transparency in operations is achieved through 1) BOT meetings that are open to the public, 2) communication mechanisms (Figure 1.1-3) including "Inside the Boardroom" that is reported to the media, 3) publicly reported healthcare outcomes available on CAMC and other public websites, and 4) posting the Community Benefit Report on our website. Cycles of learning created an opportunity for the community to respond to our community benefit plan and priorities on line

and the implementation of a Board Portal that provides easy access for the BOT to governing documents and reports.

Selection of governance board members occurs through the BOT Nominating Committee process and adheres to state law requirements for membership. A cycle of learning is the use of a *Board Member Matrix Tool* to assess diversity and skill mix needs for responsible governance. Disclosure polices for the BOT include the nonprofit tax return and BOT Conflict of Interest disclosures. Internal controls on governance processes are assessed by the audit process (Figure 1.2-1).

A cycle of learning led us to becoming an early adopter of the applicable Sarbanes/Oxley rules, which include the independent status of Audit Committee members and their supervision of selection of the external auditor. The BOT Audit Committee reviews internal audit findings at each meeting, and external audits are reviewed annually. The Audit and Compliance Charters, which codify standards of effectiveness and opportunities for improvement of the audit process, are reviewed annually and updated as required. At least every three years, the external audit selection process is reopened and RFPs are submitted to the Audit Committee.

Protection of stakeholder interests is achieved through the governing role of the Board and by maintenance of CAMC's creditworthiness (bond rating). The BOT has a succession planning process for SL described in 5.2b(3) to ensure continuity of organizational governance.

1.2a(2) Performance Evaluation. The BOT Compensation Committee evaluates the performance of the CEO based on 1) achieving BOT approved annual goal and BIG DOT targets as defined by the CEO's Individual Scorecard, and 2) role modeling the organization's values. Executive compensation is determined based on the performance evaluation of these areas and development opportunities are identified annually for improving effectiveness. The CEO evaluates direct reports using the same process with recommendations reviewed and approved by the BOT Compensation Committee. A cycle of learning resulted in all SL participating in a multi-rater survey process aligned with our CAMC LS competencies. Each SL used the feedback to create a development plan to improve their personal effectiveness as leaders at CAMCHS.

An annual Board self-assessment identifies areas for improvement and educational needs for the Board. As a cycle of learning, each committee is now evaluated and committee chairs are responsible for reviewing the results and developing an improvement plan, if needed. Individual board member competencies are evaluated annually by the BOT Nominating Committee and any individual PI issues are addressed with the board member by the CEO and BOT Chair. Additionally, board members identify gaps in their personal learning and these are addressed through overall BOT, Board committee, or individual learning based on the scope of the gap. For example, BPPPC members asked for in-depth information on our physician recruitment policy and regulatory parameters. Board members may also request specific committee assignments to broaden their learning. These evaluation approaches are used to advance SL and BOT development and improve personal leadership effectiveness and that of the Leadership System. Cycles of learning include improvements to new board member orientation, identification of leadership educational needs and annual Board review of the LS.

1.2b Legal and Ethical Behavior

1.2b(1) Legal, Regulatory, and Accreditation Compliance. Our CC, *Improving the Health and Economics of Our Community*, is evidenced by our involvement and care for our community's health. We use our listening and learning approaches, including our community neighborhood groups; business planning processes; Supply Chain Management (Figure 6.2-1 ②); and tracking regulations and laws to proactively anticipate public concerns with our existing or new health care services and operations. In addition we use scheduled audits by Deloitte and Safety Committee Environment of Care assessments to identify adverse impacts of our health care services and operations. Once identified, we use the findings to determine the root cause and take action– either preventive or corrective. For example, plans for the building addition to CAMC Memorial showed an alteration of the existing traffic pattern and our community neighbors expressed concern about parking in the neighborhood. By anticipating their concerns, we were able to proactively present the community with plans to prevent adverse impacts of our operations.

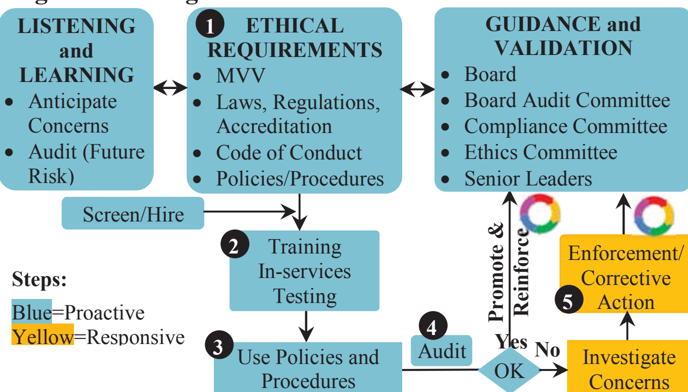
To prepare us for these impacts and concerns proactively, we specifically selected JLL, our key partner, for their expertise in facilities, energy management and sustainability programs, and their experience in mitigating risk. We work to conserve natural resources [1.2c(1)] and when building new facilities, we incorporate factors such as traffic flow, aesthetics and green building practices. Supply chain management processes integrate a Value Analysis process for equipment and products that incorporate WF and other stakeholder feedback (6.2b).

If any adverse societal impacts or public concerns are identified from our VOC, we have a defined process to investigate the issue and determine appropriate action (AOS). The systematic review of these trended impacts or concerns and action taken occurs during the Organizational Sustainability Process of the SPP (Figure 2.1-2 ②). Ongoing review occurs through the EA (Figure 2.1-2 ③) to stay abreast of changes and identify improvement opportunities for compliance, legal, regulatory and accreditation processes.

Key compliance processes, measures and goals are found in Figures 7.4-11 and 7.4-13 and demonstrate that we are meeting and surpassing regulatory, legal, and accreditation, requirements. Key compliance processes, measures and goals addressing risks associated with our health care services and operations are found in Figure 7.4-12. To ensure we surpass requirements, we invite external experts to survey our facility and processes for improvements in addition to those identified internally. For example, the McKenna School uses CAMC as a learning environment for TJC and DNV standards for their students from across the nation.

1.2b(2) Ethical Behavior. CAMC's five step approach to promote and ensure ethical behavior in all interactions (Figure 1.2-1) begins with ❶ establishing ethical requirements using inputs from our Listening and Learning posts and our systems that guide (Figure 6.1-1). There are both proactive ❷❸❹ and responsive steps ❺. We systematically validate that we have the appropriate requirements, they are deployed through training, and use is validated through audit. Our BOT, BOT

Figure 1.2-1 Legal and Ethical Behavior



Audit Committee, Compliance Committee, Ethics Committee and SL enable and monitor ethical behavior throughout the governance structure and organization and with interactions with WF, patients, partners and others through a seven step Ethical Compliance Guidance and Validation process (AOS). Key measures for enabling and monitoring ethical behavior are found in Figure 7.4-5. We have had no sanctions.

Potential breaches of ethical behavior are investigated by the CCO and/or General Counsel and appropriate departments, such as Human Resources. Corrective action can include termination as we have a zero tolerance policy for intentional breaches of privacy. Where there are concerns, we are responsive 5 and ensure closed-loop actions are reported to/validated through Guidance and Validation (Figure 1.2-1).

1.2c Societal Responsibilities

1.2c(1) Societal Well-Being. Societal well-being and benefit are reviewed during our SPP as seen in Figure 2.1-2 3 and Figure 2.1-3. Social considerations include the Community Needs Assessment and Civic Affairs requests and contributions. Economic inputs include the Ford Foundation Report, Economic and Employment Reports, etc. These inputs are used in planning and are cascaded to departments that address these functions as part of their daily operations. Examples of our approach to minimizing our environmental impact include annual review of alternative waste streams resulting in our being one of the region's largest recyclers (Figures 7.4-23). As a key partner, Morrison promotes "green" procurement and reduces the impact on the environment through energy and water conservation and reduction of waste. We also focus on our carbon footprint and implemented a new energy program resulting in cost savings (Figure 7.4-25). We contribute to social well-being by providing care for those without the ability to pay (Figures 7.4-18, 7.4-19) and improving access to tertiary care and safety net services. We provide specialty care services by recruiting specialists and subspecialists. We also provide GME programs, a Nurse Anesthesia school, nursing and allied health education financial support, visiting residencies and student rotations (full list AOS). Our community benefit for health professionals' education is over $40 million annually.

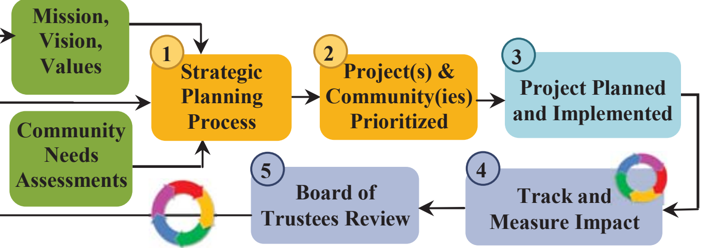
As the state's third largest private employer, we are vital to the economy of West Virginia creating an employment impact of 11,991 jobs and economic impact of approximately $775 million (Figure 7.4-26). Cycles of learning led us to being the **first hospital in the nation** to work with the Ford Foundation on identifying roles for hospitals in relation to wealth creation value chains to support local and state environmental, social and economic systems. As a result we have created a value chain to increase local wealth through development of growers for local food purchases by the CAMC hospitals (Figure 7.4-22). The model is recognized as a best practice by the Ford Foundation and is recognized by the American Hospital Association's *Ideas and Innovations for Hospital Leaders*.

1.2c(2) Community Support. CAMC supports and strengthens its key communities through a systematic approach that begins with our MVV and leverages our CC. In 2013, overall community benefit was $124,538,439 (Figure 7.4-16). We have been a national community health leader since 1994 when we established the Kanawha Coalition for Community Health Improvement (KCCHI). Our CEO and Chief Strategy Officer serve on the Steering Committee. Through the KCCHI, we complete community needs assessments every three years. Community work groups are established to address the top three priority health issues, develop action plans with measurable outcomes and report regularly to the community. This was an innovation for us, long before the IRS 990 requirement in 2013. This needs assessment serves as the foundation for our internal focus on actively supporting and strengthening our key communities.

Annually during our SPP (Figure 1.2-2 1) we review the community health needs assessment findings, community priorities and our Environmental Analysis. In alignment with our MVV, we identify community health projects and their associated communities 2 for the CAMCHS community plan. These projects are 3 planned, implemented, and posted to our CAMC website. We 4 track and measure progress and use the DMAIC process for improvement. The BOT approves the plan during the SPP (Figure 2.1-2 10) and 5 reviews plan progress annually. Because of the size and scope of our services, the approach to identify our key communities 2 is based on the project, key stakeholder needs and our capacity.

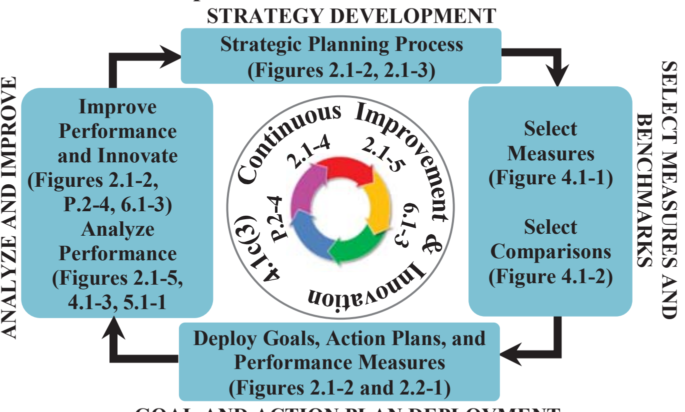
For example, our Perinatal Telemedicine Project includes 14 rural counties, while our Child Advocacy Center and HIV program serve our entire service area. Cycles of learning have resulted in improvements in the random telephone survey process to improve our response rate. In 2013, CAMC's charity care and community benefits (at cost) totaled 13.94% of total expense while the national average is 8.3%. Also, SL serve in key leadership roles for community activities, programs and organizations as well as support the workforce in participating in many community benefit activities such as Day of Caring and HealthFest. At the national level, we are one of ten organizations invited to participate in the National Quality Forum's Field Testing Group for Population Health. We are considered a leader in support of our community thus supporting achievement of our CC.

Figure 1.2-2 Community Support



Strategy

Figure 2.1-1 Integrated Planning, Deployment and Performance Improvement



2.1 Strategy Development. Figure 2.1-1 is a closed-loop cycle that ensures our: *strategies* are developed; *goals* and *action plans* have *performance measures* with comparisons; *goals and action plans* are deployed; and *performance* is analyzed, improved and innovated.

2.1a Strategy Development Process

2.1a(1) Strategic Planning Process. The CAMCHS conducts its strategic planning using a four phase 16 step integrated strategic planning and deployment process (Figure 2.1-2) that is aligned through our vision pillars. The Planning Department and Strategic Planning Team (SPT) are responsible for the planning process. The SPT is comprised of senior leaders (SL) and AAs from all entities, physician Clinical Directors, and key partners (WVU/ Charleston and Siemens). Formal input is obtained from the Board Committees, MS Officers, PAC, CAMC Physician Group, Nursing Councils, WF and residents.

The SPP produces a rolling 4 year long-range plan, an annual short-term plan, and a continuous review component that allows for organizational agility and operational flexibility. Through a cycle of learning, our planning time horizons were adjusted to align with health care reform time frames (4 year LT) and our annual performance management process (1 year ST). Organizational agility and operational flexibility are built-in (SPP 14 15) to allow us to rapidly respond to opportunities or unexpected threats that may arise given the changing nature of the healthcare environment. This occurs through continuous systematic review of performance (Figure 4.1-3) and the Environmental Analysis (EA) inputs (Figure 2.1-3) for strategic opportunities or threats that need to be addressed. Phase 1, Planning Preparation begins with making improvements to the Strategic Planning and Deployment Process (Figure 2.1-2) from evaluation of the prior year process (SPP 16). Step 1 begins in May when the BPPPC reviews the MVV and CC to ensure relevance to our success now and into the future. The Organizational Sustainability process 2 [1.1a(3) and AOS] reviews all components of the Organizational Sustainability System for any issues to be addressed in the strategic plan. The EA 3 provides an extensive ongoing internal and external review [2.1a(3)]. During July and August, each pillar owner reviews progress toward their 4 year SO 4 with the SPT as well as their recommended changes for SO, annual goals, BIG DOTs, benchmarks and targets (Figure 4.1-2) for the next 4 years.

In 6, the SPT assimilates inputs from 1, 2, 3 and 4 to identify the need for PI, innovation, transformational change, prioritization of change initiatives, gaps or blind spots 5 and strategic opportunities that could impact the achievement of our mission, vision and CC. For example, TCT was initiated to create systematic transformational change in the delivery of patient care. As a cycle of learning, we identified the need to expedite the deployment of Top 5 Boards to all departments creating re-prioritization of this change initiative in 2015.

2.1a(2) Innovation. Our strategy development process stimulates and incorporates innovation through the development of an innovation culture, a process and an

Figure 2.1-2 Strategic Planning and Deployment Process

Phase I: Planning Preparation
3 Environmental Analysis (Figure 2.1-3)
2 Organizational Sustainability Review 1.1a(3)
1 Review MVV and CC
4 Review Progress toward Achievement of Strategic Objectives, Annual Goals and BIG DOTs by Pillar
5 Gap/ Blind Spots Review
6 Assimilate and analyze 1 2 3 4 5 to identify SOP and key findings that impact achievement of MVV and CC

Phase II: Plan Development
7 Develop 4-year (LT) SO, Annual Goals (ST) and BIG DOTs
8 Vet and Input
9 Funnel Process to Align/Balance
10 4 Year SP Finalized
11 Goal Alignment

Phase III: Plan Deployment
12 Goal Cascade (Figure 2.2-1)
13 Goal, BIG DOT and Action Plan Communication Hardwired

Phase IV: Plan Achievement and Improvement
14 Report Progress
15 Analysis, PI and Innovation
16 Review SPP

Planning Phase	I. Planning Preparation	II. Plan Development	III. Plan Deployment	IV. Plan Achievement and Improvement
Steps	1 2 3 4 5 6	7 8 9 10 11	12 13	14 15 16
Timeframe	May – July	July – September	October – December	January Monthly/Quarterly
Key Participants	Board Planning Committee, BOT, SPT, PAC, Pillar Owners, Planning Dept., MS Officers, Dept. Managers, Workforce	SPT, Pillar Owners, Board Planning Committee, PAC, Dept. Managers, MS Officers, CAMC Physician Group, Nursing Councils, Residents	SPT, Pillar Owners Managers, Planning Department	Board Planning, BOT, SPT, Managers, Employees
Strategic Planning Elements Addressed	SA, SC, CC Innovation Opportunities Key Stakeholder Needs Blind Spots **(Figure 2.1-3 A-K)**	CC Funnel Process Blind Spots **(Figure 2.1-3 K)**	CC **(Figure 2.1-3K)**	Performance Improvement **(Figure 2.1-3 B-K)**
Outputs	MVV, SWOT Core Competency SA, SC Strategic Opportunities Blind Spots identified Pillar Owner review	4 Year Plan including 4 Year SO and Annual Goals for each Pillar Workforce Plan Blind Spots addressed Budget and Capital	Scorecards • BIG DOT • Entity • Department • Individual • Top 5 Boards	Performance Review (Figure 4.1-3) Monthly Scorecards Quarterly BIG DOTs Course Corrections Ongoing Review/Scans Formal Review of SPP

Figure 2.1-3 Environmental Analysis Inputs into the Strategic Planning Process

		Collect	Processes to Analyze and Develop Information	Who Involved
STRATEGIC CHALLENGES, STRATEGIC ADVANTAGES, STRATEGIC OPPORTUNITIES				
A	SWOT	MVV, CC; Organizational Sustainability Review; Environmental Analysis; Ability to Execute; Gap and Blind Spot review	Steps 1-5 of the SPP, SWOT from each Department and SWOT Development Process, Identify Risks to Future Success, SC, SA, Identify Strategic Opportunities	CSO, SPT, PAC, All Depts.
RISKS TO CAMCHS FUTURE SUCCESS				
B	Technology	Technology Scans; Supplier, Partner and Workforce Input; Figure 4.2-3 *Data and Information Availability*, Safety; Competitor Technology; Disruptive Technology	Cost/Benefit Analysis; Assess technology needed to achieve SO, Annual Goals and work processes; Explore systems to allow use of Big Data for insight and action; Blind Spots	SPT, Suppliers, Partners, Vendors, PAC, MS
C	Markets	Market and Competitor Data; Figure P.2-1 *Market Share & Key Competitors*; Figure 3.1-2 *Patient/Other Customer VOC Listening and Learning Posts*	Marketplace Blind Spots; Market Share and Market Analysis Report; Mergers and Acquisitions; Scenario Planning	Planning Dept., Board Planning, SPT, PAC, Mgrs.
D	Health Care Services	National, State and Local Data; Community Needs Assessment; Figure P.1-1 *Health Care Service Offerings;* Figure 1.2-2 *Community Support*; Figure 4.1-2 *Comparative Data Selection Process;* Changes in Health Care Delivery Role of Local Businesses	Identification of Program Gaps; Comparable Organizations' Future Performance; Listening Posts, Risk Assessment; Societal Well Being; 10 year forecast for demand for inpatient and outpatient services; Blind Spots	Board Quality and Planning, Planning Dept., SPT, MS, PAC, Community
E	Patient/ Stakeholder Preferences	Satisfaction Surveys; Complaints; Figure 3.2-4 *Complaint Management Process;* Safety; Shifts in Patient Care Delivery Locations; Figure 3.1-2 *Listening Posts*; Figure 3.1-1 *Customer Communication System*	HCAHPS and Satisfaction Survey Reviews, Patient Experience Aggregated VOC Reports; A3 Problem Solving; Blind Spots	Patient Experience Council, BPTL Pillar Owner, SET, SPT
F	Competition	Market Assessment; Figure 3.1-2 *Listening Posts*; Figure 3.2-3 *Customer Relationship Model;* Competitor Strengths and Weaknesses; Non-Traditional Competitors	Trend Analysis; Future Performance; Referral Pattern Shifts; Competitive Blind Spots, Potential New Entrants into the Market Blind Spots	Planning Dept., Board Planning Committee, SPT
G	Economy	National, State and Local Issues; Business/Industry Closures; Financial Market Reviews; Unemployment	Review Trends and Industry Intelligence; Blind Spots	Board Finance Committee, SPT
H	Innovation	Innovation Inventory; Gaps Identified in Figure 2.1-5	Learnings from systems that outperform others; Figure 2.1-5 *Innovation Process;* Figure 6.1-3 *Innovation Management*	SPT
CHANGES TO THE REGULATORY ENVIRONMENT				
I	Regulatory Environment	National, State and Local Regulatory, Legal and Ethical Requirements; Legislative Briefs; Incinerator Report, Recycling, Energy Study, Safety, ISO and NIAHO	Review Survey Results; Gap Analysis; Audits; Mock Surveys; Concurrent Review; Gaps for ISO and NIAHO standards; Gaps in Key Support Processes; Blind Spots	Safety Dept., SPT, Compliance, Legal, Suppliers, Partners
ABILITY TO EXECUTE THE STRATEGIC PLAN				
J	Sustainability	1.1a(3); Organizational Sustainability Reports	Organizational Sustainability Factors Review; Blind Spots	SPT
K	Ability to Execute	Governance System; CC; BIG DOTs; Scorecards; Figure 6.1-1 *Enterprise Systems Model*; Workforce Capability and Capacity; Listening Posts; Figure 1.1-1 *Leadership System;* Figure 4.1-3 *Organizational Performance and Capabilities Review*; Organizational Sustainability Reports	Annual review of process performance for these systems and processes; CC review; Funnel Process; BIG DOT Approach and Review; Annual review of Health Care Service Work Process Requirements; Review of Support Process Performance; Review Key Support Process Performance and Gaps; Blind Spots	Executive Council, SPT, CEO, COO, CFO, CSO
BLIND SPOTS – *See the Blue Notations in the Analysis Column*				

approach to innovation management (Figure 6.1-3). We create a culture that supports innovation (Figure 2.1-4) that is deployed at each level of the CAMCHS (Organization, Cross Department, Department). For each level there are culture drivers which motivate and drive innovation. Beyond this, there are Innovation Forcing Functions. Analysis is performed by specific groups to make innovation or PI decisions using intelligent risk (Figure 2.1-5 (6)). Innovation results are shown in Figures 7.1-45, 7.1-54, 7.1-56, 7.1-70 and 7.4-26.

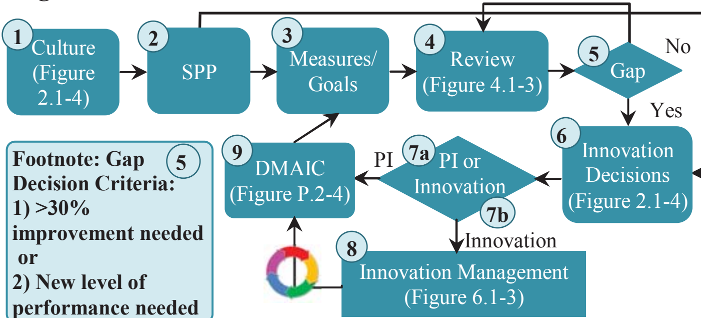
This cultural infrastructure supports our Innovation Process (Figure 2.1-5) and is driven by our Culture (1), SPP (2), Measures/Goals (3), and Reviews (4). During the SPP, we identify strategic opportunities by comparing our gaps (5) and SC (Figure P.2-3). Opportunities for innovation are split into two paths by the appropriate decision making group (6). At the organization level, gaps are assessed (5) and SL identify which Strategic Opportunities are intelligent risks to pursue and determine if our PI process (7a) will address the gap or if (7b) a discontinuous or breakthrough change (innovation) (8) is needed. The DMAIC process is used to review both PI and innovations. An example of our innovation culture at the department level is the creation of a Hospital Based Certification Program for Organ Donation Management by our Neuro-Medical Critical Care Department. This innovation has been shared at the

Figure 2.1-4 Innovation Culture

Level/ Impact	Culture Driver	Innovation Forcing Function	Measures	Figure Number	Decision Making Group
ORGANIZATION Senior Leaders	•Sustainability •MVV, CC •Cost/Quality/Access •Needs Assessment •PI Culture •Leadership System •Innovations	•Healthcare Delivery Changes; Macro trends •Social Media •Benchmarking •Competitors •Reimbursement Changes •Regulation	Overall Goals Overall Quality	7.4-27 7.1-1 – 7.1-2	SL Impact Leadership (approves required resources)
CROSS DEPT. Middle Management	•Leadership System •PI Culture/TCT •Learning Environment •Scorecards •Just Culture	•Goal Cascade •Cost Reductions •BIG DOT Targets •PI System •Technology Lifecycle •Frustrations	Mortality PI Savings	7.1-10 – 7.1-11 7.5-11	QIC Safety Committee Nursing Councils
DEPT. Workforce	•Teamwork •PI •TCT •Just Culture •PMS	•Goal Cascade •Patient/Family Requirements •Performance Planners •Frustrations	HCAHPS CMS Measures	7.2-2 7.1-5; 7.1-25 – 7.1-30	Department Manager Collaborative Practices

national meeting of the Organ Donation and Transplant Alliance Community of Practice, recognized by Sigma Theta Tau, and will be presented at the International Research Conference as a nursing best practice and is being benchmarked by a number of hospitals, including Johns Hopkins. Key strategic opportunities identified in the last planning cycle (Figure 2.1-3 A) include increasing affiliations with hospitals, other providers and payors; formalizing physician alignment; and strengthening primary care (Figure 2.1-6).

Figure 2.1-5 Innovation Process



2.1a(3) Strategy Considerations. Figure 2.1-3 shows the data collected and analyzed to develop information for our SPP (Figure 2.1-2) in 2-6 and 9, including SC and SA (Figure 2.1-3 A), risks to our future success (Figure 2.1-3 B-H), potential changes to the regulatory environment (Figure 2.1-3 I), potential blind spots in the SPP and information (Figure 2.1-3), and our ability to execute the strategic plan (Figure 2.1-3 J,K). The Planning Department has a systematic process (AOS) for collecting data for the EA and presenting the data for analysis by the SPT, including EA highlights or changes to prior year reviewed in June. A cycle of learning is the availability of the EA online with searchable features.

2.1a(4) Work Systems and Core Competencies. Our key work systems are inpatient, outpatient and emergency care. Our process for making work system decisions that facilitate the accomplishment of our strategic objectives occurs during the SPP (3-7) as we evaluate our "ability to execute" (Figure 2.1-3 K), and review our "systems that do work" in the Enterprise Systems Model (Figure 6.1-1) compared to expected results. As a result of this review, we added a goal to value stream map our emergency care processes in 2015.

To determine which key processes will be accomplished by external suppliers or partners, our systematic assessment process incorporates the use of 8 criteria (AOS). If the findings are favorable, as a cycle of learning three final tests must be met: 1) compatibility of the supplier's values with CAMC's values; 2) ensuring the outcome would capitalize our CC; and 3) the partner or supplier's CC will provide an advantage to our market or services. EC oversees the process and decision criteria are deployed to work system owners. Annual review of this process is integrated with our SPP (Figure 2.1-2 4) (Figure 2.1-3 K). Examples of using this process resulted in contracting with Crothall in 2011 to provide housekeeping management and with JLL in 2013 for construction and facilities management.

Every year, through Phase I of the SPP, we listen to inputs and revalidate or revise our CC or identify future CCs based on a review of changes to our SC, strategic opportunities and SA. An improvement to this process for 2012 included the adoption of a systematic CC Determination process (AOS) resulting in a revised CC. As the inputs/steps of this system change, the future CC can change. Based on our process for review of our work systems, we are currently evaluating population health as a future work system due to health care reform's system of care focus.

2.1b Strategic Objectives

2.1b(1) Key Strategic Objectives. *Please note that CAMC terminology is different than criteria language.* Our key SO (4 year), the important annual goals and action plans, action plans for each department, and the timetable for accomplishing them are outlined in Figure 2.1-6. The full strategic plan including all cascaded action plans for each department in the CAMCHS is AOS on line or in printed format. Key planned changes identified in the SPP include 1) accelerated implementation of TCT on all nursing units and deployment to ancillary departments to increase capability to support the overall goals of the organization (operations) *2015 Goal 8*; 2) redefinition of our physician enterprise model to ensure we are creating value for all stakeholders (customers, markets, operations) *2015 Goal 13;* 3) Value Stream Mapping (health care services, customers) *2015 Goal 8,* and 4) Cerner IT system (partners) *2015 Goal 3*.

2.1b(2) Strategic Objective Considerations. Our systematic approach to achieve the appropriate balance among the varying and potentially competing organizational needs is through a balanced scorecard approach created by our pillars and their aligned strategic objectives (Figure 2.1-6).

Our process to address our SC and leverage our CC, SA and strategic opportunities through development of our SO and aligned goals and action plans occurs in the SPP 7–11. Figure 2.1-6 demonstrates this alignment.

Our process to ensure our SO, annual goals, action plans and BIG DOTs balance ST and LT planning horizons occurs through SPP steps 8 and 9 as we determine organizational capability and capacity for goal accomplishment utilizing intelligent risk criteria. Our Pillars consider and balance the needs of all key stakeholders, including patients and families, WF, MS, suppliers and partners as described in 1.1b(2).

The strategy development process is reviewed annually (SPP 16) and has undergone multiple cycles of learning including formalizing the pillar review process by pillar owners and formalizing processes for WF input. Our process has been benchmarked by local, regional and national organizations.

2.2 Strategy Implementation.

2.2a Action Plan Development and Deployment

We implement our strategy as shown in Figure 2.2-1. The CAMCHS strategic objectives 1 (with their associated 4-year BIG DOTs) are translated into the CAMCHS annual action plans, called annual goals (with the associated 1-year BIG DOTs). 2 The system annual goals and BIG DOTs are translated to entity/hospital/corporate department action plans and scorecards. 3 These entity/hospital/corporate action plans and scorecards are translated to department action plans and department scorecards. 4 Department action plans and scorecards are cascaded to individual performance planners

Figure 2.1-6 Key Strategic Objectives, Annual Goals, Annual Action Plans, BIG DOTs, Timetable for Achievement and Aligned Strategic Opportunities, SC, SA, CC (Full plan AOS)

Mission: Striving to provide the best health care to every patient, every day. CC: Improving the health and economics of our community.

Cascaded Annual Action Plans: Cascaded aligned action plans and targets for each CAMCHS department available in on-line planning system (1 year short-term) (Example below and all AOS) Figure 2.2-1 and 2.2a(5)

Pillars	2015 – 2018 Strategic Objectives (4-year long-term) CAMC Health System KEY STATEGIC OBJECTIVES	2015 Annual Goals (1-year short-term Action Plans) CAMC Health System (Each Entity, Hospital, Corporate Area) MOST IMPORTANT GOALS TO ACHIEVE SO	BIG DOTs (4-year long-term) Results Figure # KEY MEASURES	2014 Baseline	Performance Target 2015	Stretch Target 2016	Stretch Target 2017	Key Benchmark & 2018 Target	Comparison to Projection of Competitor Performance
					TIMETABLE FOR ACHIEVEMENT				
Best Place to Receive Patient Centered Care	•Improve HCAHPS patient experience results to top decile SC1 •Achieve top decile performance on clinical care outcomes SOP (B)(C) SC1 SA2	1. Improve processes that support our customer service vision and timeliness of responding to key customer needs. 2. Deploy standardized processes for communication with patients/families. 3. Improve use of Soarian and workflows. *NEW GOAL: Replace Siemens/Soarian with Cerner IT system (See 2.2b).* 4. Accelerate coding and clinical documentation improvements. 5. Improve appropriate use. 6. Improve evidence-based care reliability. 7. Improve effectiveness of transitions of care to reduce readmissions. SOP(C). 8. Deploy TCT to all nursing and selected ancillary departments. Value Stream Map key processes in ED, OR, CDL and Ambulatory areas. 9. Improve safety systems to reduce harm. SOP(B)	•HCAHPS Pt. Experience Composite (7.2-2)	68%	73%	76% (QUEST Top Quartile)	77%	79% (QUEST Top Decile)	Local + Regional =
			•HCAHPS Discharge Information Composite (7.2-7)	85%	88%	89% (QUEST Top Quartile)	90%	91% (QUEST Top Decile)	Local + Regional =
			•O/E Mortality (7.1-10)	0.76	0.74	0.73	0.72	0.67 (QUEST Top Decile)	Local + Regional +
			•TCT Implementation – Value Streams (7.4-27)		3	6	9	10 5S 30 depts.	N/A
			•Patient Safety Composite (7.1-5)	0.52	0.50	0.49	0.48	0.45 (Premier Top 5%)	Local + Regional +
Best Place to Work	•Improve employee satisfaction and engagement to "Employer of Choice" SC2	10. Identify at least one opportunity in each department from the 2014 Employee Survey and develop an action plan for improvement.	•Employee Engagement Composite Score (7.3-20-7.3-23)	3.98	3.99	4.00	4.10	4.11 (EOC)	N/A
Best Place to Practice Medicine	•Ensure medical resources to meet service delivery needs/ reimbursement models, and create the capability and capacity to respond agilely to healthcare reform SOP(A)(B)(C); SC 2,3	11. Fill gaps in identified critical medical staff recruitment needs. SOP(A)(C) 12. Implement a Medical Staff leadership program. SOP(B) 13. Define our Physician Enterprise Model. SOP(A)(B)(C)	•High Priority Recruitments (7.5-24)	67%	80%	90%	100%	100%	N/A
			•HCAHPS Physician Communication Score (7.2-5)	79%	80%	81%	83%	87% (QUEST Top Decile)	Local + Regional =
Best Place to Learn	•Ensure accredited education and research programs •Create and sustain a clinical learning environment that promotes innovation, patient safety and PI SA3,4	14. Improve integration of research and academic programs and learners to Quality and Patient Safety structure, processes, QIPS and research. 15. Incorporate Individual Leadership Learning Plans in all Leadership Performance Planners (front line leaders up).	•Accreditation status of all GME programs (7.4-15)	15/15	All programs achieve continued accreditation status (15/15)	15/15 and no warnings or adverse actions	Citations removed	15/15 ACGME	N/A
Best Place to Refer Patients/Market Share	•Grow market share in primary and secondary service areas SA1 •Establish competencies for success in the health care reform environment SOP (A)(C), SC1	16. Grow identified service lines. 17. Achieve budgeted bottom-line. 18. Improve cost, efficiency and productivity. 19. Implement plan to improve the health of our communities. SOP (C) 20. Identify affiliation opportunities. SOP(A)	•Service Line Volume (7.5-23)	Proprietary					Local +
			•Expense/AA (7.5-2)	Proprietary					
			•Reduction of Operating Expense (7.5-11)	$17.3M	$20M	$22.5M	$25M		N/A
			•Excess of Revenue over Expense (7.5-9)	Proprietary					Local +

Our **Strategic Opportunities (SOP)** are: **SOP (A)** increasing affiliations with hospitals, other providers and payors, **SOP (B)** formalizing physician alignment, **SOP (C)** strengthening primary care. Our **Strategic Challenges** are: **(SC1)** Governmental pressure on continuously increasing quality and decreasing cost, **(SC2)** Recruiting and retaining competent staff, **(SC3)** Medical Staff alignment and integration. Our **Strategic Advantages** are: **(SA1)** Scope of services, **(SA2)** Performance improvement culture and infrastructure, **(SA3)** Learning culture, **(SA4)** Grown Our Own.

* + "CAMC is better than"; = "CAMC is equal to"; **N/A** "Not applicable or available

SAMPLE Cascaded Action Plan - Goal 9. *Improve safety systems to reduce harm*. GENERAL HOSPITAL TARGET: *Patient Safety Composite 0.5%* ; ACTION PLAN: *Create focus on improvement of CLABSI and CAUTI*. GENERAL HOSPITAL AA SERVICE LINE GOAL: *CLABSI AND CAUTI 0.5%; ACTION PLAN: Achieve improvements through Layered audits, Use of Care Bundles and Top 5 Board*; NURSING UNIT GOAL (ICU): *CAUTI SIR <0.5%, ACTION PLAN: Decrease use of indwelling catheters; Implement processes to manage incontinence.* ICU NURSE PLANNER GOAL: *Cleaning of indwelling cath per care bundle 100% of time.*

(all employees) and individual scorecards (managers and up). This planning cascade is completed annually in SPP 12.

2.2a(1) Action Plans. Our ST action plans (annual goals and cascaded department action plans) are the actions we need to take for the year to achieve our LT action plans (4 year SO) as shown in Figure 2.1-6. We measure our success through meeting or exceeding our BIG DOT targets at the system level and achievement of the associated cascaded measures for each entity, each department and each individual. Once the SPT has finalized the 4 year plan 10, the entity, hospital and corporate leaders identity the goals that are applicable to their areas and develop their entity/hospital/corporate area action plans. The Chief Strategy Officer coordinates half day goal cascade meetings (Figure 2.1-2 12) with each entity president, hospital VP, and corporate department VP and their department managers during the 4th quarter to develop department goal priorities, action plans and targets that support the cascaded system goals throughout all entities and partners. This interactive process creates a clear understanding of leadership goals for the system and a direct line of sight from the department to the system goals. This process is aligned with the actions of our LS, Figure 1.1-1.

2.2a(2) Action Plan Implementation. As described in 2.2a(1), action plan development and deployment occurs simultaneously through the goal cascade process to the department manager level (Figure 2.2-1 3). Once approved by the SL for alignment and expected results, department managers enter their action plans and targets into the online goal reporting system. These reports are reviewed by the system pillar owners for integration across the system. Department managers and key partners are responsible for cascading department goals to their employees and to individual performance planners.

To hardwire communication of the goals and BIG DOTs 13, all departments use Top 5 Boards (AOS) as a working visual communication tool showing the alignment from top to bottom throughout the organization and to keep department progress visible and actionable. This helps to ensure every group achieves annual goals and CAMCHS achieves its SO.

Deployment to medical staff and development of their action plans also occurs through the annual goal cascade process with the Physician Advisory Council. Key partners (Figure P.1-5) participate in the goal cascade process for Support Services and attend hospital cascades to ensure they are integrated across all hospitals (Crothall, Morrison and JLL). WVU is part of the CHERI goal cascade.

SL and department mangers enter progress on their action plans quarterly and monthly into the on-line goal system. SL review progress monthly with their direct reports. The EC and BOT conduct quarterly progress reviews towards goals and targets relative to the system BIG DOTs and hospital measures 14 15. Improvement teams/innovation processes are implemented if the need for course correction is identified (Figure 2.1-5). Our process to ensure we sustain the key outcomes of our action plans is described in 4.1b.

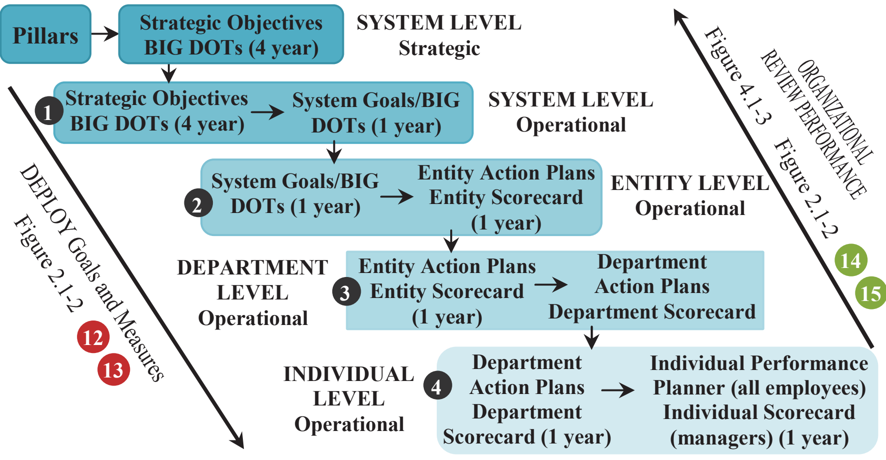
SL measure the effectiveness of the cascade deployment process each year through review of both organizational and individual goal achievement 14 and VOC tools (Figure 1.1-3). We have undergone many cycles of learning including the formalized goal cascade meetings, use of Individual Scorecards and improvements to the online system. The final step of the SPP 16 occurs each January and closes the feedback loop as the SPT does a formal review of the SPP and makes recommendations for improvement. The SPP is in its 13th cycle of learning.

2.2a(3) Resource Allocation. We ensure that financial and other resources are available to support the achievement of our action plans while meeting current obligations through a carefully managed process that incorporates the annual budget, capital, WF, information system and MS development plans. The budget planning cycle coincides with the SPP, thus the budgetary resources to support these action plans are built into the budget, and LT budget needs are identified and are incorporated into the operating and capital budget allocation processes. Steps 4, 9 and 10 consider prioritization of resource allocation for labor, capital and other operating requirements needed to accomplish the strategic plan. Financial and other risks associated with the plan are proactively managed through ongoing environmental scanning (Figure 4.1-3) for a comprehensive understanding of our current risk state and prioritizing the most important risks with the greatest impact and likelihood of occurrence.

2.2a(4) Workforce Plans. The key WF plans are shown in Figure 2.1-6 under the *Best Place to Work, Best Place to Practice Medicine* and *Best Place to Learn* pillars. This is detailed down to specific action plans for each applicable department (AOS).

Our process for establishing key WF plans to support our ST and LT SO and action plans is a 2-step aligned process. 1) The Human Resources Department works continuously on the CAMCHS WF Plan [5.1a(1)], and 2) through the SPP, each pillar owner identifies any changes in WF capability or capacity created by the LT SO. These changing WF needs are compared to the WF Plan projections and any modification to the SO and goal is addressed. The WF plans are integrated with the aligned budgeting process to address specific staffing and training needs to support the action plans, consider potential WF impacts and potential changes to WF capability and capacity needs

Figure 2.2-1 Action Plan Development and Deployment



as described in 5.1a(1). If a new service, adoption of new technology or work system design or innovation is needed and new skills are required of our WF, the WF Plan is modified to add a timeline and strategy for having a ready WF. As part of the quarterly review of BIG DOTs, the SPT reviews the key WF indicators (turnover, productivity, staffing levels, etc.) and determines what, if any, changes need to be made to support accomplishment of our strategic objectives.

2.2a(5) Performance Measures. Our BIG DOTs are CAMCHS's key performance measures for tracking achievement and effectiveness of our action plans. BIG DOT targets (Figure 2.1-6) are selected 7 through a systematic process of data selection, collection, alignment and integration described in 4.1a(1). Each entity/hospital/corporate area establishes action plans from the annual goals and scorecards with aligned BIG DOT measures which are cascaded to each department and measured through the department manager scorecard (AOS and example at bottom of Figure 2.1-6).

We ensure the action plan measurement system reinforces organizational alignment through our goal cascade and deployed scorecard process. In addition, we ensure integration by having each pillar owner being responsible for tracking progress across the system to ensure we are incorporating all key deployment areas and stakeholders.

2.2a(6) Performance Projections. Annually as part of the SPP 7, BIG DOTs and targets are reviewed for alignment with the Vision Pillars and are revised to address the intended measurable effect of the SO and annual goals. Figure 4.1-2 describes our process for selection of benchmarks and level of performance. Performance projection is a systematic process that involves realistic assessment of changes to our current state that can be achieved through PI/innovation. Through multiple cycles of learning, performance projections for each BIG DOT (1 year ST, intermediate, and 4 year LT targets) (Figure 2.1-6) are now determined through the use of 15 methods we tailor to the selected metric (AOS). Examples include: 1) externally established standards of performance (i.e. VBP, MU), 2) benchmarking studies/comparative data, and 3) forecasting methodologies that use key factors driving current and future utilization. Pillar owners and the SPT compare our projected performance against the projected performance of our competitors. Any current performance gaps are addressed through the annual SPP 15 using the Innovation Process (Figure 2.1-5 3 4 5). If a change in a competitor's performance or a blind spot is discovered through the continuous performance review (Figure 4.1-3), action plans are modified as described in 2.2b.

2.2b Action Plan Modification. As described in Figure 2.1-1, we built agility into: 1) the SPP; 2) the listening/status that is part of the reviews; and 3) the analysis and improvement actions. This enables us to establish and implement modified action plans if circumstances require a shift in plans and rapid execution of new plans. These circumstances are identified through our organizational review process (Figure 4.1-3). Specifically, we establish and implement modified plans and budgets at the department level through the SL, hospital VP or AA working with the manager to create quarterly plans for improvement. If an entity level change is identified, SL address the issue as described in 1.1b(2). Through a cycle of learning, the use of the A3 tool has improved our ability to identify and implement key action plan changes needed. An example of a recent action plan modification is our decision to change information systems from Siemens to Cerner in February 2015. This decision was based on our ongoing EA review through Figure 2.1-3 A,B,E,H,K. Using Intelligent Risk criteria, we identified the ability to rapidly enhance our Big Data analytic competencies, address key stakeholder requirements and leverage our financial viability for the LT. This leadership change management decision requires involvement of employees at all levels, constant communication, the need for agility and re-prioritization of both IT and organizational work.

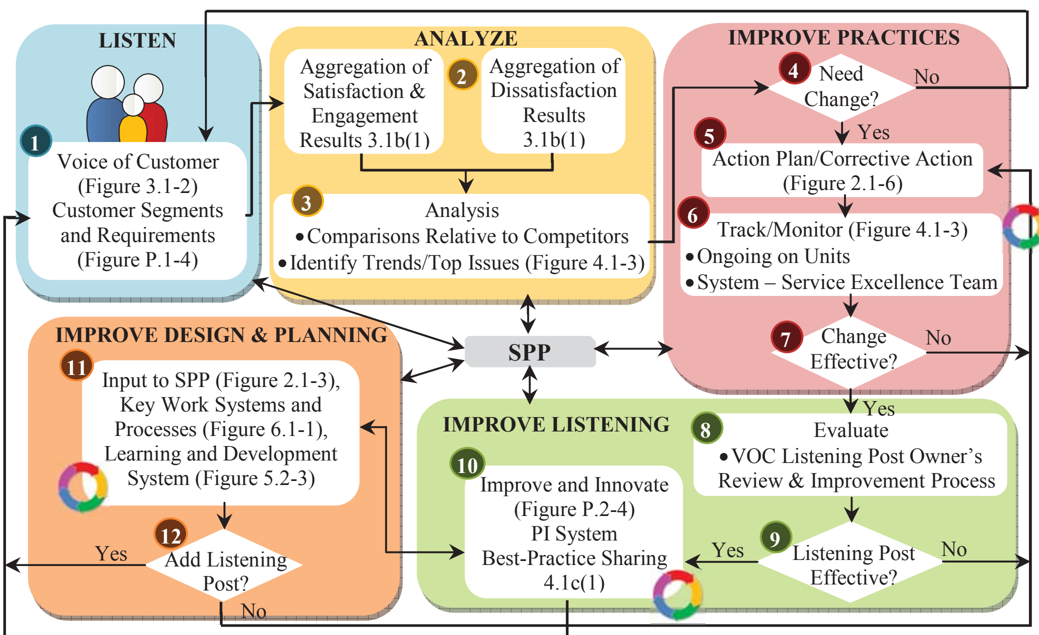
Customers

3.1 Voice of the Customer. To obtain information from our patients and other customers, we use a highly integrated 12-step process (Figure 3.1-1) that combines elements of our voice of our customer (VOC) and customer engagement processes.

3.1a Listening to Patients and Other Customers

3.1a(1) Current Patients and Other Customers. We listen to, interact with and observe (Figure 3.1-1 1) patients and other customers to obtain actionable information through a wide range of quantitative and qualitative listening methods (Figure 3.1-2 – *the rows*) that vary for different patient groups, other customer groups and market segments (Figure 3.1-2 – *the columns*). To ensure that data are actionable, each listening post (Figure 3.1-2 – *the rows*) is assigned an owner who is responsible for the analysis. Several years ago, in a cycle of learning, we established the Service Excellence Team (SET) that is tasked to be the central repository for all VOC information and to systematically ensure actionable data for improvement (for each patient group/*column*) at the system level. The SET is chaired by a Senior Leader and co-chaired by the Director of Patient Experience, a new position created to increase patient-centered focus. From its inception, the SET has undergone multiple cycles of learning and refined its charter to strengthen the action focus. This led to the creation of five action teams: Standards, Measurement, Recognition, Communication and Innovation. The SET meets monthly to address key issues that affect customer service through these (cultural and operational) action teams. VOC data are aggregated and populated in a dashboard called LINCs for on demand access. Monthly VOC reports are also pushed to each department to provide trends and top issues that tie to in-process metrics for the development of patient experience improvement plans (Figure 3.1-1 2 3). Service improvement plans are cascaded to each hospital's patient experience team and to each department's Top 5 Board patient experience column (Figure 3.1-1 4 5 6). Monthly report outs ensure transparency with results and to determine the effectiveness of the PI plan (Figure 3.1-1 7). We use social media and web-based technology to listen to and address customer concerns in real-time. Our marketing team monitors and receives alerts via email and Smartphone apps when CAMC keywords are used in online venues. Compliments or complaints posted are reviewed at least hourly. When a posting requires follow-up, our marketing team responds by email or phone call to address the feedback. Responses requiring multiple inputs are routed to a 24/7 on-call administrator or to the appropriate individual

Figure 3.1-1 Customer Communication and Response System



like Disney, are used to focus on improvements at each stage of the patient experience and in key work processes. Our listening posts integrate operationally and strategically with our customer communication response process (Figure 3.1-1 11 12). If products or services require change (as described in 3.2a(1)), this is determined through the Analyze phase (Figure 3.1-1 2 3) and is an input to Step 11 and the SPP.

3.1a (2) Potential Patients and Other Customers. We listen to former, potential, competitors' patients and other customers to obtain actionable information on our healthcare services, patient and other customer support and transactions through formal and informal listening posts (Figure 3.1-2). The SET aggregates and analyzes data for improvement with the same approach and deployment process described in 3.1a(1). CAMC also conducts an annual Image and Awareness Survey to determine overall perception of CAMC and other competing area hospitals on a series of attributes including preferences for hospital choice, services and top of mind awareness. Our participation in Hospital Consumer Assessment of Healthcare Providers and Systems as part of the escalation process [3.2b(2)] to validate the follow up. The effectiveness of social media campaigns is evaluated monthly and annually to ensure that information is accessible and messaging approaches are tailored to key customer requirements. Data from rounding and social media are populated in the LINCs dashboard and are part of the aggregated monthly VOC report.

Figure 3.2-3 and Figure 3.1-2 (Types of Patients) show how our listening posts vary across the stages of patients' and other customers' relationships. To seek immediate and actionable feedback from patients and other customers on the quality of healthcare services, support and transactions, we have several listening posts (Figure 3.2-1) that ensure proactive follow-up which includes hourly, leader and executive rounding; social media; post-discharge calls (Cipher Health) and a 24/7 Helpline. A cycle of learning is the innovative use of new technology [6.1a(2)] with mobile rounding application devices (iPad or mobile phone) to capture rounding data at real time including the capability of taking pictures of environmental issues. The mobile rounding application has a built-in escalation process that sends alert notifications via email to ancillary departments such as dietary, housekeeping, maintenance, social services, etc. for immediate follow up and service recovery. All service alerts generate an action item to close the loop and to enable us to improve our key work and support processes [6.1b(3)(4)].

In a cycle of learning, the SET developed a standardized approach to systematically evaluate the effectiveness of each listening post for capturing emerging and changing customer requirements (Figure 3.1-1 8 9 10). This has led us to established a Customer Touchpoint Committee that integrates our VOC methods with our key work processes [preadmission/ admission, treatment, discharge and post discharge (Figure 6.1-1)] ensuring further understanding of key patient and customer requirements at each of these key touchpoints. Learnings from the touchpoint mapping process and from benchmarking with other customer service leaders,

Figure 3.1-2 Patient and Other Customer VOC Listening and Learning Posts

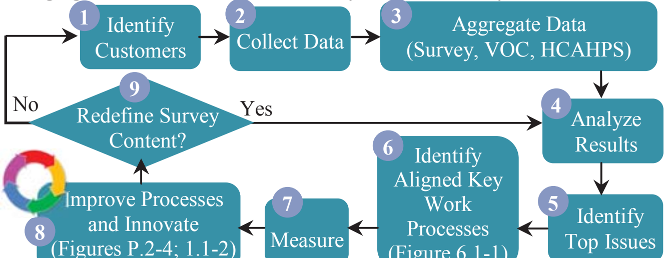
Key Work Processes	Listening & Learning Methods	Segments			Types of Patients				Other Customers		
		IP	OP	ED	Current	Former	Potential	Patients of Competitors	Community	Physicians*	Payors
PD	HCAHPS/CAHPS	x	x			x					
PD	Satisfaction Surveys		x	x		x				x	
A,T,D	Rounding	x	x	x	x		x		x	x	
A,T,D	Helpline	x	x	x	x	x			x		
P,PD	Health Fairs		x			x	x	x	x	x	
A,T,D, PD	Internal Audit	x	x	x	x	x				x	
A.T	Quantros/Complaint	x	x	x	x	x		x		x	
P,PD	PAC						x	x	x	x	x
P,PD	KCCHI					x	x	x	x	x	x
P,PD	Image Awareness Survey				x	x	x	x	x	x	x
PD	Post-Discharge Calls/Cipher Health	x	x			x					
P,A,D,PD,T	CAMC Website, Social Media	x	x	x	x	x	x	x	x	x	x
P,PD	Partners in Health					x	x	x	x	x	x
P,A	Transfer Center	x	x	x	x		x	x		x	x
P,A	Community Liaisons				x	x	x	x	x	x	x
P,A,D,PD,T	Workforce	x	x	x	x	x	x	x			
Additional listening posts shown in Figure 3.2-3 *Physicians are considered WF and are included because they are a key listening post [3.1b(2)]											
P=Preadmission, **A**=Admission, **T**=Treatment, **D**=Discharge, **PD**=Post-Discharge											

(HCAHPS) enables us to benchmark against competitor hospitals (Figures 7.2-2 to 7.2-8).

3.1b Determination of Patient and Other Customer Satisfaction and Engagement

3.1b(1) Satisfaction, Dissatisfaction and Engagement. Patient and other customer satisfaction, dissatisfaction and engagement are systematically determined and differentiated among our patient and other customer groups and market segments (Figure 3.1-3) using qualitative VOC inputs and the survey process. We identify our key customer segments 1 and their requirements (shown in Figure P.1-4) through analysis and aggregation of the qualitative and quantitative data, to validate that we understand their requirements and determine if we are asking the appropriate questions to measure satisfaction with the requirements for each patient segment. Each patient segment has customized survey instruments 2 such as HCAHPS (the primary quantitative assessment for inpatients), outpatient and ED surveys. HCAHPS consists of nationally standardized survey questions as mandated by CMS. This ensures the ability to compare our results both nationally and locally. Information from Quantros, our complaint management system, provides data to track, trend and analyze the number and types of complaints. The proprietary mobile rounding application described in 3.1a(1) enables us to track recurring concerns and identify key factors that impact customer relationships such as process or equipment issues or our use of behavior standards. Dissatisfaction data are aggregated in the LINCs dashboard as part of the monthly pushed VOC reports 3 4. Understanding the top issues 5 that are key drivers for satisfaction/ dissatisfaction and aligning these requirements within our key work processes 6 enables us to capture actionable information in order to exceed their expectations and secure their engagement with us for the long-term. This identification of the root cause and effect relationship between dissatisfaction and process favorably impacted service delivery and enables us to mitigate process issues before they can lead to dissatisfaction. For example, patient complaints of inaccurate meal trays led us to develop a Catering-to-You program. Catering Associates (CA) are assigned to have direct, face to face interaction with patients up to 6-9 times per day which reduced errors with the handling of menu selections. Results from post discharge calls (Cipher Health) are available on demand through the LINCs dashboard that provides comparisons of post discharge surveys to HCAHPS results, trend analysis, control charts and action items. Further analysis of problems identified for each patient experience are aggregated with other VOC to enable a targeted PI approach

Figure 3.1-3 Customer Satisfaction/Dissatisfaction and Engagement Determination System (Survey Process)



and focus on areas with significant statistical correlations in driving favorable change. There are multiple tracking and monitoring systems at all levels of the organization to assess the effectiveness of process improvements 7 such as the Top 5 Board for transparency and accountability of action items and in monthly review of patient experience results by the SET. HCAHPS results are also reviewed at the department level by managers during staff meetings and annual individual performance reviews incorporate goals for customer satisfaction targets and standards of service behaviors. Multiple cycles of learning include refinements to the satisfaction and engagement determination process 8 9. Satisfaction and engagement information are integrated through use of BIG DOT measures as part of the SPP; with key work systems and processes (Figure 6.1-1) to help consistently exceed key customer requirements, and with the WF Learning Development System (Figure 5.2-3) to identify future training needs or refine existing course offerings to reinforce a service excellence culture.

3.1b(2) Satisfaction Relative to Competitors. We obtain information on our patients and other customers' satisfaction relative to our competitors through various comparative data sources (Figure 4.1-2) and our listening posts (Figure 3.1-2). The annual Image and Awareness Survey measures hospitals perceived to be the best on a series of image attributes (i.e. best doctors, best reputation, etc.) and overall perception of CAMC versus competing area hospitals. Physician satisfaction relative to their experience at competitor hospitals is captured through the 12 physician VOC tools shown in the Physician *column* in Figure 3.1-2. Additional information on local competitors is collected through the patient and other customers VOC columns.

We obtain information on patient and other customers' satisfaction relative to other organizations providing similar healthcare services and industry benchmarks through the HCAHPS survey that enables us to compare with top performance among healthcare organizations. As a cycle of learning we have increased the number of industry benchmarks such as QUEST collaboratives; literature research; review of best practices; and participation in regional and national conferences. Comparative satisfaction data serve as inputs into the SPP in establishing strategic objectives, performance and stretch target projections and innovations.

3.2 Customer Engagement

3.2a Service Offerings and Patient and Other Customer Support

3.2a(1) Service Offerings. To determine patient, other customer and market needs and requirements for health care service offerings, we review existing programs and services through VOC data and during the SPP 3 (Figure 2.1-2) for environmental assessment, market assessment and input from national experts. Analysis of data from these sources enables us to determine if patient and other customer requirements are being met or exceeded and if new requirements are needed. The review also identifies whether there are opportunities for new processes or new patient/other customer markets. Service offerings are identified and adapted through the Customer Communication Response System (Figure 3.1-1 8-11) that systematically links to the SPP in order to meet the

requirements and exceed the expectations of our patient and other customer groups and market segments. To ensure that we identify and adapt service offerings to enter new markets, to attract new patients/other customers and to create opportunities to expand relationships with current patients and other customers, our VOC and EA are incorporated by the SPT into the business planning process to determine the viability of new service offerings and resource requirements. Once the business plan is approved, changes are implemented and managed through the DMAIC process for improvement. For example, our SPP analysis showed that WV has the fourth highest cancer-related mortality in the nation and identified the need to build a new Cancer Center at CAMC. This aligns with our CC of *Improving the Health and Economics of Our Community*. Funds for the Cancer Center were raised through the CAMC Foundation in a "Power of Many" campaign which was a significant community partnership.

3.2a(2) Patient and Other Customer Support. Figure 3.2-1 provides the key communication and support mechanisms that enable our patients and other customers to seek information and support, obtain healthcare services and give feedback on our patient and other customer support. The columns show how these mechanisms vary across different patient and other customer groups and market segments. Key support requirements are determined through the SPP (Figure 2.1-3), performance review and analysis process (4.1b), and integrated work system management /Enterprise Model (Figure 6.1-1). We aggregate and analyze data using our Customer Communication and Response System (Figure 3.1-1 ②③) from the wide spectrum of our listening and learning posts. Each listening post owner monitors the VOC for trends ⑥ which are presented to the SET and utilized as input during the SPP EA process ⑪. We ensure deployment of support requirements to our WF and processes through the following integrated methods:

Figure 3.2-1 Patient and Other Customer Support

Key Communication and Support Mechanisms *Also see Figure 3.1-2	Patients/ Families	Community	Physicians	Payors
Seek Information and Assistance				
Direct Contact	x	x	x	x
CAMC Website/Public Reporting Websites/ Social Media (YouTube, Twitter, Facebook)	x	x	x	x
Publications – Vital Signs, CAMC Today	x	x	x	x
Health Fairs and Community Education	x	x		
Obtain Services				
Physician Match	x	x		
Web-based Registration	x	x		
Community Liaisons	x	x	x	x
Transfer Center	x		x	
Telemedicine	x	x		
Partners in Health	x	x	x	x
VOC / Complaints				
Rounding for Outcomes	x			
Administrator On-Call	x		x	x
Letter/Fax/Email/Phone	x	x	x	x
Cipher Health/Discharge Follow-up Calls	x			

Core Values and Behavior Standards. Key support requirements of patients and other customers are integrated into our behavioral standard expectations for every employee. A cycle of learning is the system-wide deployment of the "*My CAMC Blue Book: Our Values and Standards of Behavior for Service Excellence"* which was a need identified from employee focus groups and VOC input. The *Blue Book* defines key actions that operationalize our values and integrate them with a performance management matrix for objective assessments during the annual employee performance review [5.1a(3); 1.1a(1)]. This is fully deployed and reinforces the Service Excellence culture. An internal monthly e-communication sharing approach called *Service Excellence Exchange* highlights key service points for discussion and a *Service Excellence Café* hosted monthly to engage staff in fun activities that promote our standards of behavior.

Training and Orientation. Every new hire employee receives a 2-hour Service Excellence Training program as part of the New Hire Orientation process in which patient and other customer requirements are taught and further reinforced at the department level through competency based orientation and job instructional training (JIT). A cycle of learning has been the implementation of a patient experience skills lab to hardwire hourly rounding processes, consistency in the use of patient whiteboards and AIDET (Acknowledge, Introduce, Duration, Explanation and Thank You) communication framework. Leaders further validate these competencies by rounding side by side with staff to provide coaching.

Service Excellence Playbook – As a cycle of learning to ensure systematic deployment of customer focused processes, we developed a Service Excellence Playbook that contains best practices on key focus areas for organizational improvement based on our VOC results. The SET rolls out a quarterly "key play" that defines the deployment plan and key deliverables. Full deployment is ensured through an accountability form for these key deliverables which are then reported by the system VPs to the SET.

Work System and Work Process Design. Key customer support requirements are integrated into work system and work process requirements [6.1a(1)(2)] as inputs into design, improvement and innovation. This includes the measures for tracking performance (Figure 4.1-3). The SET Innovation Team developed a Patient Experience Pathway to focus on our key work processes (Figure 6.1-2) and managing customer expectations at each stage beginning with a standardized warm welcome process.

3.2a(3) Patient and Other Customer Segmentation. We identify and anticipate current and future patients/other customer groups and market segments during the planning preparation phase of the SPP from ①-⑥ (Figure 2.1-2). Patients of competitors and other potential customer and market segmentation are considered through data from the EA, community needs assessment, and market competitor assessment reviewed annually by the SPT and compared to our current portfolio of programs and services. The gap analysis may result in new programs such as the CAMC Weight Loss Center to address an unmet need in our patient population and the opportunity for growth due to an alarming rate of obesity. The *Keys 4 Healthy Kids* (AOS) program is a new development in our ongoing focus on addressing childhood obesity. Decisions on which patients, other customer groups and market segments to emphasize and pursue for business growth are determined through a review of our VOC listening posts (Figure 3.1-2) and analysis of data and information gathered through our Customer Relationship Management (CRM) software as described in 4.1a(3). This enables us to target potential business opportunities and enhance customer relationships. Strategic planning criteria considerations for selection of patient and other customer groups and entry into market segments include: 1) support for

MVV, alignment with SC, SA, SO, and leveraging our CC; 2) capacity and capability evaluation; 3) consideration of resource allocation to align with the financial and budget process; 4) review of comparative data to determine what our competitors are doing and national healthcare themes; and 5) value creation by balancing patients/other customers and community needs.

3.2b Patients and Other Customer Relationships

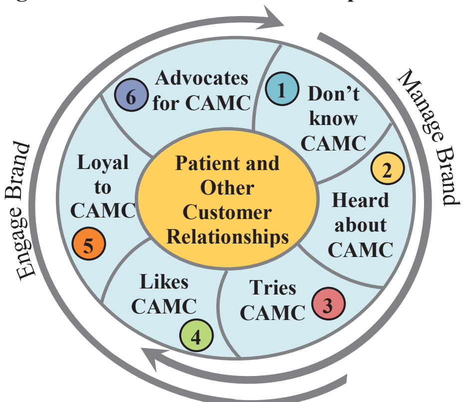
3.2b(1) Relationship Management. Relationships with patients and other customers are systematically built and managed through the Customer Relationship Model (Figure 3.2-2). 1 2 3 focus on acquiring new patients and other customers and to build market share. We manage our brand image by promoting our brand positioning 1 2 and building our brand value 3 4. We enhance our brand image by continually building and leveraging our success-related "levers" 3 4 to strengthen our brand through the strategies outlined in Figure 3.2-3 (Column A) and deployed to all system entities 5 6. 6 1 communicates our brand to sustain our brand equity by monitoring the success of strategic brand targets and marketing campaigns (Figure 7.2-27). 4 5 enables us to retain our patients/other customer relationships, meet their requirements and exceed their expectations in each stage of their relationship with us and 4 5 6 provides us with opportunities to increase their engagement. We have a unified approach in the deployment of our customer relationship strategies beginning with our new hire onboarding processes, Service Excellence training, Service Excellence Playbook, competency validation processes and our *"My CAMC Blue Book"* to reinforce standards of behavior. These approaches are reviewed annually for improvement to ensure that we consistently promote a patient-focused culture [1.1a (3)]. As a cycle of learning, we refined the new orientation process for the medical staff to incorporate service excellence strategies for enhancing communication with patients and families. We leverage social media to manage and enhance our brand, patient and other customer engagement and relationship with our organization by responding to postings that enable us to connect with patients, families and the community; promote services and events and disseminate pertinent health information. Social media enables us to increase our responsiveness to customers and provide additional opportunities for service recovery with real time feedback. We systematically evaluate our social media for value to the audience and broad appeal to help drive improvements in our customer relationship building strategies. In a cycle of learning, we partnered with Krames Staywell for health content to provide a branded resource that features a symptom checker and current health information on thousands of topics. This establishes our social media sites as a trusted resource for online health information. Increased participation by our CAMC-affiliated physicians and other health experts by integrating videos by our own providers further elevates our social media presence and expands our reach to current and potential patients.

Figure 3.2-3 Strategies for Customer Relationship Building at Each Stage

Stage	A Tools/Practices to Move Relationship to the Next Level	B Measure/Figure #	How Level is Determined
1 Don't know CAMC	• Billboards • Newspaper Articles • TV Ads/CRM Software • Social Media* • CAMC Website*	• # of Calls to Community Liaisons (7.1-63) • # of Calls to Transfer Center (AOS) • Social Media (7.2-24) • Image Awareness Survey Results (7.2-1; 7.2-26-7.2-27)	• Increases in each measure
2 Heard about CAMC	• "Stories" of CAMC • HealthFest* • FRC Classes • Trauma Outreach Program • CME for Physicians • ImagineU & Civic Affairs Council • CRM Software	All of the above plus: • Community Benefit Programs and Services • # of Participants in Health Fairs/Screening • # of Participants in Educational Programs • # of CAMC Sponsored Community Events (7.4-17) (full report AOS) • Marketing Campaigns (7.2-25)	• Increases in each measure
3 Tries CAMC	• Efficiency Improvements • Transfer Center* • Central Scheduling for OP • Pre-registration Services • AIDET/Patient Whiteboards	• # of Calls to the Transfer Center (AOS) • Uninsured Patient Conversion (7.1-54) • Average Time to Next Available Appointment (7.1-52–7.1-53) • Operational Efficiency Measures (7.1b)	• Volume growth • Increase in patient satisfaction
4 Likes CAMC	• Hourly and Leadership Rounding* • Service Recovery (Take the HEART) • CPOE • Service Plus • Multi-disciplinary Rounds • Discharge Information • Discharge Call-backs/Cipher Health*	• Satisfaction Survey (7.2-2–7.2-19) • Market Share (7.5-19–7.5-31) • Best Attributes (7.2-1; 7.2-26–7.2-27) • WF Engagement (7.3-13–7.3-17) • Resident Overall Perception (7.3-24-7.3-25)	• Increases in each measure
5 Loyal to CAMC	• Series Appointments • Specialty Clinics • Center of Excellence • "Blue Distinction" Services	• "Definitely Recommend" (7.2-20-7.2-23) • Physician Survey (7.3-26-7.3-27) • Top Choice Hospital (7.2-1)	• Increases in each measure
6 Advocates for CAMC	• Donors/Fundraising • Foundation Gala • Roundtables/Presentations • Professional Recognition • Support to Care for Patients	• Community Benefit Programs and Services (7.4-17) • Donors (7.5-16) • # Employees 30+ Years of Service (AOS) • Awards and Recognition (7.4-15)	• Increases in each measure

*Also Listening Posts (Figure 3.1-2)

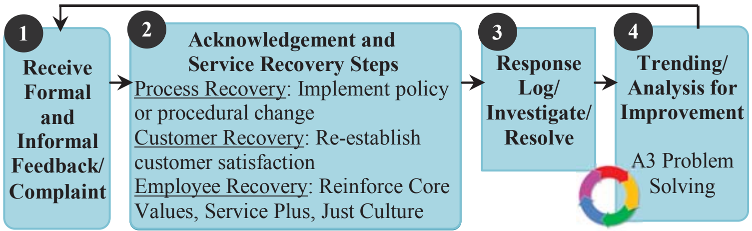
Figure 3.2-2 Customer Relationship Model



3.2b(2) Complaint Management. Patients and other customer complaints are systematically managed through a complaint management process (Figure 3.2-4). Informal and formal complaints are received 1 through a variety of mechanisms including letters, hotline calls and emails. Our internal complaint management system (Quantros) enables us to track open complaints and to document actions for resolution. We ensure that complaints are resolved promptly

and effectively ❷ through a proactive approach of identifying potential issues and complaints through our daily and hourly rounding that allows us to anticipate potential dissatisfiers that may become complaints and to effectively manage complaints at the bedside. Every employee is trained about service recovery steps and they are empowered to resolve complaints in real time ❸. We recover our patients' and other customers' confidence and enhance their satisfaction and engagement through our service recovery process known as "Use Your H.E.A.R.T.": **H**-Hear them; **E**-Empathize; **A**- Apologize; **R**-Resolve promptly and **T**-Thank them. We make every possible effort to resolve issues on the spot. If this is not possible, we utilize a systematic complaint escalation process (AOS) that defines individual levels of responsibility to ensure that we fully respond to the patient and other customer concerns. A recent cycle of learning enhanced our service recovery process by empowering charge nurses to provide patients and their families with drink coupons, meal tickets and parking passes. Trending and analysis ❹ of complaint data to identify areas for improvement is included in the aggregated VOC reports pushed monthly to department managers and leaders and presented annually to the BOT Committee on Quality for organization-wide focus on improvement. Each department's Top 5 Board utilizes the A3 problem solving approach (Figure P.2-5) in order to avoid similar complaints in the future and address critical factors that affect customer satisfaction and engagement.

Figure 3.2-4 Complaint Management Process



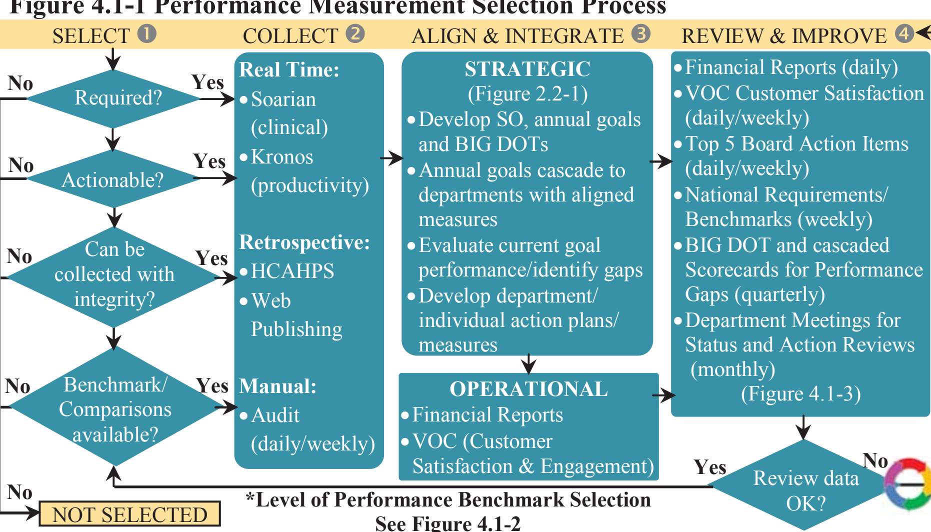
Measurement, Analysis, and Knowledge Management

4.1 Measurement, Analysis, and Improvement of Organizational Performance. Our closed-loop process for measuring, analyzing and improving organizational performance is demonstrated by Figure 2.1-1. This closed-loop cycle ensures the alignment of the strategic plan with our performance measures, performance tracking, and improvement of organizational performance.

4.1a Performance Measurement

4.1a(1) Performance Measures. The Performance Measurement Selection Process (Figure 4.1-1) shows how we systematically select, collect, align and integrate data and information for tracking daily operations and overall organizational performance including progress on achieving strategic objectives, annual goals and action plans. The

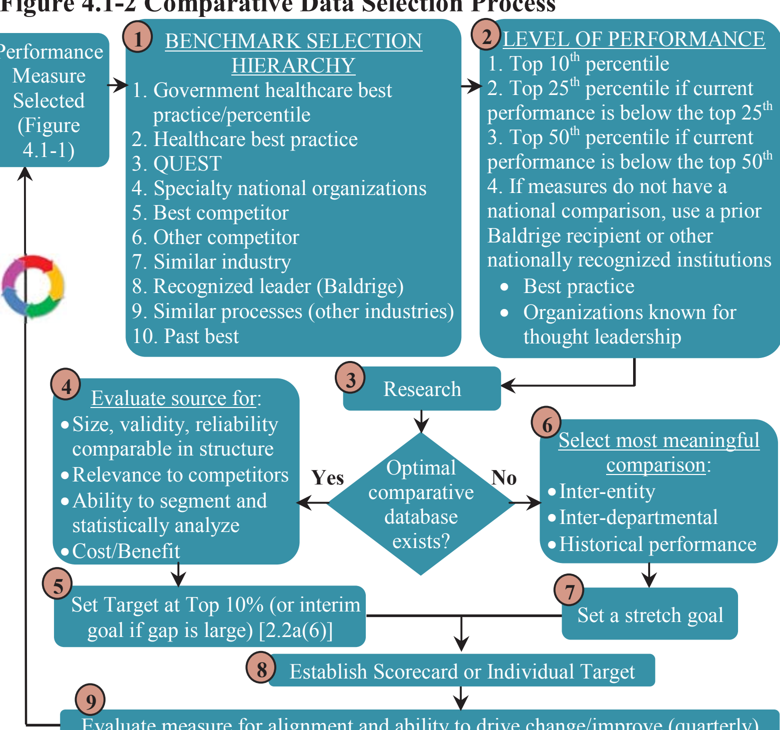
Figure 4.1-1 Performance Measurement Selection Process



performance measures are selected during the SPP (Figure 2.1-2 ⑦). The criteria for **selection** of data at all levels of the organization are shown in Figure 4.1-1 ❶. Selected measures are used to populate the online goal reporting system and department scorecards. Data are **collected** ❷ through real time electronic systems, retrospectively or manually by daily and weekly audits. Data are **aligned and integrated** ❸ at the strategic and operational levels and are deployed through our online scorecard system, Top 5 Boards (visual data display throughout CAMCHS), financial, and VOC reports that enable us to evaluate current goal performance, identify gaps and develop action plans for improvement. Key organizational performance measures including ST and LT financial measures are shown in the SPP SO, Annual Goals, Action Plans and BIG DOT measures (Figure 2.1-6). The frequency of tracking key measures is described in ❹ **review and improve** and shown in Figure 4.1-3. We cascade aligned performance measures to departments and integrate them across work systems to identify if PI or breakthrough innovation is needed. The performance measurement selection process is reviewed annually during the SPP to review process performance and to validate appropriateness of measures. A recent cycle of learning is the use of Top 5 Boards to drive improvement.

4.1a(2) Comparative Data. Key comparative data and information are selected and effectively used through a systematic process (Figure 4.1-2) to support operational decision-making (for strategic use of comparisons see Category 2). Once performance measures are selected, the benchmark selection hierarchy ① is used to identify available benchmarks. We research multiple sources ③ of information to determine if optimal comparative data are available and to evaluate the source ④ based on several criteria such as size, validity and reliability. Our performance is compared to the benchmark best practice ② and our level of performance is identified. The selected comparison ⑥ is used for setting targets ⑤ and stretch goals ⑦ that are included in scorecards and Top 5 Boards ⑧. Comparative measures are evaluated quarterly for alignment and ability to drive change ⑨. This process is reviewed annually during the SPP. Through many

Figure 4.1-2 Comparative Data Selection Process



cycles of learning we have increased organizational understanding about the importance of benchmarks.

4.1a(3) Patient and Other Customer Data. To select and effectively use VOC and market data and information including aggregated data on complaints to build a more patient-focused culture, our VOC listening posts (Figure 3.1-2) are a key input to understand (including the aggregation of complaints) and perform the analysis of customer needs and the impact on future products and services. Customer Relationship Management (CRM) software supports our understanding of a potential customer with specific healthcare needs. Additionally this data helps us to target potential patients through stages 1 and 2 of the CRM (Figure 3.2-3). We use this approach for our Breast Cancer Prevention campaign by sending out reminder cards on individuals' birthdays. The process used to determine the impact is shown in our Customer Communication and Response System (Figure 3.1-1), which is linked to the organizational direction provided through the SPP (Figure 2.1-2 3 4). This is systematically used to make and support operational and strategic decisions. As described in 3.1a(1), VOC data is aggregated and populated in a dashboard called LINCs for on demand access. Our use of a mobile rounding application ensures immediate and actionable feedback as well as opportunities for service recovery for complaints. Monthly pushed reports to each department provide information on top issues and trends that tie to in-process metrics which enable us to address performance gaps and execute action plans for improvement. We track and monitor (Figure 3.1-1 6) patient satisfaction targets weekly. Hourly rounding and weekly leadership rounding validate the consistent practice of our patient-focused culture. As a VOC cycle of learning, we established a Readmission Steering Committee focused on helping patients understand discharge instructions/ medications to manage their care and to reduce readmissions.

Operational decisions are augmented through the use of data and information gathered through social media for quick understanding and response to build and manage our patient and other customer relationships [3.1a(1)]. Continuous feedback from social media provides opportunities to increase our customer engagement. Social media data are monitored and responded to real time and are aggregated and analyzed in the LINCs dashboard as in-process metrics for PI.

4.1a(4) Measurement Agility. We ensure that our performance measurement system can respond to rapid or unexpected organizational or external changes through: 1) our annual SPP; 2) ongoing performance analysis and review process (Figure 4.1-3); 3) assessment of performance gaps (Figure 2.1-5); and 4) pillar reviews. Any of these reviews can initiate a change in the measurements used. These processes monitor external changes through the continuous review (EA) described in Figure 2.1-3 as well as ongoing performance across all strategic pillars daily, weekly, monthly and quarterly to identify/research unfavorable trends or the immediate need to develop action plans for performance gaps (2.2b). Each pillar owner reviews a wide range of data sources including best practice and industry knowledge to stay current with issues that may potentially impact our organizational strategy. Measures are updated through monthly review of individual scorecard progress by the CEO, COO, entity Presidents, VPs and AAs with direct reports; quarterly review by the BOT and EC on goal progress relative to system BIG DOT measures and ongoing tracking of action plans (Figure 2.1-2 14) for course corrections based on shifts in market conditions.

4.1b Performance Analysis and Review. Figure 4.1-3 shows our systematic organizational performance and capabilities review process, including our BIG DOTs (key organizational performance measures), comparative data [embedded in all cascaded measures as described in 4.1a(2)] and customer data (clinical quality, patient satisfaction, social media). Figure 4.1-3 also includes the analyses that we perform at each level and in each timeframe to support these reviews and ensure that conclusions are valid. This Figure shows how the CAMCHS and SL use these reviews to assess organizational success, competitive performance, financial health and progress on achieving strategic objectives, annual goals and action plans. Organizational performance reviews occur by SL, clinical areas, nursing, physicians, support services, partners and the BOT. The frequency of our review process (Figure 4.1-3) and our built-in agility to quickly deploy action plans as described in 2.2b, enable us to respond rapidly to changing needs and challenges in our operating environment including any need for transformational change in our organizational structure and work systems. Executive Council conducts quarterly reviews of CAMCHS performance and progress on SO, annual goals and action plans relative to system entities, corporate and hospital measures. The Board, as part of its accountability for strategic plans [1.2a(1)], reviews organizational performance of annual goals and the BIG DOT Scorecard quarterly.

Figure 4.1-3 Organizational Performance and Capabilities Review (Sample - Full Table AOS)

WHEN	WHO						ANALYSIS TO ENSURE VALID CONCLUSIONS	DECISIONS MADE
DAILY	**CA**	**N/MS**	**SS**	**SL**	**P**	**BOT**	• Variance (Daily vs. Budget) • Trending • Review of Quantros • Social Media monitored by Marketing and issues communicated • Patient compliments and complaints • Work process in process measures • Support process requirements	• Daily operational changes • Service recovery • Safety/Regulatory • Resource Pool/Call-offs • Physician notification • Patient flow • Performance Improvement
Safety (Patient/WF)	x	x	x		x			
Census/Volume/Staffing	x	x	x	x	x			
Admissions/Referrals	x	x	x		x			
Productivity	x	x	x		x			
Social Media	x	x	x	x	x			
Satisfaction/Quality	x	x						
Top 5 Board	x	x	x		x			
WEEKLY							• Trending/Variances • Patient complaint themes reviewed • Process change • Root cause analysis	• Safety/Regulatory • Staffing/Recruitment • Recognition • Reinforce Action Plans • Service recovery • Operational changes
Rounding	x	x		x	x			
Productivity/Financials	x	x	x	x	x			
Patient Satisfaction	x	x	x	x	x			
PI Projects (SPL, A3)	x	x	x	x	x			
MONTHLY							• Social media campaigns • Budget Target vs. Actual • Statistical comparison • Action Plan evaluation • All Top 5 boards and scorecards	• Modify social media campaigns • Modify Action Plans for Top 5 Boards • Resource allocation/New teams • Budget changes • Business development
Clinical Outcomes	x	x		x				
Rounding	x	x	x	x	x			
Scorecards	x	x	x	x	x			
Financial Performance	x	x	x	x	x			
TCT Project Status				x				
QUARTERLY							• Budget Target vs. Actual • Statistical comparison • Work/support process in-process & outcomes • Action Plan evaluation • Aggregation of patient experience data • Identification of current performance gaps and gaps for projected year end performance	Address performance gaps: • Safety/Regulatory • Resource allocation/changes • Operational changes • Modify Action Plans • Opportunities for PI/Innovation
Patient Satisfaction	x	x	x	x	x	x		
BIG DOTs/Goals/Action Plans/Cascaded Measures/Financials	x	x	x	x	x	x		
Social Media Trending		x		x				
Work Process	x	x	x	x	x			
ANNUAL/BIANNUAL							• Social media campaigns • Budget Target vs. Actual • Gaps in performance • Action Plan evaluation and Scorecard review • Year end results compared to annual projected performance compared to benchmarks	• Messaging approaches for social media tailored to key customer requirements • Safety/Regulatory • Recognition • Action Plan modification/New Plans • Opportunities for PI/ innovation
Workforce Performance Reviews	x	x	x	x	x	x		
Employee Satisfaction	x	x	x	x	x	x		
Physician Satisfaction	x	x		x	x	x		
Patient Safety Culture	x	x	x	x	x	x		
Strategic Plan achievement of: • BIG DOTs • Annual Goals • Action Plans • Cascaded Measures	x	x	x	x	x	x	• Impact of year end results on SPP accomplishment • Gap analysis: current performance versus year end actual; differences between projections of our future performance and BIG DOT performance targets	• Organizational success and success compared to competitor performance • Strategic Opportunity and Innovation • Changes in structure, KWS, KWP, support processes (Figure 6.1-1) • SPP and Organizational Review Processes
CONTINUOUS								
Environmental Analysis				x	x	x	• Shifts in technology, market, services, competition, economy, regulatory environment	• Change in SO, Annual Goals, Action Plans to adapt to shifts in market conditions; Shift in priority

Information Flow: FOCUS ON ACTION BASED ON SIZE OF VARIANCE, TREND, RISK — 6 Figure 2.1-2

Legend: **CA** Clinical Areas, **N/MS** Clinical Nursing and Medical Staff, **SS** Support Services, **SL** Senior Leaders, **P** Partners, **BOT** Board

An example of the need for transformational change was the implementation of the TCT process. Based on findings from our organizational performance and capability review process, we identified a strategic opportunity that resulted in an innovative management and care delivery model. A cycle of learning for measurement agility is the deployment of the TOP 5 Board to all CAMCHS departments to enhance department performance analysis, improvement and review capabilities.

4.1c Performance Improvement

4.1c (1) Best-Practices. Our systematic process for sharing best practices in the organization occurs in three phases: Phase 1-*Identification*; Phase 2-*Spread*; and Phase 3-*Sustain*. Each phase has undergone multiple cycles of learning. For Phase 1, we identify organizational units and operations that are high performing through the process of performance review findings (Figures 2.1-5 and 4.1-3). Data retrieval and analysis from multiple internal and external sources is used to obtain feedback on our performance including key inputs from our rounding, audits, QA/QI and benchmarking. At these review findings, best practices that contribute to high performance are identified for sharing through multiple transfer mechanisms (Figure 4.2-1) for Phase 2 (*Spread*). We use department huddles, Six Sigma Report Outs, Top 5 Boards, Nursing Councils and PI plans to spread best practices throughout CAMCHS. A cycle of learning is the use of SPL and JIT learning tools as a standardized process to deploy information and ensure repeatable results with validation of competencies. We use our 30 intra- and cross-functional committees to share across their span of control with oversight by the Quality Management Structure. Phase 3 (*Sustain*) is built upon our PI culture and learning environment to promote EBC and thought leadership. Improvement and innovation successes are celebrated through Quality Awards. A cycle of learning is the expansion of our organizational plan for spreading best practices with a standardized definition of different levels of spread; establishment of a spread team; use of the change

acceleration model and prioritization matrix to enhance our measurement of the value of best practices; and integration of best practices with our organizational learning.

4.1c(2) Future Performance. Our process to project our future performance occurs systematically during the annual SPP by using 15 projection methods (e.g., identifying best practices, key comparative and competitive data) for each of our BIG DOTs as described in 2.2a(6) and performance reviews in Figure 4.1-3. Each review has analysis performed and decisions made. Our focus is on moving all BIG DOTs to top decile performance if that benchmark is available; otherwise continuous improvement for all measures compared to established benchmark and level of performance described in Figure 4.1-2. Our process for reconciling any differences between these projections of future performance and performance projections developed for our key action plans is through the SPP (Figure 2.1-2 4) annually by the pillar owners as described in 2.1a(1) to identify the following year SO, annual goals/action plans and BIG DOTs.

4.1c(3) Continuous Improvement and Innovation. We use findings from our performance reviews (Figure 4.1-3) to develop priorities for continuous improvement and opportunities for innovation (center circle Figure 2.1-1) by using our Innovation System (Figure 1.1-2) and Innovation Process (Figure 2.1-5). Through review of our measures and goals (Figure 2.1-5 4), we determine if a gap exists 5. We make the determination if the gap can be closed with continuous improvement 7a or if innovation 7b is required. The decision to innovate is based on specific decision criteria including: 1) is 30% or greater improvement needed, or 2) is a new level of performance required.

We deploy PI priorities and opportunities to work groups and functional-level operations throughout the organization through the goal cascade process (Figure 2.2-1 and described in 2.2a) and through the need for action plan modification as described in 2.2b if they arise after annual goals and action plans have been established for the year.

As described in 2.2a(2), priorities and opportunities are also deployed to our key suppliers/partners through the same cascade process to ensure organizational alignment. The BOT Quality Committee provides oversight for prioritization of PI and innovation opportunities. For example, during our continuous review process in Figure 4.1-3 we identified a gap in our performance related to our communication of the *Important Message from Medicare* related to a payor VOC requirement. Our performance was at 17% and it was impacting our progress toward Goals #2 and #7 in Figure 2.1-6. Through a multidisciplinary team we improved the outcome to 88% and continue improvement cycles to achieve our goal of 100%.

As a cycle of learning in our PI and innovation processes, we identified the importance of process mapping to help us better understand current process performance and areas for improvement. As a result we have a goal for 2015 to value stream map key patient areas (Goal #8, Figure 2.1-6).

4.2 Knowledge Management, Information, and Information Technology

4.2a Organizational Knowledge. Our processes to manage our organizational knowledge assets, information, and information technology infrastructure, described in Figures 4.2-1, 4.2-2 and 4.2-3, are designed to improve our organizational efficiency and effectiveness, and to stimulate innovation.

4.2a(1) Knowledge Management. Figure 4.2-1 details the process that we use to systematically manage organizational knowledge. Our focus areas include 1 WF, patients, suppliers, partners, collaborators and other customers. For each of these groups we have specific techniques to collect and correlate data to build new knowledge 2, transfer knowledge to those who can use it 3, and force (ensure that we use) the knowledge 4. For each stakeholder group we have a way to evaluate the sharing and measures 5 that are used to track and improve the use and impact of knowledge

Figure 4.2-1 Organizational Knowledge Management (Full Table AOS)

Knowledge Used By 1	How Knowledge is Collected/Correlated 2	Transfer Mechanisms/ Sharing Forums 3	Forced Use of Knowledge 4	Evaluation/Measures 5
Workforce	•Rounding/Forums •Email/Surveys •Top 5 Boards •Organization Performance and Capability Reviews •Staff Meetings	•Best Practice Sharing •In-services/Meetings/Huddles •EduTrack/SPL/JIT/Skills Lab •Simulation Center •Evidence Based Order Sets •Council Structure •Collaborative Practice	•Performance Reviews •Annual Competencies •Action Plans •PI Teams/TCT •Designing health care services	•Scorecard 7.4-27 •Regulatory/Compliance Audits 7.4-11; 7.4-14 •Engagement Survey 7.3-14 •Performance Reviews 7.3-29 •Survey Results 7.3-30-7.3-31
Patients	•Rounding •Shift to Shift Handoffs •IPOC •Cipher Health	•White Boards/IPOC/Survey •IP/OP Visits •Print, Radio, TV, Education on Demand •Rounding, CEN	•Shift to Shift Handoffs •Teach-back •Discharge Instructions	•Scorecard/Quality Indicators 7.2-2-7.2-18 •Satisfaction/Engagement Survey 7.2-20-7.2-27 •Market Share 7.5-19-7.5-31 •Cipher Health 7.2-9
Suppliers, Partners	•Contracts •Meetings •Quarterly Operational Reviews	•Communication Methods •Community Forum •Vendor Credentialing •Conferences	•Contracts •Programs/ Innovations	•Contract Performance 7.1-67-7.1-70; 7.1-73 •Length of Relationship 7.1-71-7.1-72
Other Customers	•Regulatory Agencies •Referring MS •KCCHI Survey	•Communication Methods •Marketing/Meetings/Outreach •Transfer Center	•Outreach Programs •Facility Changes •New Program Development	•Market Awareness Measures 7.2-26 •Referral Volumes 7.5-24
Sharing and Implementing Best Practices 6	•Shared Governance •QIC/PIC •Communication Methods • Evidence-Based Medicine	•RCAs; Collaborative Practice •Safety Alerts, Huddles, Email •Education (SPL, JIT, EduTrack), Nursing Councils TCT Manager Meetings	•Designing health care services, Key Work Processes and Enabling Systems •TCT	•Process Outcomes 7.1-52-7.1-64 •Adoption of Best Practices 7.1-10-7.1-11 •EduTrack Training (AOS) •PIC Scorecards (AOS)
Use in Innovation and Strategic Planning 7	•EA •Internal And External Data Review •Pillar Review •Strategic Opportunities	•SPP/Individual Performance Planner •Top 5 Board •Best Practice Sharing •Goal Cascade	•Goals/Action Plans •Scorecards •Designing services •Process Management •Pillar Reviews	•Scorecard/Goal Evaluations 7.4-27 •Individual Performance Planners 7.3-29

management. We also use specific tools, techniques and forums to share and implement best practices (6). We systematically assemble and transfer relevant knowledge for use in innovation and in the SPP (7) through the EA (Figure 2.1-3) and reviews in Figure 4.1-3.

4.2a(2) Organizational Learning. We utilize our knowledge and resources to embed learning in the way our organization operates through our innovation forcing functions, culture drivers and established processes and measures at the organizational, SL, middle management and WF levels as detailed in Figure 2.1-4. This promotes learning as part of daily work, problem solving and best practice sharing. When a process is improved and innovated, it becomes part of our work systems and work processes (Figure 6.1-1) which are managed through our DMAIC process. We continue to embed and spread learning through face to face meetings, councils, Single Point Lessons (SPL) and improvement teams as described in knowledge transfer mechanisms in Figure 4.2-1.

4.2b Data, Information, and Information Technology

4.2b(1) Data and Information Quality. Our process to verify and ensure the quality of organizational data and information is through data quality and integrity checks at several levels of our information technology systems (Figure 4.2-2). At the *base level*, we utilize equipment and infrastructure systems that incorporate device-level, file-level, and database level integrity checks, as well as hardware integrity checks. At the *application program level*, we utilize database integrity checks, edits of input and interfaced data, and end-user data validation procedures. At the *application system level,* we conduct component and integrated testing, and employ acceptance criteria which must be met before systems are placed into production. We also produce “balancing reports” to allow our end-users to help detect errors in data entry or interfaces. At an operational level, we continuously monitor the “health” of our IT systems, by comparing actual to expected outputs for gaps or errors, and by monitoring for error messages indicating that follow-up is needed. Rigorous program/project management processes and methods are employed to manage the entire process.

Figure 4.2-2 describes our systematic processes to manage electronic and other data and information to ensure their accuracy and validity, integrity and reliability, and currency. The IS team systematically validates accuracy of each

Figure 4.2-2 Data and Information Quality (Full Table AOS)

Properties	Data	Information
Accuracy and Validity	•Testing and validation •Sums/redundancy tests •Drop down/Standard forms	• SPL/JIT • Legibility – CPOE • Automated med. delivery system
Integrity	•Business continuity •Anti-virus •Security patches	• Automated alerts • Auditing and rules • Evidence Based Care
Reliability	•Database backups •Disaster recovery plans	• Tracking uptime vs. downtime • % workstations > 5 years
Currency	•High speed network •Remote access/Wireless •Network monitoring	• Applications on Smartphone • Workflow monitoring • Physician immediate access
Security and Access	•Access based on job role •Login, password •Audit logging	• External audits • HIPAA audits • Identity theft protection
Confidentiality	•System-level access rights assignments	• HIPAA compliance • Confidentiality of patient records

electronic system prior to implementation and conducts detailed transaction tracing, annual process reviews, and audits to manage these key properties. Cycles of learning (based on analysis and what has been determined to be intelligent risks) include investments in new technology, upgrades and applications on smartphones to provide physicians with immediate access to patient information. Employee orientation incorporates data and information training, policies and procedures. We also build these key properties into the design of services [6.1a(2)] such as automated alerts and hard stops to reduce medication errors.

4.2b(2) Data and Information Security. Our process to ensure the security of sensitive or privileged data and information is a carefully managed and constantly reviewed process that incorporates the use of best practices such as secure texting and email, secure VPNs, unique account credentials, and computer hardening with deployment of software such as anti-virus and security patches (Figure 4.2-2). All WF are required to complete HIPAA Privacy and Security training, and as a cycle of learning, an interactive security awareness course was added in 2015. We manage electronic and other data and information to ensure confidentiality and only appropriate access through the use of role based access models, unique credentials, two-factor authentication, system user audits, and information risk assessments following the HIPAA security rule. Our Information Security Officer oversees the cybersecurity of our information systems by enhancing our defense system to address emerging threats. This systematic process includes: 1) investigation and remediation of any anomalies on a daily basis; 2) upgrading systems with supported versions of the operation system; 3) removing administrative privileges on common desktop accounts; and 4) hardening devices with Microsoft’s enhanced mitigation toolkit. Best practices are identified and guide selection and implementation of defense tactics such as layered security and security policy.

4.2b(3) Data and Information Availability. We ensure the availability of organizational data and information through the processes outlined in Figure 4.2-3 which describe how we make data and information available in a user friendly format and timely manner to our WF, suppliers, partners, collaborators, patients and other customers. Data and information needs are validated through two-way communication with each stakeholder group (Figure 1.1-3). IS rounds monthly to obtain feedback and address issues. Any stakeholder may also request data/information through standing meetings and via a defined process (AOS). The level of access provided to stakeholder groups is specifically targeted to their respective roles and needs. As a cycle of learning, we are moving toward a continuum of real time information availability. For example, we utilize the Soarian Clinicals Workflow and Rules Engine to identify critical changes in a patient’s condition.

Our website integrates with our customer relationship building processes (Figure 3.2-2) through a mapping application that enables patients or visitors to learn about our hospitals and map their way to and within any of our facilities.

4.2b(4) Hardware and Software Properties. We ensure that hardware and software are reliable, secure and user-friendly

Figure 4.2-3 Data and Information Availability (Full Table AOS)

Users	How Do We Determine Requirements?	Type of Data/Information	Availability
Workforce	•Scorecards •Regulatory Compliance •Measures of Engagement	•HR/Payroll/Benefits •Performance Dashboards •Soarian, EMR •CME/EduTrack/SPL	•Employee Self Serve •Email/Mobile Devices/Paging •CAMnet (intranet)
Suppliers & Partners	•Contract Performance	•Electronic Transactions •News and Information •Programs and Innovations	•Reptrax Vendor Credentialing •Conferences
Community & Collaborators	•Returns/ Readmissions •Improved population health	•Physicians, Specialties •Disease/Wellness Information •Community Health Partnerships	•Print, Radio, TV •Focus Groups •Health Information Center
Patients	•Quality Indicators •Scorecard •Satisfaction Surveys	•Electronic Health Record •Appt/Prescription Requests •Messages to/from Physicians	•IP/OP visits •Website/Email •Radio, News, TV •Patient Portal
Other Customers	•Market Awareness Measures	•HIS, EMR •Disease Registry •Lab and Radiology Results •News and Information	•camc.org • Remote Access •Email/Mobile Devices/Paging

through a systematic 11-step process (AOS) that follows the DMAIC cycle: **Define** involves defining key user requirements. **Measure** involves a cross-functional design team comprised of IS, physicians, nursing, Six Sigma and other stakeholders to customize the system based on reliability, error-proofing and user-friendliness. **Analyze/ Improve** integrates system testing, training and validation of key user needs for modification based on feedback. Ongoing system alerts and Help Desk availability 24/7 support monitoring of performance. **Control** evaluates performance gaps and tracks progress through reports and scorecards. The process is reviewed annually and as a cycle of learning, we broadened the selection and adoption of new technology to incorporate stakeholder feedback. For example, based on parents' feedback, we purchased Ambient Technology at WCH so a child can watch cartoons projected in the machine during a CT scan.

4.2b(5) Emergency Availability. In the event of an emergency, we ensure the hardware and software systems and data and information continue to be secure and available to effectively serve patients, other customers, and organizational needs through redundant network infrastructure, server clustering, generator and UPS power backup, data backups and replication offsite to ensure continuous systems availability at or above the historical level of 99.95%. We are building a second (peer) data center with a regional co-location services company. Beyond backing up our system as a common procedure, we are making a real-time copy of critical clinical information to a back-up facility to further reduce the risk of lost information. Our IT disaster recovery program is part of our emergency response plan [6.2c(2)]. The impact of outages is mitigated though extensive downtime procedures and an alternate critical delivery IS that is a near real-time cache of pertinent business and clinical information placed at each nursing unit and other key locations. Our wireless laptops fall under the same disaster protection class as our desktop computers. Post-disaster reviews, root cause analysis and annual process reviews enable us to improve our readiness for potential events. For example, in the aftermath of a storm power outage that placed WV in a state of emergency, there was an internet service disruption with no impact to our system capabilities.

Workforce

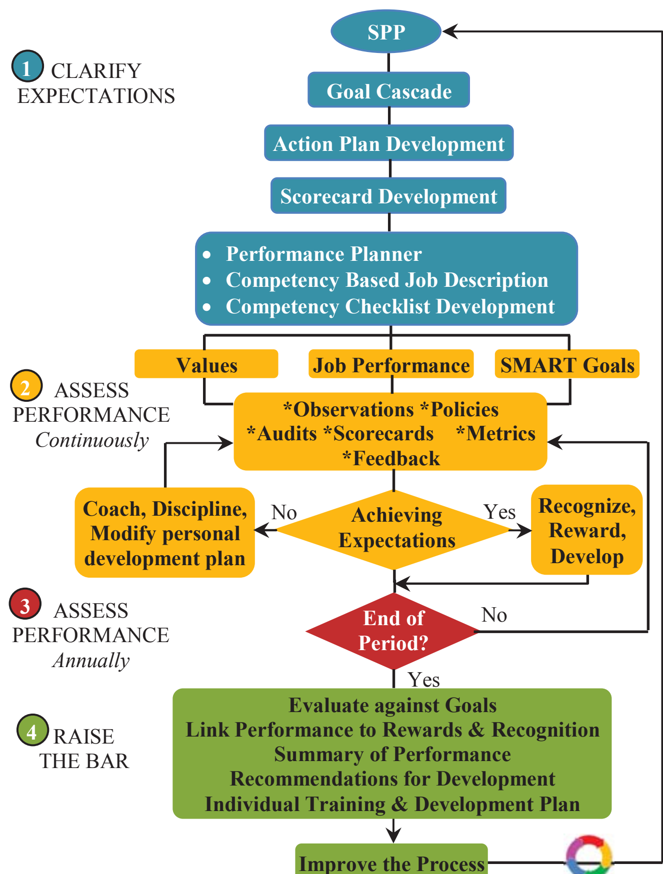
5.1 Workforce Environment. One of our hospital vice-presidents began his journey with CAMC 42 years ago as a snack bar supervisor. One of our associate administrators began as a new graduate nurse 24 years ago. Both, through educational opportunities and experiences afforded by CAMCHS, have forged impressive progressive careers. This evidences our "growing our own" strategic advantage and fosters our belief that our workforce (WF) is the heart and soul of CAMC. We build an effective and supportive WF environment by hiring the best people and creating an aligned culture of accountability and improvement.

5.1a Workforce Capability and Capacity

5.1a(1) Capability and Capacity. We assess WF capability and capacity needs, including staffing levels, through a systematic process (AOS) that is an input to the SPP (Figure 2.1-2 ③④⑤⑥), where we identify both ST and LT opportunities or needed changes to programs, services, facilities, technology, regulatory requirements and volume indicators.

A HR WF Planning Team manages the annual process for identifying WF capability and capacity needs (both current and future) and develops the WF plans to address these needs. **Step 1:** HR WF Planning Team meets with Senior Leaders (SL) to identify hospital specific WF needs based on the ST

Figure 5.1-1 Performance Management System



and LT factors identified during the system SPP. **Step 2:** SL are asked to use four decision criteria for WF planning needs (Strategic, Key, Core, Transitional) (Figure 5.1-2). **Step 3:** WF team conducts an assessment of the current and future environment looking at WF related metrics (i.e. turnover, graduation rates, education programs available, competencies and age of existing staff), and explores options based on the planning categories. **Step 4:** Team develops WF plans to meet both ST and LT needs. WF plans are monitored daily, weekly and continuously as part of our Organizational Performance and Capability Review (Figure 4.1-3) and are revised according to changes in WF or WF needs.

The process output becomes an input to the SPP and the Environmental Analysis to increase our agility in responding to varying demands and continuous improvement of our planning process. WF capability, including skills, competencies and certifications, are assessed continuously using the PMS (Figure 5.1-1 2 3 4) and the Workforce Learning and Development System (WLDS) (Figure 5.2-3). Assessment begins with competency-based job descriptions developed for all positions. These are reviewed and validated annually by department managers who utilize them to assess and validate job competencies for their respective employees. This ensures employees possess the knowledge, skills, and abilities (KSA) as identified for their essential duties, are able to perform the tasks or activities for the position, and maintain required certifications.

To meet future capability and capacity needs, we have a "grow our own" process (P.1) where talented internal candidates are identified, trained or educated, and mentored to move into positions to address our strategic challenge of recruiting and retaining competent staff.

Current and future physician capacity and capability needs are assessed through analysis of the ratio of physicians currently working in our primary and secondary service areas, including age and specialty, in combination with proposed changes to our service offerings. The analysis is used to formulate the annual Medical Staff Development Plan used to develop recruitment priorities.

As a cycle of learning, an ad hoc committee of Board Members, Medical Staff and SL worked with HR in 2013 to identify and make recommendations to the SPT regarding WF capability and capacity changes needed to address new system of care requirements created by health care reform.

Figure 5.1-2 Workforce Planning Categories

Strategic	Critical to driving LT competitive advantage; primary focus is on strategic objectives and LT goals	Capability
Key	Critical to establishing and driving current year goals and action plans; requires differentiated skills that are not easily acquired	Capability
Core	Critical to day-to-day operations; supports work done by key or strategic roles; skill does not differentiate us in the marketplace	Capacity
Transitional	Role is or will be obsolete in the next 2 years	Capacity

5.1a(2) New Workforce Members. We utilize a fully deployed 16-step systematic process (AOS) to recruit, hire and place new members of our WF. **Recruit (Steps 1-4):** Needed positions are identified, approved and posted. Internal candidates are given priority for open positions. This supports our "grow our own" philosophy to ensure a sustainable organization. **Steps 5-9:** Internal applicants are screened using behavioral-based interviewing techniques and a candidate rating system. These methods assess the candidate's fit with the team and job competencies including our patient and customer service focus. The best internal candidate is offered the position and placed. **Hire (Steps 10-15):** If there are no qualified internal candidates, external candidates are recruited, identified, screened and interviewed using the process described for internal applicants. Upon selection and acceptance, candidates receive a pre-employment physical, drug screen, and an extensive background check including criminal history and credentialing, if necessary, for the position. **Step 16:** If no internal or external candidate is selected, we evaluate other recruitment possibilities such as broadening our recruitment search regionally or nationally.

Place and Retain begins with screening to ensure a "right fit" to our values and organizational culture. As a cycle of learning, all external candidates are required to complete a pre-employment behavioral assessment which evaluates candidates in terms of customer service, retention and job performance. The focus on organizational culture continues through our comprehensive onboarding process that addresses key requirements of WF engagement (Figure P.1-4) and individual training and development needs (Figure 5.1-1 4). We utilize a competency-based orientation to provide support and mentor new staff (Figure 1.1-1 LS 6).

A similar systematic approach (AOS) is used for recruiting physicians. Physician recruitment occurs from within our residency programs as part of our "grow our own" approach. As a cycle of learning in 2015, we improved our medical staff onboarding/mentoring processes to support integration and retention of new medical staff. The Volunteer Services Program has a systematic onboarding process including a behavioral-based interview and the same extensive background check as an employee.

To ensure that the WF represents the diverse ideas, cultures, and thinking of our hiring and patient community, CAMC's WF recruitment and development strategies include: 1) active participation in recruitment events locally and regionally; 2) documenting and communicating patient diversity considerations and WF education at various stages of the orientation process; 3) providing diversity awareness training at new employee orientation; and 4) leaders participation in generational diversity education to understand differences within our WF.

5.1a(3) Work Accomplishment. Our WF is organized and managed to accomplish the work of the CAMCHS through the systematic design of our work systems and work processes [2.1a(4), 6.1] that incorporate: 1) critical job skill requirements, 2) capacity needs, and 3) validation of the effectiveness of current staffing levels. As shown in our Enterprise Systems Model (Figure 6.1-1), all systems that do work in the organization are aligned to capitalize on achieving our CC. Key requirements of patients and other customers are integrated into our behavioral standard expectations and performance matrix for every employee and are embedded through orientation and training processes [3.2a(2)] that reinforce a patient, other customer and health care focus. Our effective use of VOC information enables us to build a more patient focused culture that supports our performance analysis,

review and improvement to ensure that our WF consistently meets or exceeds our key customer requirements [4.1a(3)]. The hiring process screens for our values and is reinforced by our PMS (Figure 5.1-1) to ensure accountability. Our LS focuses the organization on "raising the bar" to ensure we exceed performance expectations. As described in 5.2a(4), our PMS is designed to support high performance work and to achieve cascaded department targets developed during the SPP. Accomplishment of work is validated through the organizational review process (Figure 4.1-3).

5.1a(4) Workforce Change Management. We communicate the state of the business and the impact of healthcare changes to our WF using the communication methods described in Figure 1.1-3, so they are prepared and understand the changes we may need to implement, the reason for those changes, and their role. We proactively prepare our WF for changing capability and capacity needs through our annual SPP; ongoing WF Planning Process described in 5.1a(1); and organizational review (Figure 4.1-3) that includes continuous review of the environment for changes that require us to adapt to shifts in market conditions and organizational structure and work system changes. WF capability and capacity needs, including staffing, have changed over time with a prime example being our physician WF shift from independent community physicians to employed medical staff. We have developed career ladders for many positions to build on WF capabilities by cross-training and increasing job competencies and TCT is leading the way for standardization of work processes and new capabilities required to deliver care at CAMCHS. To manage our WF needs and to ensure continuity, we use the "grow our own" strategy and promote internally to build upon the KSA that have been developed. To prevent WF reductions and minimize the impact of such reductions, our WF Planning Process can predict changes in capability and capacity needs, affording those WF members affected advanced notice, possible training opportunities or other job opportunities through a long-standing, well deployed priority placement process. CAMC also has a reinstatement policy that allows for employees returning within two years to retain their hire date so as not to lose seniority. Our WF Planning Process is also used to prepare for and manage periods of workforce growth. For immediate or ST periods requiring additional WF, as a cycle of learning we developed a clinical resource float pool and temporary staff to fill resource needs.

5.1b. Workforce Climate

5.1b(1) Workplace Environment. Figure 5.1-3 describes our strategies to address workplace environmental factors to ensure and improve WF health, safety [see 6.2c(1)], security and accessibility including performance measures and improvement goals. All WF complete an initial health screen and review of physical requirements for each job. At specific intervals, the WF is required to have a health review and flu vaccines. Our Wellness Program provides annual screening, weight loss, nutrition, and fitness programs. Employee Health coordinates work-related health issues.

We have a systematic process to identify, track and improve our work environments. The Safety Committee conducts annual and ongoing assessments of accessibility, health, safety and security risks based on multiple identified inputs for each location; provides oversight and monitoring of action plan

Figure 5.1-3 Health, Security and Accessibility Performance

	Strategies Tailored to Work Environment	Key Measure/ Goal	Results
Health	•WF compliance with influenza vaccine •Pre-employment physicals •Fitness for duty testing	100% eligible WF	Figure 7.3-9
	•Transitional Return to Work program with temporary job restriction	100% of eligible WF placed	Figure 7.3-10
	•Wellness – screening, weight loss, nutrition, and fitness	Program participants	(AOS)
Safety [See 6.2c(1)]	•Required annual safety training •Environmental rounding/Safety audits •Infection prevention procedures •Hazardous materials procedures •Ergonomic assessments •Chemical inventory process •Blood borne pathogen review	Reduction in overall accident/injury rate	Figure 7.3-11
Security	•24-hour campus security •Associate/vendor identification badges •Escorts and car assistance •Code Gray: combative help	Reduction in personal thefts	(AOS)
Access	•Card readers for access •Security desk (ED/Mother/Baby) •24/7 surveillance •Security rounds/Security station 24/7 ED	Number of safety incidents	(AOS)

progress; and validates effectiveness through audits and safety rounds. Security provides 24/7 security support and on-campus first response services.

Access has become increasingly important in the healthcare environment. We restrict access through 1) coded access cards, 2) specific access procedures that secure our Mother/Baby and Emergency Departments, 3) appropriate areas being locked, and 4) emergency action codes. Our WLDS (Figure 5.2-3) provides WF training emphasizing personal security, workplace violence, crisis intervention and identification of workplace hazards. Specialized curriculum for WF health, safety and security is targeted to specific job groups and defined for specific workplace environments. Identified risks are prioritized, addressed and reviewed annually through the organizational sustainability review described in 1.1a(3). Cycles of learning led to the redesign of units to increase efficiency and to decrease potential WF injuries. We use 5S tools for standardization to provide a safe and orderly environment.

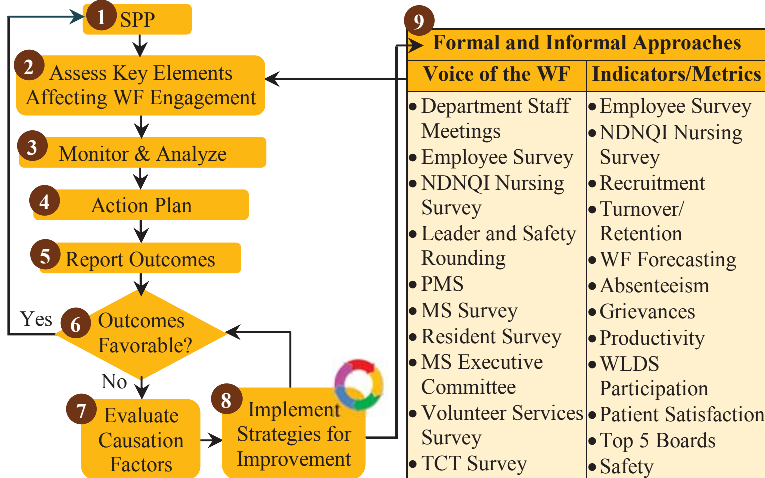
5.1b(2) Workforce Benefits and Policies. We conduct an annual systematic analysis of the compensation and benefit structure (Total Compensation Review) to determine if changes are needed to support our WF via services, benefits and policies. Annually, our benefit process includes a review of needs, affordability and sustainability and is aligned with our SPP (Figure 2.1-2). Our WF is offered at least 14 key benefits and 18 additional benefits and services (Figure 5.1-4). Most benefits can be tailored by the employee to meet the needs of our diverse WF and

Figure 5.1-4 WF Benefits & Services

Benefit/Service (Full benefits AOS)	Tailored	Non-Tailored
Health and Vision Plan	x	
Prescription Drug and Dental Plan	x	
Flexible Spending Accounts (Healthcare/Dependent Care)	x	
Life Insurance (Employee, Spouse, Child Term Life and AD&D)	x	
Short-Term Disability	x	
Long-Term Disability		x
Paid-Time Off		x
Purchased Paid-Time Off	x	
Retirement	x	

different WF groups and segments. Cycles of learning led us to monitor feedback from 14 different listening posts (full list AOS), including the voice of the WF, external experts and benchmarking.

Figure 5.2-1 Workforce Engagement Process



5.2 Workforce Engagement

5.2a Workforce Engagement and Performance

5.2a(1) Organizational Culture. To empower our WF, we foster an organizational culture that is characterized by open communication, high performance work and engagement through our LS (Figure 1.1-1). Every leader is required to listen, role model and communicate. Our culture is further defined through open and two-way communication using the approaches in Figure 1.1-3. This culture results in an engaged WF (7.3-14) and permeates all that we do, including a no-blame reporting culture for potential safety issues. We ensure that our culture benefits from the diverse ideas, cultures and thinking of our WF by: 1) understanding the diverse nature of our patient and stakeholder mix, 2) training on diversity, 3) ensuring a no-blame culture, and 4) promoting an environment that is transparent and open to employee input through our listening approaches in Figure 5.2-1⑨. To validate the effectiveness of these approaches, key elements of our culture are assessed through our WF engagement survey (7.3-18).

5.2a(2) Drivers of Engagement. Key drivers that affect WF engagement (Figure 5.2-1②) are determined through an analysis by our third party vendor of the annual employee survey data to 1) identify the questions that have the greatest correlation to engagement. Engagement data are 2) further analyzed through a systematic process to determine elements for different workgroups and segments. 3) HR staff analyzes segmented results, comments, and other WF metrics to identify themes and trends for each of our WF segments, entities, hospitals and departments.

5.2a(3) Assessment of Engagement. WF engagement is assessed through a systematic approach that includes both formal and informal approaches (Figure 5-2.1⑨). Our annual Employee Satisfaction and Engagement survey is our formal approach to obtain feedback from the WF segments shown in Figure P.1-3. We solicit additional feedback through specific surveys tailored to our nurses, physicians (employed and private) and our volunteers. Goals and BIG DOTs are set during the SPP ① based on the overall composite score from the annual Employee Survey. Levels of engagement are analyzed ② from formal and informal approaches ⑨ (including turnover/retention, absenteeism, grievances, safety, and productivity) which are assessed daily, weekly, quarterly and annually (Figure 4.1-3) and as part of the annual WF Capability and Capacity planning process for each of our WF groups. Monitoring, analysis ③ and the development of action plans ④ and measures designed to improve factors that support engagement and measure progress are reported ⑤. If outcomes are not favorable ⑥, causation factors are evaluated ⑦ and improvements ⑧ to action plans are made.

As a cycle of learning in 2012, we increased our number of clinical FTEs following systematic review of productivity and safety targets as a result of feedback received in the annual employee survey.

Medical Staff and Volunteer surveys and MS participation in teams are used for assessing engagement of these WF segments and follow the process described in Figure 5.2-1.

As a cycle of learning, we identify departments with lower leadership scores, and pair them with managers who are most successful to assist with developing improvement plans through sharing best practices. This integrates with our LS requirement to *Mentor and Develop People*.

5.2a(4) Performance Management. Our PMS (Figure 5.1-1) is a systematic approach that supports high performance and WF engagement by evaluating, compensating, rewarding, and recognizing our workforce. The process is fully deployed and reviewed for improvement annually. Each step in the process aligns with our MVV and SP through a set of formal and informal processes. The PMS process has four phases: In phase ① Clarify Expectations, goals developed through the SPP are cascaded and action plans are finalized with appropriate performance measures to department scorecards which become the foundation for the department manager and employee individual performance goals. Phases ② and ③ of the PMS assess performance both continuously and annually. The assessment includes our values, job performance and goal accomplishment. Action plans and targets set during the goal

Figure 5.2-2 Reward & Recognition Methods

Reward & Recognition	High Performance	Innovation and Intelligent Risk Taking	Patient Focused Care	Workforce	Physicians
Heart & Soul	x	x	x	x	x
Volunteer Celebration			x	x	
Thank You Notes	x	x	x	x	x
Rounding	x		x	x	x
Service Award Program & Dinner	x			x	
Service Award Recognition Boards	x			x	
Quality Awards	x	x	x	x	x
HCAHPS	x	x	x	x	x
On the Spot	x		x	x	
KEEP/ASP Program	x		x	x	x
Medical Staff Recognition Dinner			x	x	x
Nurse Excellence Award	x	x	x	x	
DAISY Award	x	x	x	x	
Medical Staff Employee Recognition	x	x	x	x	x

cascade include stretch targets that support high performance. Every pillar has a focus on patients, other customers (or the WF which serves them) and healthcare. The continuous assessment (2) ensures the achievement of the action plans, and provides for reward and recognition for meeting goals and modeling behaviors (Figure 5.2-2), or for coaching and continuous improvement if any of the aspects are not being met. Annually in stage (3) we formally evaluate performance, and in stage (4) link outcomes to compensation and recognition. Individual training and development plans are our approach to *"raise the bar"*. As a cycle of learning all leaders are now required to have a Learning and Development Plan which is tied directly to the leadership competencies.

Monetary compensation and non-monetary recognition are essential to create and sustain high performance and contribute to daily engagement and strategic performance ownership. All regular status employees are eligible for an annual merit-based increase and an incentive award when annual goals and BIG DOTs are achieved. Quality performance incentives may be added at the hospital or service level to reward achieving quality or regulatory targets. Skill-based compensation plans provide incentives and reward for individuals who attain career ladder achievement, specified certifications or other competencies in targeted professional or technical positions. The performance management processes for medical staff and volunteers are AOS.

Each level of our organization has clear factors which force innovation and intelligent risk taking through the steps identified in Figure 2.1-4. Recognition is used to reinforce intelligent risk taking for innovation, as well as focus on patients and other customers, and achievement of our action plans. A list of recognition approaches is presented in Figure 5.2-2. For example, the Heart & Soul program recognizes WF members based on MVV criteria, intelligent risk taking and service excellence.

5.2b Workforce and Leader Development

5.2b(1) Learning and Development System. To achieve our vision of being the Best Place to Learn, our Workforce Learning and Development System (WLDS) enables us to effectively support CAMCHS's needs and the personal development of our WF members, managers and leaders (Figure 5.2-3). The WLDS allows us to leverage our ability to create a high-performance work environment. Key drivers (1) influence our WLDS by identifying factors beyond the organization's control for consideration in our annual SPP. These factors are then assessed in the SPP (2) by pillar owners, corporate goals and WF capability and capacity needs. The assessment is used to determine CAMCHS' learning needs as well as personal development of our WF members, managers and leaders. The Best Place to Learn (BPTL) Council (3) was created through a cycle of learning to provide a systematic way to organize and prioritize education planning and validate, align and integrate education needs. The Council is comprised of representatives from key areas throughout the CAMCHS ensuring all education requirements are being met, and emerging education needs are identified and planned for implementation. Based on the identified needs, training programs are developed, implemented, evaluated and improved (5)(6). For example, aligning leadership development with the LS (Figure 1.1-1) helps develop leadership knowledge and skills required to advance our CC, address our SC, and accomplish action plans. Cycles of

Figure 5.2-3 Workforce Learning and Development System (WLDS)

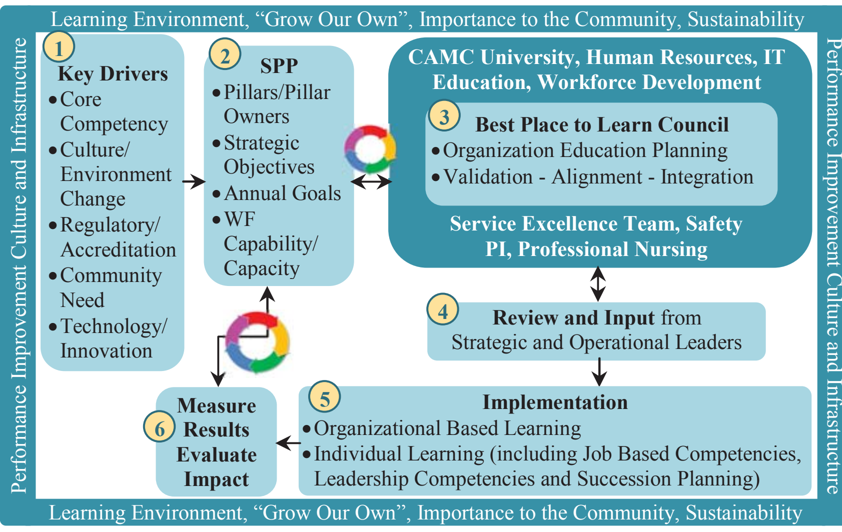


Figure 5.2-4 Examples of Education/Training Addressing Learning and Development System Requirements 5.2b(1)

Educational Offerings	Learning and Development System Requirements	How Offerings Support Organizational and Personal Development - Distinctions
Clinical Conferences	CC; Focus on Patients	Largest provider in the state
SET Service Plus Training	CC; Action Plans Focus on Patients and Customers	"Service Excellence" behaviors (10,257 trained to date)
TCT	PI and Innovation/Action Plans	More time at the bedside; WF efficiencies
Research Day	Innovation	Translating research to practice
Simulation Program	Innovation Translate learning to application	State-of-the-art technology Reinforce new knowledge/skills on the job
Ethics in the Round	Ethical Healthcare	Promotes values and ethical practice
IT (ISO 9001, ICD-10, Soarian)	Ethical Business Practice Focus on Patients; SC	Embraces cutting edge technology for patient care delivery
CME	New knowledge and skill for WF	National Accreditation with Commendation
Universal Curriculum for Residents	New knowledge and skill for WF Focus on Patients	Meets or exceeds benchmarks on ACGME survey
CAMC University Leadership Development Program	Transfer of knowledge Workforce Development New knowledge and skill for WF	Grow Our Own, Highly qualified leaders (> 85% of leaders promoted from within) Leadership Capability and Capacity
Nursing Leadership Development Program	Transfer of knowledge; Action Plans; SC; WF Development New knowledge and skill for WF	Grow Our Own Highly qualified nursing leaders (greater than 90% promoted from within)
Crucial Conversations/ Team Training/Just Culture	Focus on Patients PI New knowledge and skill for WF	Learning Environment Enhancing Patient Safety Culture 3,007 workforce members trained
EduTrack	New knowledge and skill for WF Focus on Patients	Employee In-service/Training Portal Live and CBT offerings
Medical Explorers	SC; Innovation; Workforce Development	20-30 high school students participate each school year, focus on future WF
Imagine U Virtual Surgery Experience	SC; Innovation; Workforce Development	10,347 students from 30 high schools (2007-2014), focus on future WF
Junior Volunteers	SA; WF Development	50+ junior volunteers per year

learning include identifying and validating leadership competencies for our strategic, operational and front line leaders and further developing additional education directly supporting these aligned LS competencies (complete list of competencies/programs AOS).

Review of the BPTL Council's education plan by strategic and operational leaders (4) allows for recommendations, input and re-evaluation of the training plans to ensure alignment with the BIG DOTs and our CC. Implementation (5) of the Council's recommendations fall into one of two categories: Organizational Based Learning (required of everyone) or Individual Learning (addressed through Job Specific Competencies or Succession Planning). Results are measured and the impact is evaluated for continued success (6). Changes are considered through the SPP for future need identification or modification.

Figure 5.2-4 provides examples of CAMC's educational offerings that support organizational needs and personal development of our WF. These offerings demonstrate how we: 1) address CC, SC, action plans; 2) support PI, organizational change and innovation; 3) support ethical healthcare and business practices; 4) improve focus on patients and customers; 5) ensure transfer of knowledge; and 6) reinforce new knowledge and skill on the job. Each of these offerings shows the connectivity to requirements and how the offerings support organizational and personal development.

5.2b(2) Learning and Development Effectiveness. We evaluate the effectiveness of our WLDS using Kirkpatrick's four levels of learning (Figure 5.2-5). For example, JITs validate specific required job competencies of a WF member. WLDS efficiency is evaluated by key factors such as cost against level of participation and effectiveness, frequency of course offerings, rapid spread of new knowledge, and convenient access. Findings from our assessment of WF engagement are correlated with learning and development outcomes (Figures 7.1-42, 7.3-1 - 7.3-4, 7.3-13) that support our "Grow our Own" culture and patient focus which is a key indicator of WF engagement. The BPTL Council reviews the WLDS (Figure 5.2-3), organizational performance (Figure 4.1-3) and WF feedback to determine correlations that enable us to identify opportunities for improvement in both WF engagement and learning and development offerings (Figure 5.2-4). As a cycle of learning, we have deployed the concept of *Train the Trainer* to increase the effectiveness of deployment and increase efficiency through cost savings and flexibility with having internal experts.

Figure 5.2-5 Learning and Development Levels (Full list AOS)

Learning & Development Program	Orientation	Online Learning	Leadership Courses	Simulation Center	Team Training	PI Training	JIT
***Kirkpatrick**							
Level 1	x	x	x	x	x	x	x
Level 2		x	x	x	x	x	x
Level 3			x	x	x	x	x
Level 4					x	x	
Workforce Audience							
Nursing	x	x	x	x	x	x	x
Non-Nursing	x	x	x	x	x	x	x
Physician	x	x	x	x	x	x	
Volunteer	x	x					

**Levels vary within each category.*

5.2b(3) Career Progression Our systematic approach to manage career progression for WF members is based on a combination of self-selection and the identification of candidates for training and promotion to support our organizational needs. The approach balances both individual and organizational needs and goals. Career progression discussions occur through our WF Planning Process [5.1a(1)], our Hiring Process [5.1a(2)], PMS (Figure 5.1-1 (4)), and the WLDS (Figure 5.2-3). During performance planner development meetings and annual reviews, managers discuss the employee's career advancement goals. Career progression also involves identifying employees who could be developed based on organizational needs that stem from our capability and capacity review during the SPP. For example, CAMC offers scholarships for programs that allow a WF member to pursue advanced degrees that support organizational needs.

Career progression for management and leadership positions is handled through a four step Succession Planning Process, and encompasses both ST and LT assessments. 1) Our SL identify critical positions that would require an emergency interim placement should the position become unexpectedly vacant (high level positions with a broad span of control or a stand-alone position requiring unique knowledge or experience). 2) Next, SL determine "bench strength" for those positions identifying potential emergency interim choices. 3) Longer-term succession planning identifies those who are ready now to move into a leadership role, those who will be ready within a year, and those who can or will be ready in 2 or more years. 4) Those identified in the longer-term assessment have specific development plans created to ensure readiness (Figure 5.2-3) which may include opportunities through targeted experiences, progressive responsibilities, and formalized education courses offered by CAMC University or other learning forums such the WV Nursing Leadership Institute. Front-line supervisors have formalized training programs that offer tailored programs for nursing, allied health, corporate and support services. These programs are designed to give front-line supervisors the leadership KSAs necessary to be effective leaders and be prepared for promotion to higher positions.

The BOT's Compensation Committee and CEO review SL job performance annually. They consider experience, job expertise, competency and performance. SL support their direct reports through coaching, mentoring and training such as the Baldrige Performance Excellence framework, Team Steps, Crucial Conversations and Crucial Accountability training. SL also require their direct reports to develop the level below them. Should a catastrophic event occur with a SL, individuals have been identified to fill those roles. The BOT annually reviews the Compensation Committee's recommendations. Succession planning for MS officers is also through a systematic process. Officers are elected with a designated succession plan from secretary to vice-chief, chief-of-staff and past chief-of-staff, allowing for progression of learning and defined succession of leadership roles.

Operations

6.1 Work Processes. We design, manage, and improve our key health care services and work processes though the framework established in the Enterprise System (Figure 6.1-1). Figure 6.1-2 defines our work process and support system

key requirements and Figure P.2-4 provides our approach to designing, managing and improving performance for our health care services and work processes.

6.1a Service and Process Design. The Enterprise System (Figure 6.1-1) is our systematic process for accomplishing the work of the organization through systems that guide ❶, do work ❷ and support the systems that do work ❸. We begin with the MVV, VOC and customer requirement inputs ❹. Guidance is provided by legal and ethical standards and governance system (1.2b), the LS (Figure 1.1-1), SPP (Figure 2.1-2), PI System (Figure P.2-4) and Innovation System (Figure 1.1-2). Our Key Work Systems are Inpatient, Outpatient and Emergency Care [2.1a(4)] and these systems are deployed throughout the CAMCHS.

6.1a(1) Service and Process Requirements. Our process to define key health care service and work process requirements (Figure P.2-4) is a three step process that includes: 1) determine strategic opportunity for improvement; 2) identify customer requirements [including cycle time, productivity, and other efficiency and effectiveness measures (6.2a)]; and 3) define the problem. Each of these steps is defined in detail in our DMAIC training in orientation and annual in-services.

Our key work processes are Preadmission/Admission, Treatment, Discharge, Post Discharge. The key requirements for these work processes are listed in Figure 6.1-2. These processes are reviewed annually for any changes to the key requirements which would trigger a DMAIC cycle of learning.

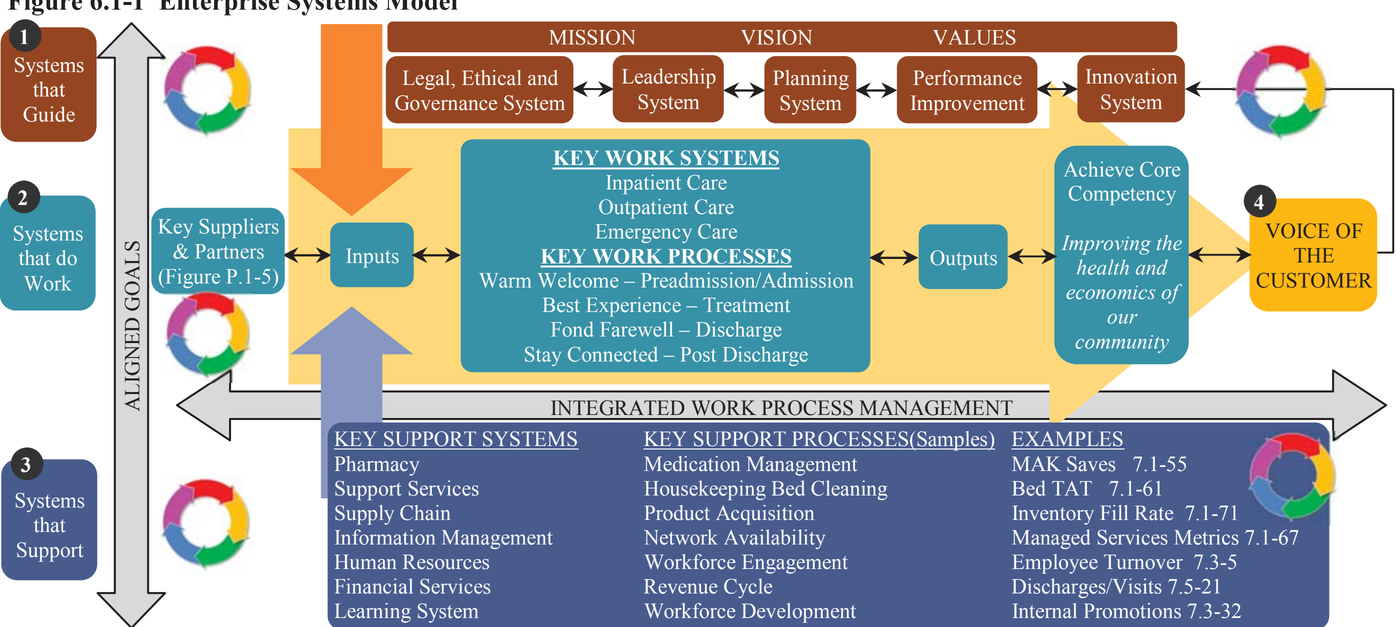
6.1a(2) Design Concepts. DMAIC is used to design our health care services and work processes to meet requirements (Figure P.2-4). Health care services and work processes are designed based on patient and other customer key requirements (Figure 6.1-2). Unlike DMAIC use for improvement, if the process is not defined: 1) all patient and other customer requirements are identified and key work process requirements are defined; 2) we then identify and apply or create best practices (including review and appropriate use of new technology and the factors in 6.2a, as shown in Figure 2.1-3 B); 3) we utilize organizational knowledge including evidence-based medicine (4.2a and Figure 4.2-1); and 4) we determine requirements for patient and other customer value (Figure 3.1-1 ❶❷❸). The process is then 5) mapped either through value stream mapping or design, and key performance indicators are identified (including health care service excellence targets). We determine if internal or external resources are needed to develop and manage the process through the Impact Leadership Committee. The potential need for agility is incorporated into the design of these services and processes using six sigma tools and methodology throughout each of these steps. The design step is part of the *define* and *measure phases* of DMAIC. As examples, Siemens, our IS partner, has engaged closely with us for the design of workflows and implementation of technology to solve complex issues (AOS) while our WVU/Charleston partner has aligned and integrated our SPP across the GME programs through the design and deployment of an interdepartmental QIPS Advisory Council.

6.1b Process Management.

6.1b(1) Process Implementation. Our systematic approach for ensuring that our day-to-day operation of key processes meets key process requirements is described in Figure P.2-4. The *Develop Process Measures Based On Criteria* step includes developing both in-process and outcome measures. The implementation process begins with: 1) standardization of the process; 2) deployment through policies and procedures; 3) dissemination of learning through the use of Single Point Lessons (SPL) and Job Instruction and Training (JIT) and; 4) management through in-process and performance measures. Oversight for this process is the responsibility of the SL process owner who monitors key performance measures (Figure 4.1-3) and in-process measures for the control and improvement of work processes (Figure 6.1-2). If there is a gap in performance (Figure 2.1-5), a cycle of learning using DMAIC is initiated and action plans are modified.

Examples of key performance and in-process measures that we use to control and improve each of our key work processes are listed Figure 6.1-2 and the full list is AOS. The key partner relationships shown in Figure P.1-5 are integrated in our plans, tracking and improvement and are so integrated into

Figure 6.1-1 Enterprise Systems Model



CAMCHS that our patients think they are CAMC employees. As shown in Figure 6.1-2, these measures relate to the quality of outcomes and the performance of our health care services. We track both in-process and outcome measures for every work process and for every customer segment. Top 5 Boards focus departments and partners on improvement priorities. For example, a CPS Scorecard measure is the development of an infrastructure to ensure safe, timely, efficient, equitable, effective and patient centered care. Through cycles of learning, CPS has improved the measure from 90.42% to 99.07 % (2010 to 2013), exceeding both target and benchmark performance. An example of process implementation was deployment of 5S to all nursing units to standardize the organization of medications, clean/dirty supplies, forms, equipment and linen to meet the Treatment and Discharge KWP requirement for timeliness (Figure 6.1-2). Results are shown in Figure 7.4-2.

We review work processes annually during the SPP (Figure 2.1-3 K). Through cycles of learning, we have improved medication reconciliation, are transitioning to a new IS platform (Cerner) and are initiating Value Stream Mapping in 2015.

6.1b(2) Patient Expectations and Preferences. We address and consider each patient's expectations through a variety of listening and learning posts (Figures 3.1-2, 3.2-1) enabling us to understand current and future key customer requirements. Expectations are managed for each work system and work process (Figure 6.1-1) at multiple touchpoints before, during, and after each visit. We have mapped the patient experience through each touchpoint to 1) understand key requirements and 2) enable us to explain healthcare service delivery processes and likely outcomes to set realistic patient expectations. A cycle of learning is defining a *Patient Experience Pathway* to standardize key actions that need to occur at each stage of our KWP based on patient and family expectations (Figure 6.1-2). We factor patient decision making and patient preferences into the delivery of our healthcare services through a systematic process that occurs at key phases of our customer interaction: *Before* - During the preadmission/admission process, patient decision making and preferences are gathered through the nursing database and input into the EHR system, consent process for treatment and surgery, and through the Advance Medical Directive forms.

We have a systematic process for orienting patients to the units upon admission through two-way communication and an admission folder containing written information to help ease their transition to the unit. *During* - Patients' daily goals are written on the White Board in their rooms as a communication and feedback method for meeting expectations. An Interdisciplinary Plan of Care (IPOC) process helps ensure that patient and family goals are central to the delivery of care. Rounding helps validate that expectations are met. Rounding and other listening post data are trended and analyzed for improvement in exceeding patient expectations (Figure 3.1-1). In Figure 6.1-2, key customer requirements are factored into each key work and support processes for IP, OP and ED work systems with in-process measures that help us validate our effectiveness in aligning patient expectations and preferences with our healthcare service delivery. A cycle of learning is the implementation of customizable patient education on TV monitors at the bedside. *After* - We use a wide range of tools to validate the effectiveness of the experience (shown as Post Discharge-PD in Figure 3.1-2), to ensure that we stay connected and offer additional support or service recovery.

6.1b(3) Support Processes. We align our Key Support Processes with Key Support Systems (Figure 6.1-1 bottom) for ownership, accountability, and organizational alignment and integration. We have a three step approach for determining key support processes during the SPP: 1) we review our key support systems and determine if the current support processes within those systems meet the key work system and work process requirements; 2) we identify if any work process gaps exist in current key support systems; and/or 3) we identify the need for new key support processes to address VOC, regulatory or other requirements. This occurs during the SPP (Figure 2.1-2 2 and Figure 2.1-3 K). Examples of our key support

Figure 6.1-2 Key Work Processes and Key Support Systems and Processes

Key Work Processes		Key Requirements 7.1(a)	Measures 7.1b(1)	Results
Preadmission Admission	Warm Welcome	High quality, safe care Respectful attitude Knowledge and skills Timeliness/Ease through the system	IP - Uninsured Patient Conversion OP - Third Next Available Appointment ED - ED Turnaround Times by Hospital	7.1-54 7.1-52-7.1-53 7.2-19
Treatment	Best Experience	High quality, safe care Knowledge and skills Timeliness/Responsiveness Communication	IP –MAK Saves OP – Documented Plan for Chemotherapy ED – ED Priority 1 Trauma	7.1-55 7.1-58 7.1-41
Discharge	Fond Farewell	High quality, safe care Communication Coordination of care Timeliness	IP – Average LOS OP – Medication Reconciliation on OP Chart ED - Lab ED Turnaround Time	(AOS) 7.1-44 7.1-59
Post Discharge	Stay Connected	High quality, safe care Communication Coordination of care with next provider	IP – PCP Appointments Scheduled OP – Follow-Up Mammogram after Screening Copy of Medications Provided	7.1-63 7.1-48 7.1-43

Key Support Processes (Full list AOS)	Organizational Support Requirements 7.1(a)	Measures 7.1b(1)	Results
Work System Key Requirements are addressed by each Key Support System			
Medication Management	**Inpatient** High quality, safe care Communication/respect Responsiveness/ timeliness **Outpatient** High quality, safe care Communication Timeliness **ED** Timeliness High quality, safe care	Missing First Dose Review MAK Saves	(AOS) 7.1-55
Housekeeping Bed Cleaning		Bed Turnaround Times	7.1-61
Product Acquisition		Inventory Fill Rates	7.1-71
Network Availability		Network and Server Availability, IT Help Desk, Help Desk Customer Survey Managed Services Metrics	7.1-67
Workforce Engagement		Overall Employee/Nursing Turnover Time to Fill New Positions Employees Living the Values	7.3-5;7.3-6 7.3-7 7.3-29
Revenue Cycle		Inpatient Discharges Outpatient Visits Emergency Room Visits	7.5-21 7.5-25 7.5-26
Workforce Development		Internal Promotions	7.3-32

processes are found in the Enterprise Model (Figure 6.1-1) and Figure 6.1-2. All support processes associated with our Key Support Systems and the associated results are AOS. We use our Organizational Review Process (Figure 4.1-3) to ensure that the day-to-day operation of these processes meet key organizational support requirements.

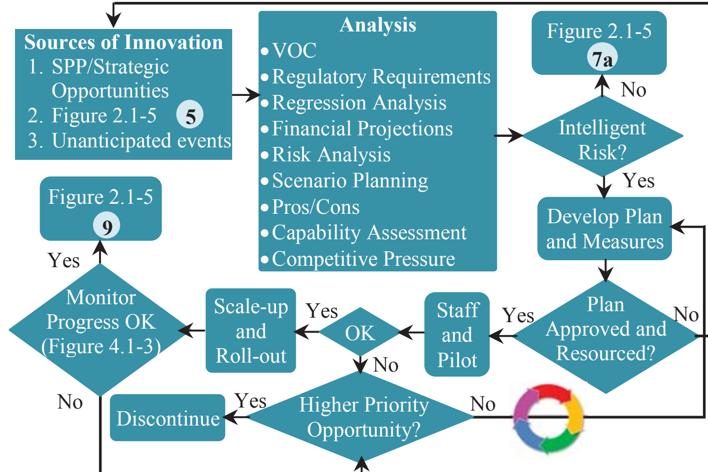
6.1b(4) Service and Process Improvement. Our approach for improving our work processes to improve health care services and performance, to improve reliability/reduce variability, and to achieve our CC is through the use of DMAIC and the application of Lean tools. Our work processes create value for our patients and ensure we operate more effectively and efficiently.

An example is our work with sepsis. QUEST helped us identify sepsis as the highest cause of mortality for CAMC and it became a Goal and BIG DOT in the SPP. The Sepsis PI Team reviewed our work processes for improvement opportunities using DMAIC (Figure P.2-4). Physician leaders developed bundles that incorporated best practices to reduce mortality. Efforts in **Pre-admission** focused on training staff in nursing homes on early identification and intervention as a result of VOC related to repeat sepsis patients. **Admission** improvements focused on early recognition of sepsis in the ED Work System. An innovation using the patient monitoring and information system to gather diagnostic information alerts the ED nurse to do a sepsis evaluation and implement the sepsis bundle. The **Treatment** process was improved to initiate a call to the Intensivist from the ED information system to implement the treatment protocol. Cycles of learning led to protocol changes to address patients who developed sepsis during their hospitalization through an additional information system innovation. Vital signs in Soarian now create a safety alert that notifies the MET team electronically to evaluate the patient for early intervention.

Supply Chain ensured the right combination of medications to decrease ventilator days and days in the ICU. **Discharge** processes were improved to include follow up with the patient's PCP and education on reduction of risk factors for patients and families. **Post discharge** processes include communication to the medical staff to increase awareness of prevention and early identification of sepsis. As a result of these work process improvements, CAMC has saved 1,613 lives from 2011-2014 (Figure 7.1-10). Through cycles of learning, our culture, and forcing functions for innovation, multiple innovations have occurred with work processes such as TCT and use of the Simulation Center.

6.1c Innovation Management. Our Innovation System (Figure 1.1-2) incorporates our Innovation Culture (Figure 2.1-4), Innovation Process (Figure 2.1-5), and Innovation Management (Figure 6.1-3). We have three key sources of innovation: 1) a strategic opportunity identified during the SPP, 2) our performance reviews shown in Figure 2.1-5 (examples of the reviews are in Figure 4.1-3), or 3) an unanticipated source. Once analysis is completed and we determine through the use of intelligent risk criteria (AOS) that the strategic opportunity should be pursued, we develop the implementation plan, seek approval from the appropriate decision making group (see Figure 2.1-4), staff, and pilot the innovation. We make financial and other resources available to pursue these opportunities through adjustments to budgets at the hospital level for department and cross department levels (Figure 2.1-4) and through the Impact Leadership Team for organization level opportunities. If the innovation is meeting the key success measures and targets identified, it is scaled up and deployed to the appropriate areas where progress is monitored as described in Figure 2.1-5 8 9. We have two options to discontinue pursuing opportunities to support higher level opportunities: 1) if the pilot does not meet targets, or 2) if the innovation does not meet required targets as part of the ongoing review process. An example of a strategic opportunity that we did not pursue, based on intelligent risk criteria, was placing a clinic in our local Walmart. While attractive, we were unable to make the clinic financially viable and through benchmarking found that a number of hospitals were ending these relationships after a short period of time.

Figure 6.1-3 Innovation Management



6.2 Operational Effectiveness

6.2a Process Efficiency and Effectiveness. Our systematic approach to control the overall costs of operations is achieved by deploying Lean Six Sigma in four primary areas: 1) standardizing work processes to deliver repeatable and predictable results that can be shared as best practices [4.1c(1)]; 2) reducing variation by identifying and eliminating waste which enables the work processes to flow more efficiently and effectively and reduce cycle time leading to minimizing health care costs; 3) increasing electronic automation including integrating work processes to improve access to information to enhance the delivery of care; and 4) productivity enhancements.

In our approach to work process design, we incorporate cycle time, productivity, and other efficiency and effectiveness factors with associated in-process measures. We prevent rework and errors, including medical errors to patients as well as minimize the costs of inspections, tests and process or performance audits through the use of Lean Six Sigma tools that provide a standard methodology for workplace organization, visual management, standardization and problem solving. Daily deployment of layered audits in all TCT nursing units ensures service and process improvements are addressed daily. The full deployment of these improvement processes allow us to reduce and maintain cost reduction and meet the individualized needs of patients and families. Cycles

of learning include revisions to the waste walk and better alignment with the A3 process.

Our cost control approach is reviewed annually during the SPP (Figure 2.1-3 A,J) and quarterly (4.1b) by the Impact Leadership Team whose purpose is to align resources to support and balance goals for cost reduction and meeting customer requirements. In the past twelve years, Six Sigma cost reductions exceeded $156 million. Innovations resulted in reductions in pharmacy waste and post-operative antibiotic use, each resulting in over $1 million in annual savings.

6.2b Supply-Chain Management. Our approach to manage our supply chain is an 8 step fully deployed clinically integrated value analysis (Figure 6.2-1). The process begins when (1) the end user submits a request for a new or replacement product. Detailed data is introduced to the appropriate Value Analysis Team (VAT) (2) and reviewed using defined criteria that consider quality, patient outcome, user ability, financial and environmental issues. If a decision (3) is made to use the product, Supply Chain Management ensures (4) sourcing and distribution channels are optimized. All required communication and education (5) related to the change or addition of the product occurs.

We use an extensive RFP process with specific criteria (AOS) for selecting our group purchasing organization (GPO) and other suppliers and for ensuring they are qualified and positioned to enhance our performance and our patient and other customer satisfaction. All vendors must meet CAMC's defined credentialing criteria before being granted access to the hospital or performing any sales or educational visits. We also use our GPO and other suppliers to help us achieve efficiency in supply cost management, support innovation through researching new technology and products, and provide a forum for networking to share best practices.

Key Distribution Supplier performance is measured and evaluated (6) monthly for fill rates, invoice discrepancies, service issues and returns. Bi-annual or annual scheduled business reviews are conducted with suppliers for learning and alignment of service expectations. Key Distribution Supplier scorecards are used to provide feedback (7) on service issues, reported product failures and business related issues. If any safety issues are identified, the Safety Department issues a Safety Alert for organization learning and safety issues are provided as feedback to the supplier to help them improve as part of a systematic communication process. We deal with poorly performing suppliers by sharing information during business reviews including key elements of product quality issues, technology, cost and business practices or through one-on-one discussion in person, by phone or email. Suppliers who fail to improve see their business go to bid. (8)

Figure 6.2-1 Supply Chain Management

Value Analysis Oversight Team
(8)
(1) End User Submits Product Request to SCM • New • Replacement
(2) VAT Reviews Product
(3) Decision to Use Product
No
Yes
(4) Sourcing and Distribution Channels Established
(5) Communicate and Educate
(6) Evaluate Product Performance
(7)

As a cycle of learning we implemented Service Line Analytics software which allows for comparison of physician cost and utilization of products. In our first year of use, aligned with SC(1) (Figure 2.1-6), we standardized biological bone materials that resulted in $300,000 in annual savings.

6.2c Safety and Emergency Preparedness

6.2c(1) Safety. CAMCHS ensures a safe operating environment through a systematic process that includes pre-employment screening, orientation/training, hazard surveillance, safety reporting, risk identification/mitigation, occurrence investigation, and RCA. Our safety system addresses proactive accident prevention by: 1) defining job requirements, 2) assessing the individual's ability to perform required functions, 3) defining policies and processes to safely perform tasks, 4) providing PPE, and 5) training at orientation/ annually/or more frequently when changes in duties occur [5.1b(1)]. 6) Inspection strategies are deployed across the system through leadership rounding, and safety, facility and security rounds. 7) Auditing processes are systematically used for targeted issues and include hand hygiene, semi-annual departmental inspections, and use of outside consultants. Performance gaps are managed using DMAIC and include recovery processes. System failures are reviewed using the RCA process resulting in action plans for prevention and improvement strategies that are deployed by SPL and Safety Alerts to the hospital and department level. Cycles of learning include testing provisions for training modules (Figure 5.2-3) and our process for review of safety systems.

6.2c(2) Emergency Preparedness. CAMCHS has a three step process to ensure we are prepared for disasters and emergencies. 1) Prevention begins with annual review of the Emergency Operations Plan as part of the SPP. An emergency capability assessment is conducted and reviewed against sustainability factors (Figure 2.1-3 J). The plan is deployed through WF training, simulations and drills (Figure 7.1-66). 2) Continuity of Operations is planned with appropriate city, county and state agencies and with local and regional hospitals. CAMCHS serves as regional coordinator for hospitals in EMS Region 3-4. Our process was tested June 2012 when a violent windstorm caused approximately 70% of the state to be without power. Although we were without power for days, our hospitals continued to operate and accept patients from outlying hospitals due to our prevention planning for redundant power feeds and availability of generators. The water crisis (January 2014) also demonstrated our preparation to ensure continuity of operations and reliance on our partners. Morrison and Crothall (corporate) provided water storage containers to assist in distribution of water to our hospital departments and to supply water sources for dialysis and endoscopy equipment cleaning. 3) Recovery processes are addressed by our Organizational Sustainability Assessment held annually as part of the SPP [1.1a(3)] and through ongoing training, simulations and drills. DMAIC is used for continuous improvement of our prevention, emergency readiness, and recovery processes. As organizational learning occurs, information is cycled back into the annual SPP and Emergency Operations Plan. This is aligned with our CC, "*Improving the Health and Economics of our Community*", by keeping health care services available to the community through our emergency preparedness.

Category 7 Results

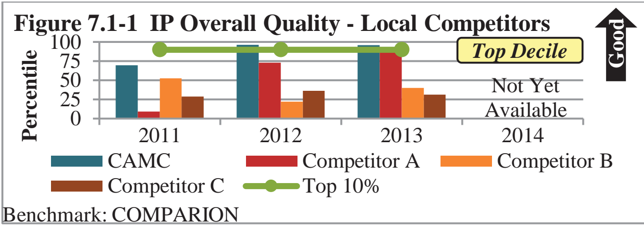
- *Some of the most currently available CMS and other comparison benchmarks and data lag by over 1 year.*
- *CAMC Teays Valley Hospital (TVH) joined CAMC on March 1, 2014. Best practices are being deployed at TVH to improve results in many areas.*
- *Additional segmentation for results is AOS. We routinely look at results to the department level for quality, safety, patient satisfaction, employee satisfaction, medical staff, financial and marketplace results as part of our Organizational Performance Review (Figure 4.1-3).*

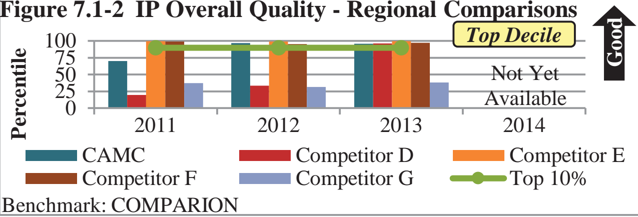
7.1 Health Care and Process Results

7.1a Health Care and Customer-Focused Service Results

CAMC's overall quality performance is at the top decile as determined by three nationally recognized benchmarks: Comparion, Healthgrades and Premier, Inc. **Comparion** uses Medicare data that compares all hospitals in multiple domains of quality including: evidenced-based care, mortality, safety, overall complications, and patient satisfaction. As with all CMS data, the benchmark lags by 18 months. **Healthgrades** also uses Medicare data and looks at 33 conditions or procedures and their clinical outcomes during and after hospitalization. These include hospital complications, inpatient mortality and 30 day mortality. **Premier** utilizes data from more than 700 participating hospitals for mortality, complications, and safety. **Comparion** and **Healthgrades** provide data from all hospitals treating Medicare patients. The following charts show CAMC overall quality and safety benchmarked to top decile and compared to both local and regional competitors. Our performance in 7.1a addresses our strategic challenge of governmental pressure to increase quality (Figure P.2-3).

Health Care Outcomes - Quality, Safety, Complications - Inpatient





CAMC is the only hospital in WV and among regional competitors recognized by Healthgrades for top 5% quality in both 2014 and 2015 (Figure 7.1-3).

Figure 7.1-3 Healthgrades Distinguished Hospital Award

Year	CAMC	Local Competitors			Regional Competitors			
		A	B	C	D	E	F	G
2014	Yes	No	No	No	No	No	No	No
2015	Yes	No	No	No	No	Yes	No	No
Only Hospital to Sustain Performance								

Figure 7.1-4 provides segmented data by condition compared to local, state and regional competitors.

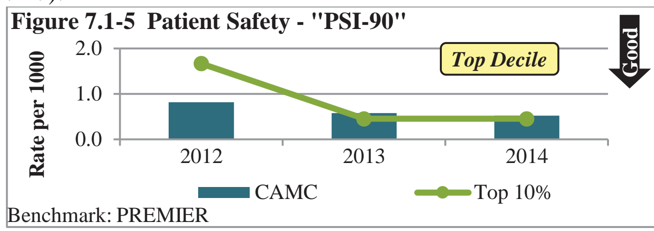
Figure 7.1-4 Healthgrades Star Ratings

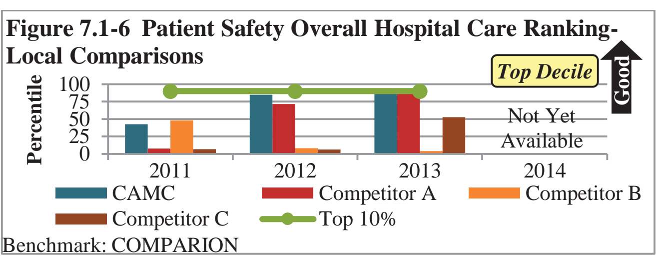
Conditions/Procedures	CAMC	Competitors A (Local)	Competitors G (State)	Competitors F (Regional)
Coronary Interventions	5 Stars	3 Stars	1 Star	1 Star
Heart Attack	5 Stars	3 Stars	1 Star	3 Stars
Heart Failure	5 Stars	3 Stars	5 Stars	3 Stars
Pulmonary Embolism	5 Stars	3 Stars	3 Stars	3 Stars
Sepsis	5 Stars	5 Stars	3 Stars	1 Star
Esophageal/Stomach Surgeries	5 Stars	3 Stars	3 Stars	3 Stars
Colorectal Surgeries	5 Stars	3 Stars	3 Stars	3 Stars
Stroke	5 Stars	3 Stars	3 Stars	3 Stars
Neurosurgery	5 Stars	NR	5 Stars	3 Stars
Hip Replacement	5 Stars	3 Stars	1 Star	NR
Prostate Removal Surgery	5 Stars	NR	1 Star	3 Stars
COPD	5 Stars	3 Stars	5 Stars	5 Stars
Pneumonia	5 Stars	3 Stars	3 Stars	3 Stars

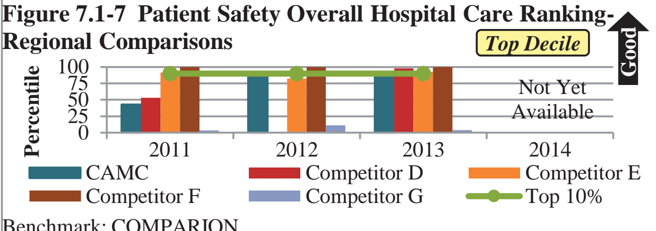
Legend: 5 Stars = Better than Expected 3 Stars = As Expected
1 Star = Worse Than Expected NR = No Rating
Other Local and Regional Competitors AOS

Industry & Benchmark Leadership

PSI-90 is a composite of 8 AHRQ Patient Safety Indicators (defined by diagnoses codes per AHRQ). Each indicator is assigned a weight and combined to form the composite. This composite is used as a part of the overall score for Value Based Purchasing. CAMC patient safety results achieved overall top decile performance compared to both the Premier (Figure 7.1-5) and Comparion benchmarks (Figures 7.1-6 and 7.1-7).







CAMC also has top decile performance for complications overall, outperforms local competitors, and outperforms all but one regional competitor (Figures 7.1-8 and 7.1-9), and has improving trends. In addition, CAMC is not subject to the Hospital Acquired Condition penalty in FY 2015 according to analysis by Modern Healthcare.

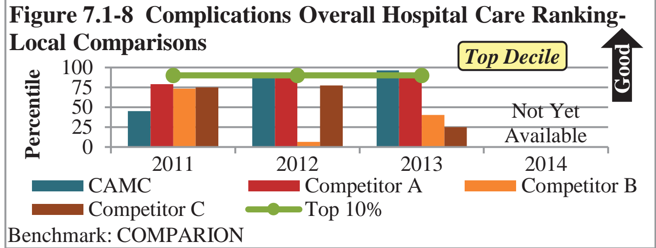


Figure 7.1-8 Complications Overall Hospital Care Ranking-Local Comparisons

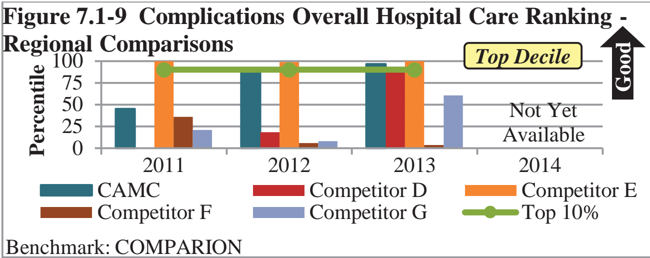


Figure 7.1-9 Complications Overall Hospital Care Ranking - Regional Comparisons

Health Care Outcomes – Mortality – Inpatient

In the end, the ultimate health care outcome is whether patients live or die under our care. At CAMC and through the work of the CAMCHS entities, our observed to expected mortality is **0.6** and the expected is **1.0**. This means that for every 100 patients we care for, 40 are discharged to their families and friends who would not have lived in the "average" hospital. **This translates to 1,613 lives saved from 2011 to 2014.** (Figures 7.1-10 and 7.1-11)

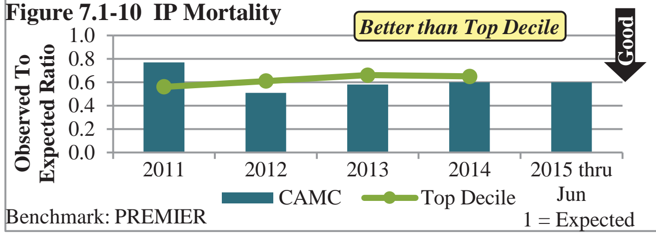


Figure 7.1-10 IP Mortality

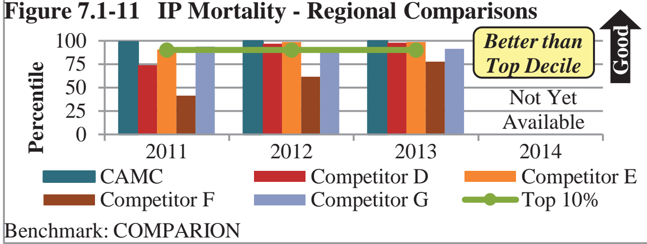


Figure 7.1-11 IP Mortality - Regional Comparisons

Mortality – Emergency Patients

CAMC ED Trauma mortality compares favorably to the National Trauma Databank benchmark. There is no top decile ranking provided for this benchmark (Figure 7.1-12).

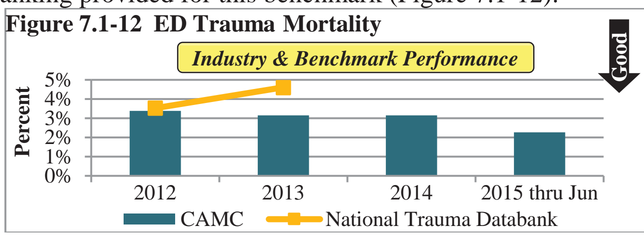


Figure 7.1-12 ED Trauma Mortality

Health Care Outcomes - Segmented By Service Lines (Figure P.1-1) Cardiovascular, Medicine, Surgery, Trauma, Mother/Baby.

(*Please see P.2a(3) limitation for hospital segmentation due to provider number.*)

Figure 7.1-13 shows cardiovascular quality outcomes from Comparion for cardiovascular heart failure care as compared to all hospitals nationwide. Cardiovascular services are provided at CAMC Memorial Hospital.

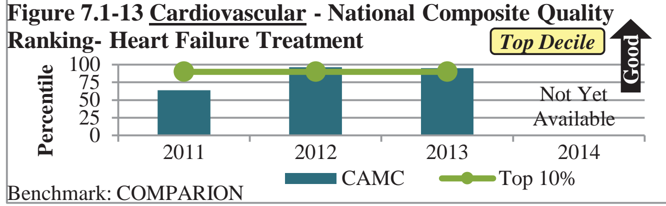


Figure 7.1-13 Cardiovascular - National Composite Quality Ranking- Heart Failure Treatment

Figures 7.1-14 and 7.1-15 show CAMC in the top decile for overall heart failure mortality and exceeding performance of local and regional competitors.

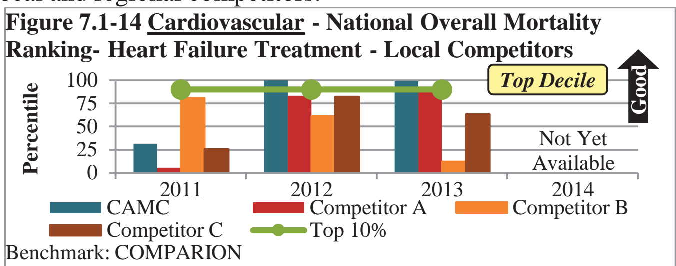


Figure 7.1-14 Cardiovascular - National Overall Mortality Ranking- Heart Failure Treatment - Local Competitors

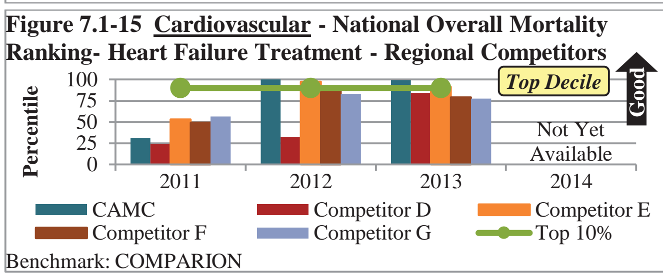


Figure 7.1-15 Cardiovascular - National Overall Mortality Ranking- Heart Failure Treatment - Regional Competitors

Figures 7.1-16 and 7.1-17 show top decile performance and continued improvement with trends for medicine quality and mortality for this diverse group of patients served at CAMC General and CAMC Memorial Hospitals. CAMC Teays Valley will be included in 2014 numbers when available.

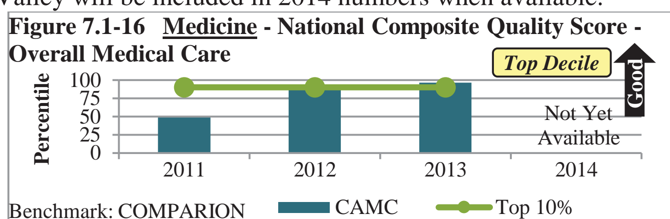


Figure 7.1-16 Medicine - National Composite Quality Score - Overall Medical Care

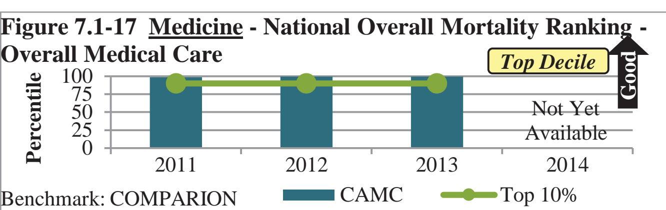


Figure 7.1-17 Medicine - National Overall Mortality Ranking - Overall Medical Care

Surgery also performs at the top decile in both quality and mortality (Figures 7.1-18 and 7.1-19). Surgery services are provided at CAMC General, Memorial, Women and Children's and Teays Valley Hospitals.

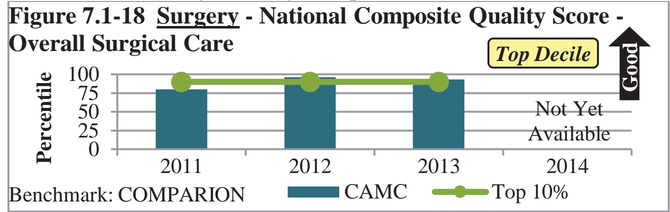


Figure 7.1-18 Surgery - National Composite Quality Score - Overall Surgical Care

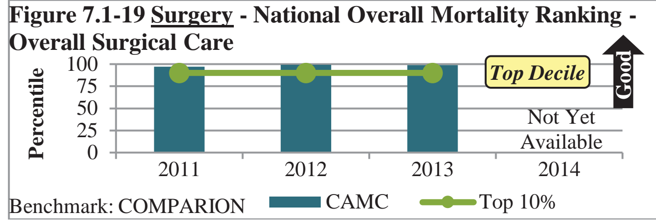


Figure 7.1-19 Surgery - National Overall Mortality Ranking - Overall Surgical Care

Our trauma/neuroscience/orthopedic service line quality and mortality outcomes in Figures 7.1-20 to 7.1-22 show continued improvement trends and top decile performance. A cycle of learning has been the use of Intensivists and having a trauma attending in-house 24/7 to manage critical patients. Trauma services are provided at CAMC General Hospital.

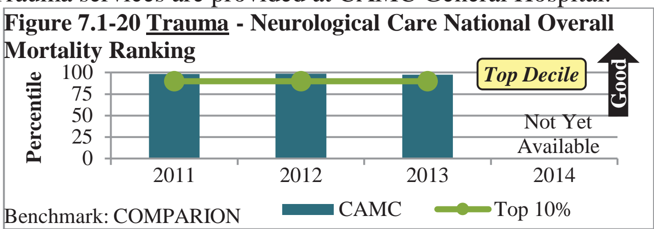


Figure 7.1-20 Trauma - Neurological Care National Overall Mortality Ranking

We have employed dedicated orthopedic trauma surgeons to support the trauma system and provide ready access for complicated traumatic injuries supporting our achievement of top decile performance (Figures 7.1-21 and 7.1-22).

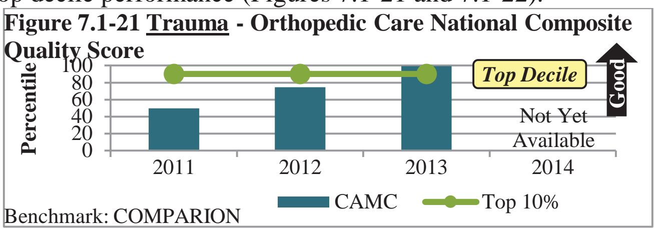


Figure 7.1-21 Trauma - Orthopedic Care National Composite Quality Score

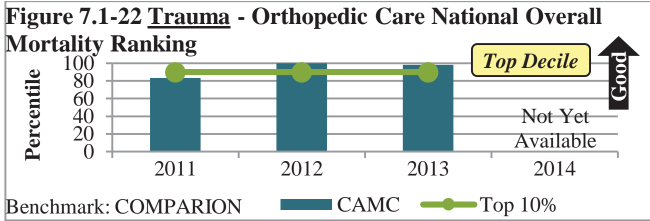


Figure 7.1-22 Trauma - Orthopedic Care National Overall Mortality Ranking

Figures 7.1-23 and 7.1-24 demonstrate top decile performance for the Mother/Baby service line at CAMC Women and Children's Hospital.

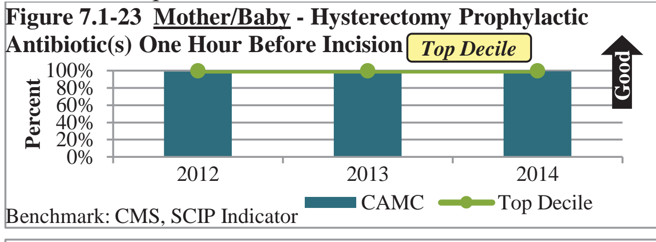


Figure 7.1-23 Mother/Baby - Hysterectomy Prophylactic Antibiotic(s) One Hour Before Incision

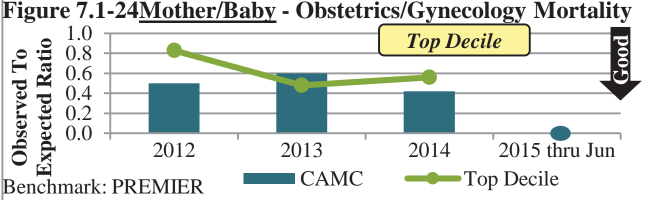


Figure 7.1-24 Mother/Baby - Obstetrics/Gynecology Mortality

Health Outcomes for Key Measures that are Publicly Reported and/or Mandated by Regulators, Accreditors, or Payors

Some of the many indicators reported to CMS are listed below. Figures 7.1-25 – 7.1-28 illustrate measures that were submitted as a part of the CMS Surgical Care Improvement Project. Prophylactic antibiotics prior to incision help reduce the risk of infection as does the appropriate antibiotic selection and removal of catheter post-operatively. Our results show continued or sustained improvement to top decile performance.

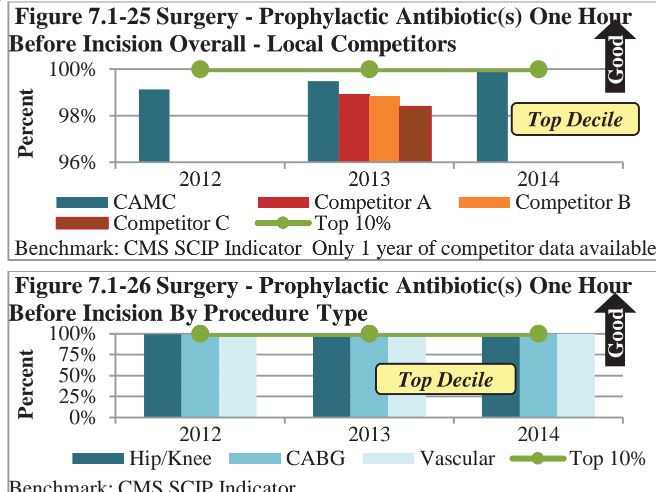


Figure 7.1-25 Surgery - Prophylactic Antibiotic(s) One Hour Before Incision Overall - Local Competitors

Figure 7.1-26 Surgery - Prophylactic Antibiotic(s) One Hour Before Incision By Procedure Type

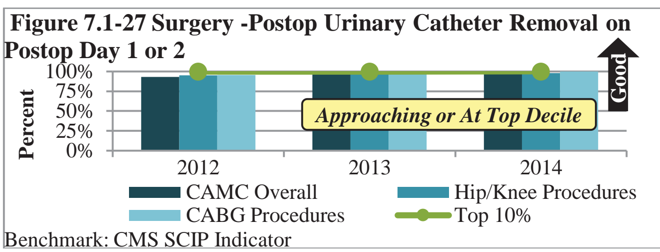


Figure 7.1-27 Surgery -Postop Urinary Catheter Removal on Postop Day 1 or 2

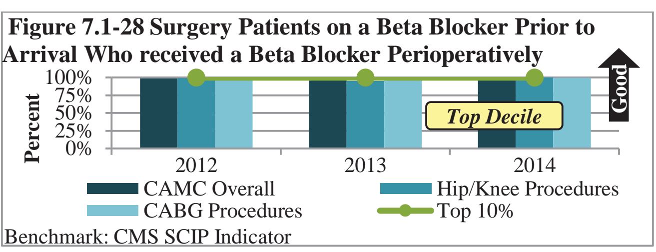


Figure 7.1-28 Surgery Patients on a Beta Blocker Prior to Arrival Who received a Beta Blocker Perioperatively

CAMC reports data to the CDC's NHSN. Figure 7.1-29 shows our continuous improvement in reducing the incidence of central line blood stream infections for Trauma.

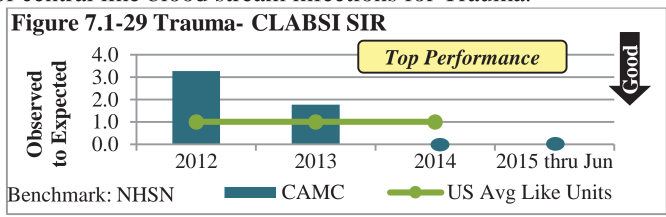


Figure 7.1-29 Trauma- CLABSI SIR

7.1a (Continued) Health Care and Customer-Focused Service Results

(Figure P.1-4 describes our patient groups (IP, OP and ED). Results are provided for each of the groups by their key requirements.

IP Key Requirement - High Quality/Safe Care

A process to keep patients safe is administration of the pneumococcal vaccine. Figure 7.1-30 shows results of our improvement processes and supports our post-discharge key work process.

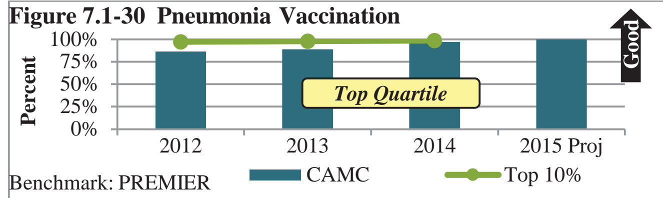


Figure 7.1-30 Pneumonia Vaccination

Compliance with composite scores also addresses high quality and safe care key requirements of our patients. Our stroke composite (Figure 7.1-31) shows continued improvement over the past 3 years. As a result, the American Stroke Association recognized CAMC with the 2014 Gold Plus Award.

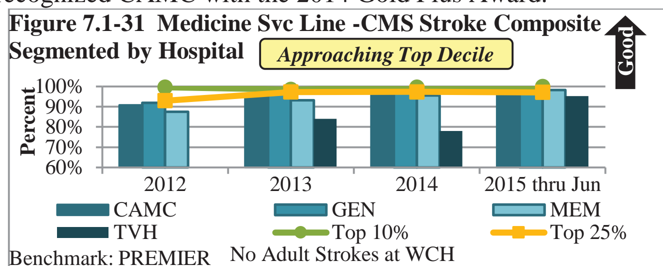


Figure 7.1-31 Medicine Svc Line -CMS Stroke Composite Segmented by Hospital

Early removal of urinary catheters improves patient safety by decreasing the incidence of infection. Figure 7.1-32 shows continued improvement in this process.

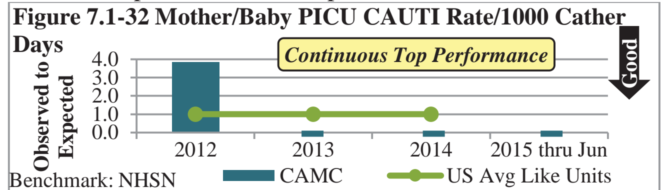


Figure 7.1-32 Mother/Baby PICU CAUTI Rate/1000 Cather Days

To help provide safe asthma care, inhaled medication relievers are used in pediatric patients. Figures 7.1-33 and 7.1-34 show adherence to evidence based care standards for these children.

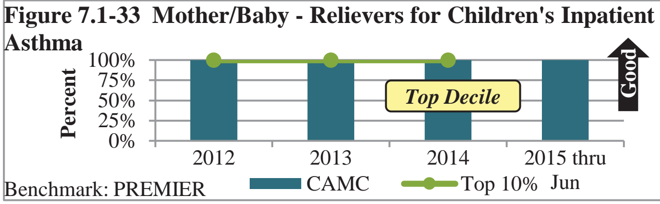


Figure 7.1-33 Mother/Baby - Relievers for Children's Inpatient Asthma

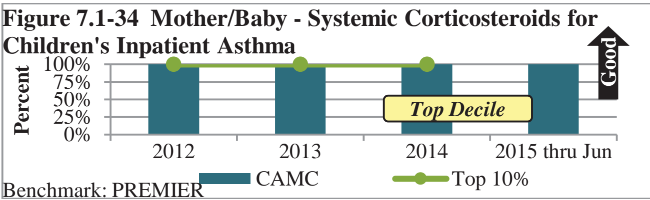


Figure 7.1-34 Mother/Baby - Systemic Corticosteroids for Children's Inpatient Asthma

The Maternity Practices in Infant Nutrition and Care (mPINC) Survey (Figure 7.1-35) is a biannual national survey of infant feeding and other indicators of best practices in maternity care settings. CAMC's results are better than national benchmark (top decile performance is not provided).

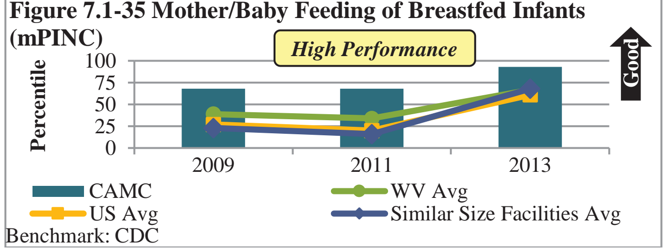


Figure 7.1-35 Mother/Baby Feeding of Breastfed Infants (mPINC)

Tobacco use is a top health risk for our service area. We are working to decrease tobacco use through community health efforts in education, prevention and policy change. In addition, we counsel our inpatients regarding smoking cessation. We are a top performer as shown in Figure 7.1-36.

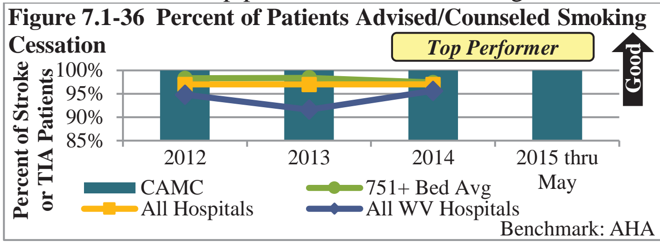


Figure 7.1-36 Percent of Patients Advised/Counseled Smoking Cessation

OP Key Requirement – High Quality, Safe Care

Figures 7.1-37 and 7.1-38 address the high quality/safe care key requirement of our outpatients using our surgery services.

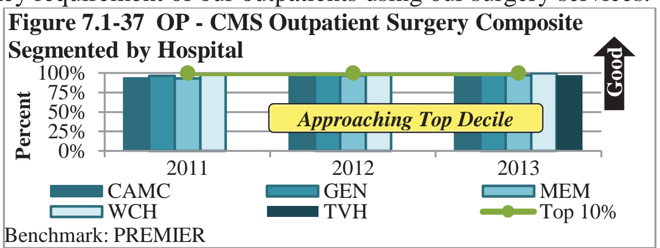


Figure 7.1-37 OP - CMS Outpatient Surgery Composite Segmented by Hospital

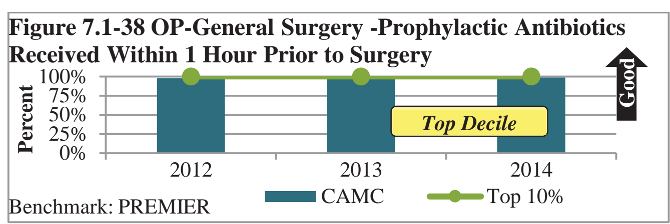


Figure 7.1-38 OP-General Surgery -Prophylactic Antibiotics Received Within 1 Hour Prior to Surgery

Breast cancer treatment showed 100% compliance with the QOPI protocol for administration of Trastuzamab, a medication to help improve immune functioning in certain cancers (Figure 7.1-39). This meets outpatient cancer patient requirements for high quality/safe care.

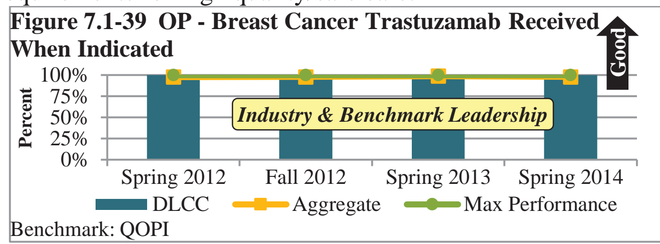


Figure 7.1-39 OP - Breast Cancer Trastuzamab Received When Indicated

With the high rate of diabetes in our community, our continued improvement that now exceeds goal demonstrates the quality of care provided to this population (Figure 7.1-40).

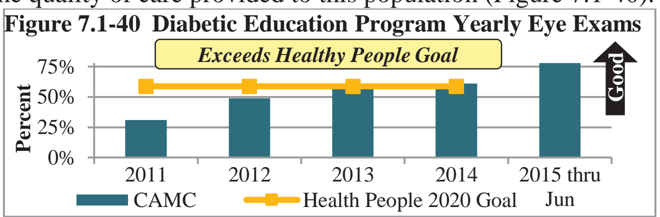


Figure 7.1-40 Diabetic Education Program Yearly Eye Exams

ED Key Requirement – High Quality, Safe Care

CAMC measures length of stay in the Emergency Department as a key component of providing high quality, safe care. The first hour of treatment is shown to impact mortality and we have worked to improve many processes to be able to exceed ACS accreditation benchmarks (Figure 7.1-41).

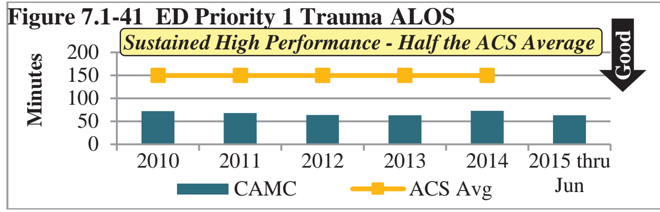


Figure 7.1-41 ED Priority 1 Trauma ALOS

IP Key Requirement – Communication/Respect

Communication and respect are key customer requirements for our inpatients (Figure P.1-4). Nursing communication with patients (Figure 7.2-6) shows continuous improvement and is approaching top quartile performance.

Respectful attitude is measured by the questions regarding how *nurses and doctors treat patients with courtesy and respect* (Figures 7.2-4 and 7.2-5), both showing favorable trends. To accomplish this, our focus has been on increasing nurse time at the bedside (Figure 7.1-45) by using the improvement system to improve care processes and through staff training as shown in Figure 7.1-42.

Figure 7.1-42 Communication and Respect Training

Training Program	2012	2013	2014	2015 thru Mar	2015 thru Aug
AIDET	NA	79.9%	90.9%	66.0%	97.5%
Service Excellence	NA	NA	40.8%	83.6%	91.1%
Crucial Conversations	100%	100%	100%	100%	100%
Best Place To Learn					

OP Key Requirement – Communication

Communication is a key requirement for our outpatients. A key area involves medications. Figures 7.1-43 and 7.1-44 illustrate results of our process improvements whereby all patients receive a copy of their medications at each visit and achievement of 100% medication reconciliation.

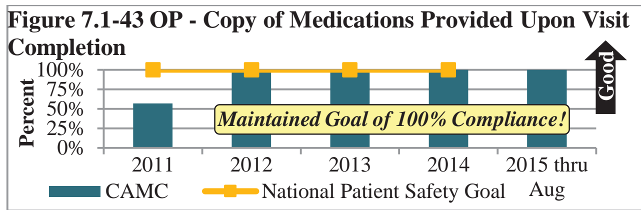


Figure 7.1-43 OP - Copy of Medications Provided Upon Visit Completion

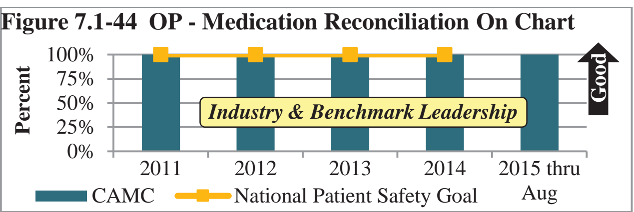


Figure 7.1-44 OP - Medication Reconciliation On Chart

IP Key Requirement – Responsiveness/Timeliness

To address the responsiveness and timeliness key inpatient requirement, we implemented TCT (a Lean effort) on all nursing units. This has resulted in a 10% improvement in the amount of time nurses spend at the bedside (Figure 7.1-45) and exceeds the IHI top quartile.

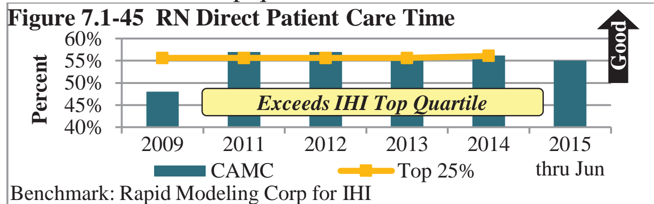


Figure 7.1-45 RN Direct Patient Care Time

OP Key Requirement – Timeliness

Timeliness of results is important to our outpatients. We have addressed this through improving notification for critical outpatient lab studies. We have sustained high performance at 100% (Figure 7.1-46) for the last 4 years.

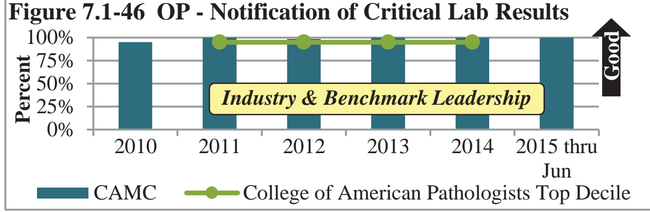


Figure 7.1-46 OP - Notification of Critical Lab Results

All pap results are reconciled 100% (Figure 7.1-47), supporting the outpatient timeliness key requirement and has been sustained for 4 years.

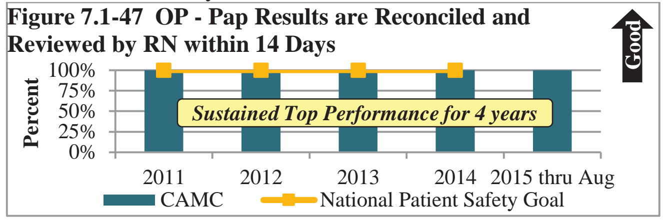


Figure 7.1-47 OP - Pap Results are Reconciled and Reviewed by RN within 14 Days

CAMC also outperforms local competitors and the available benchmark for ultrasound follow-up for suspicious mammogram findings (Figure 7.1-48).

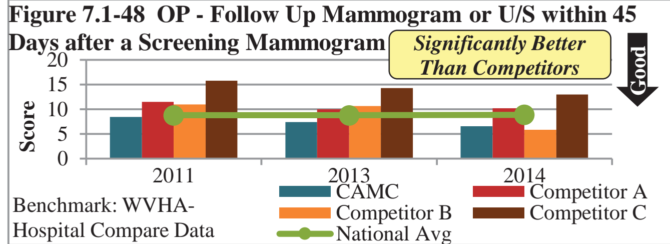


Figure 7.1-48 OP - Follow Up Mammogram or U/S within 45 Days after a Screening Mammogram

ED Key Requirement – Timeliness

Figure 7.1-49 shows the door to drug time for stroke patients who are eligible for tPA. Despite the geographic distance within our service area, we show an improving trend and compare favorably to the benchmark due to process improvements for e-alerts, CT timeliness and neurologist notification.

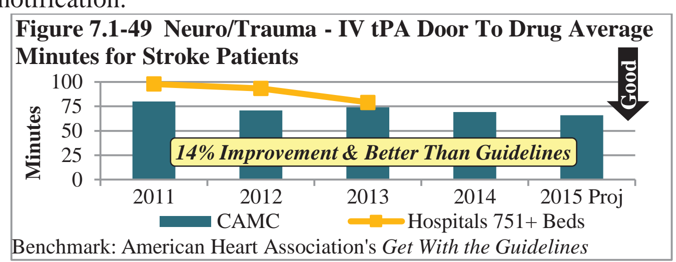


Figure 7.1-49 Neuro/Trauma - IV tPA Door To Drug Average Minutes for Stroke Patients

CAMC exceeds the trauma requirement for timely response to Priority I patients (30 minute response). CAMC has 24/7 in-house trauma attending staff available and exceeds the ACS requirement and patient requirement for timely care (Figure 7.1-50).

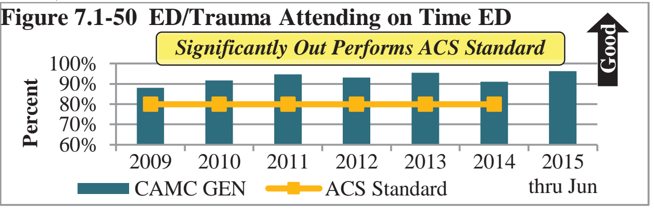


Figure 7.1-50 ED/Trauma Attending on Time ED

7.1a Continued

Other Customer Service Process Results

(In Figure P.1-4, we describe our other customers as community and payors and include their key

requirements. Community requirements include access to care and health improvement. Payor requirements include cost effective and high quality care).

Results that address our community requirements for access to care and health improvement are demonstrated by our Potentially Avoidable Admissions Rate (Figure 7.1-51). PAA is an indicator of effective disease management in the community, representing a set of conditions (AHRQ, PQI indicators) for which a hospitalization could have been prevented if better managed in the ambulatory setting. CAMC's PAA rate is reflective of the work we do with our system of care to prevent these avoidable admissions.

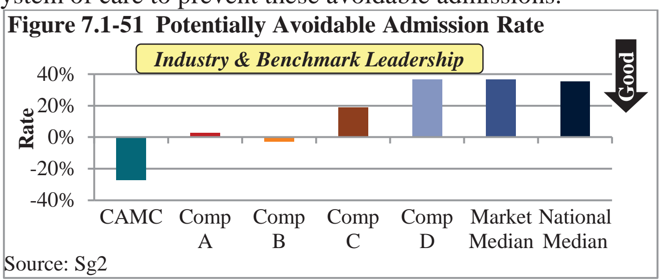


Figure 7.1-51 Potentially Avoidable Admission Rate

Payor requirements for cost effective care are demonstrated in Figures 7.5-2, 7.5-3, 7.5-5 and for overall high quality care in Figures 7.1-1 to 7.1-4.

7.1b Work Process Effectiveness Results

7.1b(1) Process Effectiveness & Efficiency Results

(Figure 6.1-2 describes our key work processes defined as preadmission/admission; treatment; discharge; and post discharge. Operational performance results for these key work processes are described with the measures labeled in the Legend below.)

Legend (all results):

Work Process	
▲ Productivity	● Efficiency (In-Process)
◎ Cycle Time	◆ Innovation
■ Effectiveness (Outcomes)	

Preadmission/Admission

Improvement of preadmission processes has improved our outpatient appointment scheduling times and we are rapidly approaching IHI best practice (Figures 7.1-52 to 7.1-53).

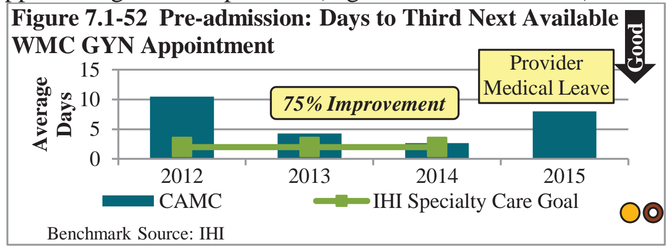


Figure 7.1-52 Pre-admission: Days to Third Next Available WMC GYN Appointment

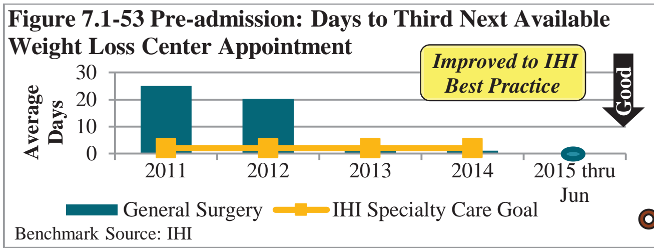


Figure 7.1-53 Pre-admission: Days to Third Next Available Weight Loss Center Appointment

CAMC's investment in financial counselors has resulted in continuous improvement of the conversion rate of uninsured inpatients to a payor source. This supports our customer engagement focus (Figure 7.1-54).

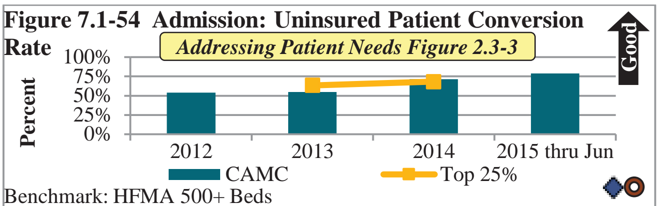


Figure 7.1-54 Admission: Uninsured Patient Conversion Rate

Treatment

Medication delivery and medication safety effectiveness is monitored by our Medication Accuracy Checking (MAK) process. MAK is a forcing function for the "5 Rights" and Figure 7.1-55 demonstrates >98% accuracy for all medications delivered. Some medications are unable to be delivered by this process; otherwise we would be 100%.

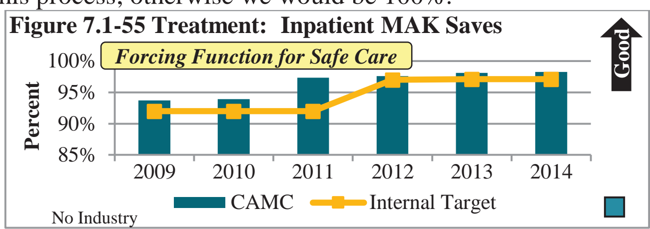


Figure 7.1-55 Treatment: Inpatient MAK Saves

CAMC, through a cycle of learning, has reduced blood usage resulting in >30% improvement (an innovation) as shown in Figure 7.1-56.

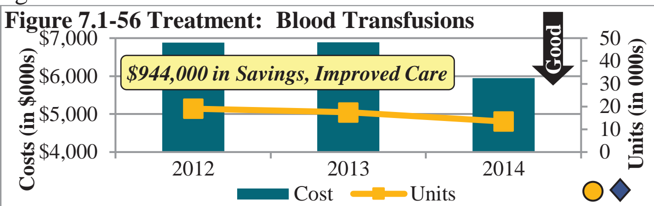


Figure 7.1-56 Treatment: Blood Transfusions

High concentration of oxygen is harmful to premature infant lungs. Our NICU physicians have reduced the oxygen concentration through a number of process changes and lowered the incidence of chronic lung disease in these infants resulting in CAMC being a top performer nationally (Figure 7.1-57).

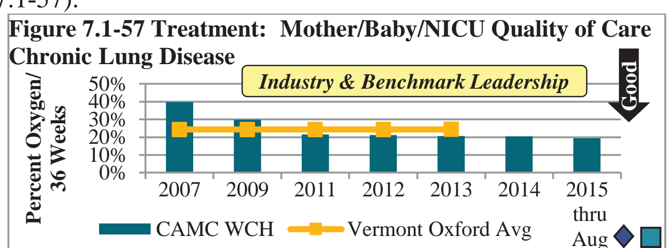


Figure 7.1-57 Treatment: Mother/Baby/NICU Quality of Care Chronic Lung Disease

Outpatient chemotherapy treatment plan (Figure 7.1-58) shows 100% compliance with the QOPI top benchmark for Chemotherapy Infusion Centers. CAMC was the first cancer center in WV to be QOPI certified in 2011.

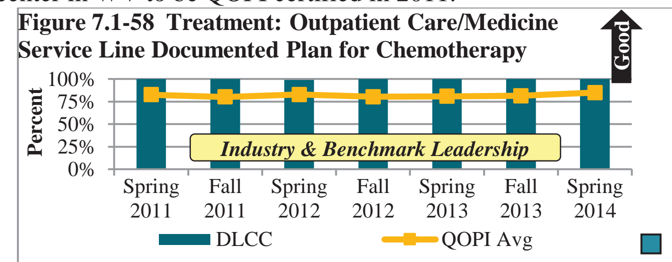
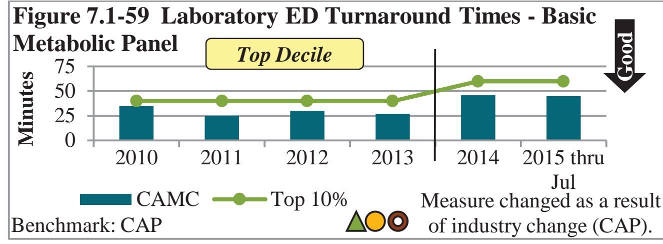
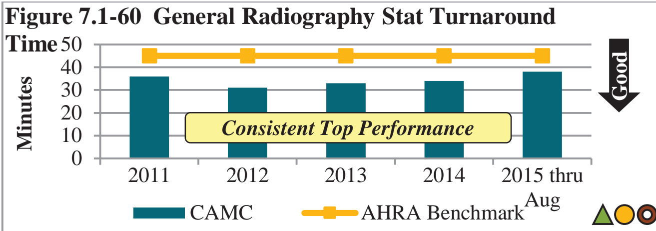


Figure 7.1-58 Treatment: Outpatient Care/Medicine Service Line Documented Plan for Chemotherapy

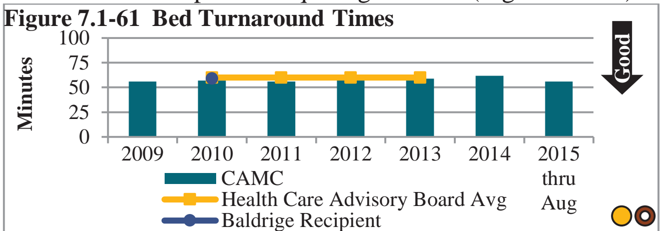
ED treatment efficiency and cycle time related to laboratory TAT is top decile (Figure 7.1-59) and radiology stat times (Figure 7.1-60) exceed the AHRA benchmark resulting in timely care for our patients.



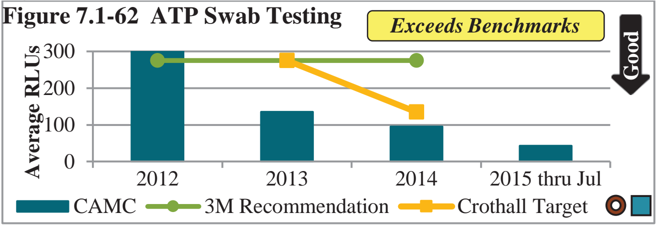


Discharge

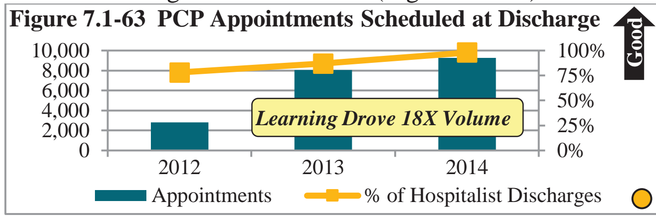
Discharge processes include bed turnaround times to facilitate access for the next patient requiring services (Figure 7.1-61).



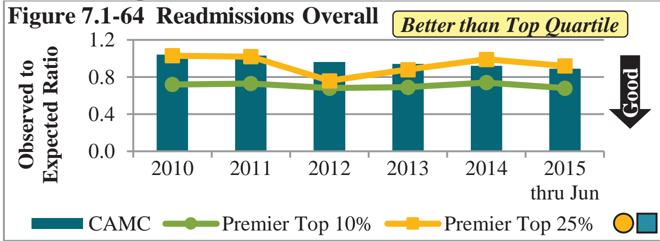
The ATP test allows us to rapidly measure actively growing microorganisms to detect infection that may remain after room cleaning. This test improves cycle time and effectiveness (Figure 7.1-62).



Analysis showed that many of our patients were not seeing their PCP in a timely manner following discharge. To address this problem, we began scheduling PCP appointments prior to the patient being discharged (Figure 7.1-63) improving patient care and reducing our readmissions (Figure 7.1-64).



Post Discharge



7.1b(1) Continued - Key Support Processes (Figure 6.1-2)

Figure 7.1-65 Key Support Process Effectiveness and Efficiency

Figure #	KEY SUPPORT PROCESSES and Result Figure Name	Efficiency	Effectiveness
MEDICATION MANAGEMENT			
7.1-68	Comprehensive Pharmacy Services	X	X
7.1-69	Pharmacy – AcuDose Stock to Refill	X	
7.1-70	Pharmacy – IV Waste	X	X
HOUSEKEEPING BED CLEANING			
7.1-61	Bed Turnaround Times	X	
7.1-62	ATP Swab Testing		X
PRODUCT ACQUISITION			
7.1-71	MHC Inventory Fill Rates		X
7.1-72	MHC Inventory Turns	X	
7.1-73	JLL Savings	X	X
NETWORK AVAILABILITY			
7.1-67	IT Managed Services Metrics	X	X
WORKFORCE ENGAGEMENT			
7.3-5 & 6	Employee and Nursing Turnover	X	
7.3-7	Time to Fill Positions	X	
REVENUE CYCLE			
7.5-9	Excess Revenue Over Expenses	X	
7.5-7	Days in Accounts Receivable		X
WORKFORCE DEVELOPMENT			
7.3-2	Onboarding Inservices and Education	X	
7.3-32	Internal Leadership Promotions		X

Note: Productivity, Cycle Time and Innovation noted on Individual Figures

7.1b(2) Emergency Preparedness

We consistently exceed preparedness for emergency and disaster requirements as shown in Figure 7.1-66. Segmentation by location and site is AOS.

Figure 7.1-66 CAMCHS Emergency Preparedness

Emergency Type	2011	2012	2013	2014	Number Required
Fire Drills	63	70	60	77	48
Emergency Preparedness Exercises	3	2	3	4	2
Code Amber Drills	4	4	4	6	2
Community/Regional Exercises	2	1	1	1	1

Regulatory Requirements Exceeded

7.1c Supply-Chain Management Results

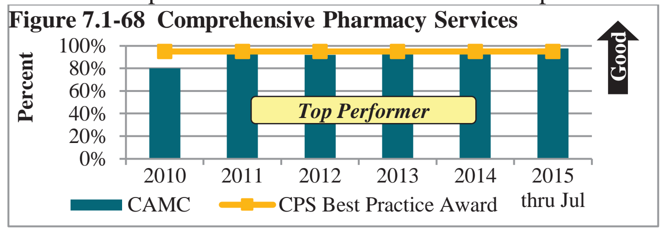
Figures 7.1-67 – 7.1-73 demonstrate how our partners and suppliers work with us to enhance our patient and other customer satisfaction and improve patient care delivery. IT services are vital to the successful operation of all components of our organization. Figure 7.1-67 shows performance compared to our contract.

Figure 7.1-67 Siemens/Cerner IT Managed Services Metrics

IT Emergency Readiness Managed Services Metrics	Siemens Service Metric	2012	2013	2014
Help Desk Customer Survey	4.5 / 5.0	4.77	4.80	4.70
Help Desk First Contact Resolution	90%	99.27%	98.82%	98.61%
Network Availability	99%	99.71%	99.79%	99.95%
Server Availability	99%	99.93%	99.87%	99.83%
Problem Priority 1 (4 hours)	80%	94.87%	95.40%	94.29%

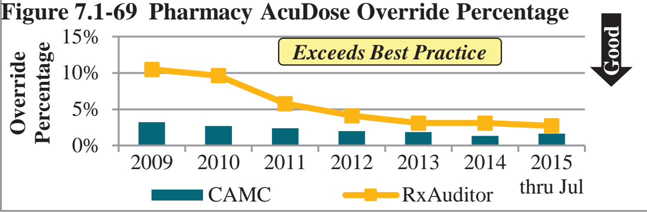
Exceeds Siemens National Comparisons

Figure 7.1-68 provides a "comprehensive, objective assessment of pharmaceutical services at client hospitals".



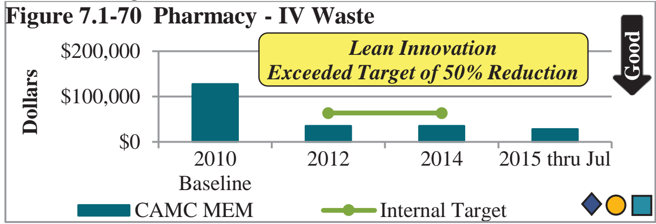
This analysis includes regulatory, administrative, operational, clinical, financial and customer service areas. CPS operations at CAMC achieved their top performer award. One example is shown in Figure 7.1-69.

Figure 7.1-69 Pharmacy AcuDose Override Percentage



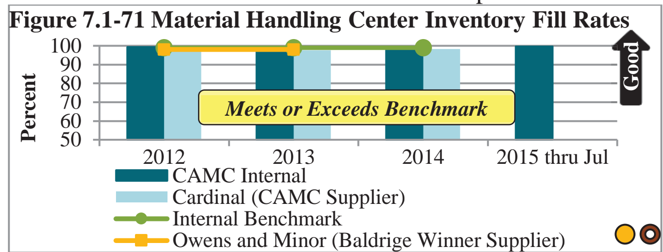
CAMC innovation efforts utilized the lean methodology to eliminate batching in the production line for IV pharmacy medication. This has eliminated waste and saved over $250,000 (Figure 7.1-70).

Figure 7.1-70 Pharmacy - IV Waste



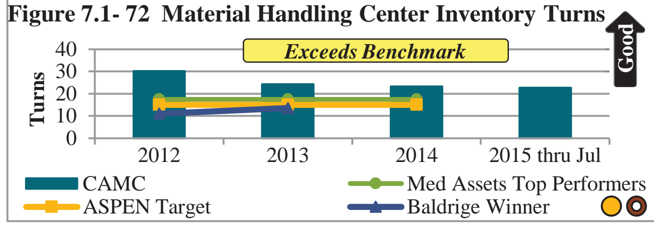
The key customer of our Material Handling Center is CAMC HS departments. Figure 7.1-71 shows our Material Handling Center's fill rate of 99.54% to our internal departments.

Figure 7.1-71 Material Handling Center Inventory Fill Rates



The Material Handling Center has achieved better than Med Assets top performer status for inventory turns (Figure 7.1-72). Our negative trend is the result of a deliberate decision to achieve cost savings from Cardiac Cath Lab bulk ordering. These cost savings outweighed the decrease in inventory turns, leaving us still performing above top performance.

Figure 7.1- 72 Material Handling Center Inventory Turns



Our CAMCHS partnership with JLL has resulted in the opportunity to develop, share and learn best practices in addition to cost savings (Figure 7.1-73). Best practices submitted from CAMC and implemented by JLL include Crane Permit, Capital Planning Workbook and Healthcare Merger or Acquisition real estate initiative.

Figure 7.1-73 JLL Savings to CAMC

Item	2013 Savings	2013 Savings %	2014 Savings	2014 Savings %
PMA/Purchased Services	$369,860	4%	$822,162	8%
Cost Avoidance	$155,000	13%	Not Available	
Demand Management	$335,757	4.4%	$330,000	5.9%
Negotiated Savings	$76,500	15%	Not Available	
Capital/Construction Savings	$510,343	6%	$350,790	17%
Total	**$966,064**	**8%**	**$1,502,952**	**11%**
Partnership Enhancing Our Performance				

Our work with Morrison is described in 1.2c(1) through our joint work with the Ford and Greater Kanawha Valley Foundations to support local growers for wealth creation.

7.2 Customer-Focused Results

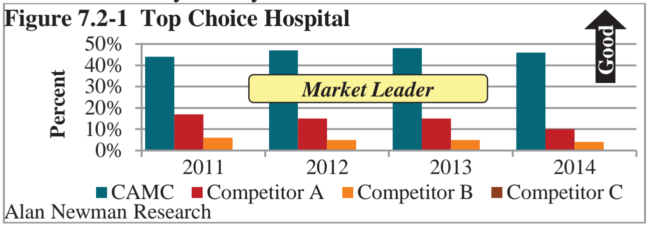
7.2a Patient- and Other Customer-Focused Results

7.2a (1) Patient and Other Customer Satisfaction

Community and Payor Satisfaction

Figure 7.2-1 reflects the effectiveness of our customer focus and relationship building strategies (Figure 3.2-3). CAMC is a market and benchmark leader as the top choice hospital based on our community survey.

Figure 7.2-1 Top Choice Hospital



A measure of payor satisfaction is their willingness to do business with us. Of our seven major payors, three have ongoing contracts, one with a 5-year contract and three with a 3-year contract renewal (AOS) indicating strong partnerships with our payor groups.

Inpatient Satisfaction

Figure 7.2-2 shows that our inpatient overall satisfaction segmented by hospital rating on HCAHPS is approaching top quartile performance and exceeding regional comparisons as well as 2 out of 3 local competitors (Figure 7.2-3). In part, the high acuity level of our patients and inherent complexity of care involved in a tertiary hospital such as CAMC is a factor that studies have shown to drive a lower HCAHPS score. CAMC Teays joined the CAMCHS in March 2014 and we are deploying improvement strategies there.

Figure 7.2-2 HCAHPS Overall Satisfaction (% 9-10)

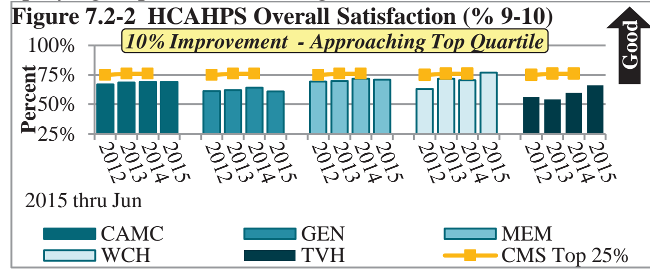
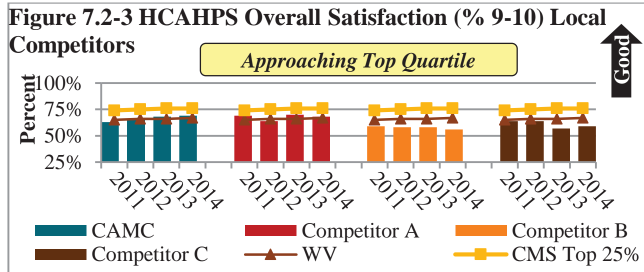


Figure 7.2-3 HCAHPS Overall Satisfaction (% 9-10) Local Competitors



Cycles of learning from our customer communication and response system (Figure 3.1-1) and our VOC listening posts (Figure 3.1-2) led to the identification of the value of *respect* as a key driver for customer satisfaction. Results from our system wide campaign to hardwire the value of *respect* show an improvement for our nursing and physician HCAHPS ratings on courtesy and respect which are at top decile performance (Figures 7.2-4 and 7.2-5).

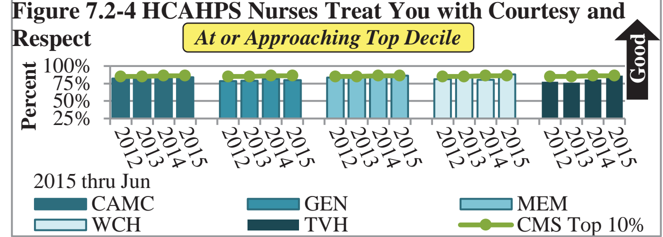


Figure 7.2-4 HCAHPS Nurses Treat You with Courtesy and Respect

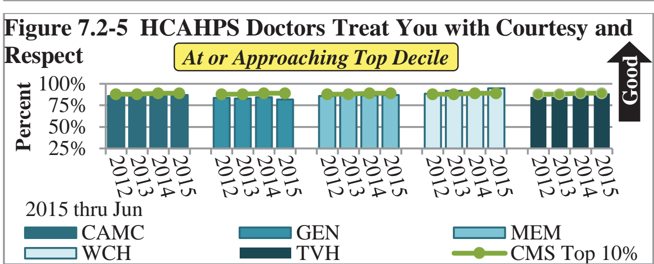


Figure 7.2-5 HCAHPS Doctors Treat You with Courtesy and Respect

From our analysis of listening post data (Figure 3.1-2), we recognized that communication is a key factor in addressing our customers' expectations and has a high correlation with multiple measures in associated performance gains. Nursing communication with patients (Figure 7.2-6) shows continuous improvement and is approaching top quartile performance.

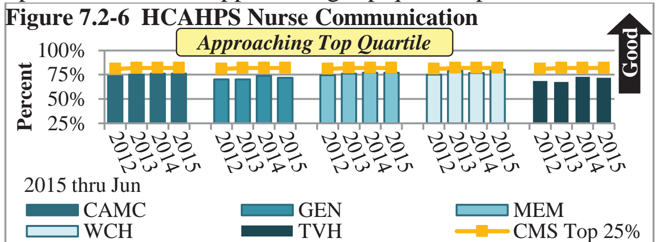


Figure 7.2-6 HCAHPS Nurse Communication

Improvements with our discharge instruction process to ensure that patients have the verbal and written information they need to safely manage their care at home (Figure 7.2-7) have resulted in corresponding improvements in reducing our rate of readmission (Figure 7.1-64).

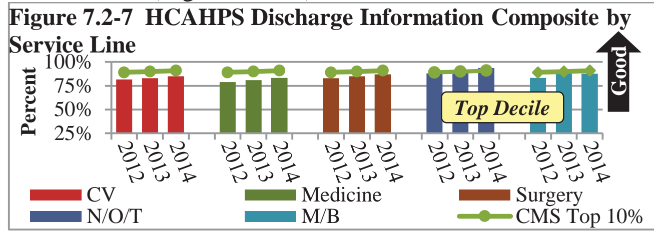


Figure 7.2-7 HCAHPS Discharge Information Composite by Service Line

Inpatient Dissatisfaction

We take a proactive approach to identifying sources of dissatisfaction with our processes and determine leading rather than lagging measures that address our key customer requirements and minimize complaints. Based on our analysis of VOC data (Figure 3.1-2), key drivers of dissatisfaction were staff attitude and responsiveness. Figure 7.3-29 (Employees Living the Values) and Figures 7.2-8 to 7.2-10 show the effectiveness of our complaint management process (Figure 3.2-4).

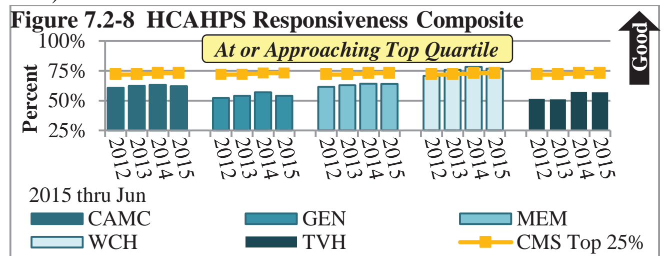


Figure 7.2-8 HCAHPS Responsiveness Composite

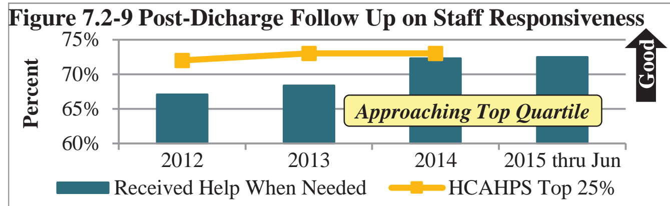


Figure 7.2-9 Post-Dicharge Follow Up on Staff Responsiveness

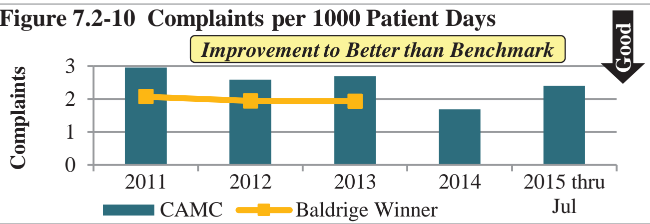


Figure 7.2-10 Complaints per 1000 Patient Days

Outpatient Satisfaction

CAMC is a voluntary and early participant of the Outpatient CAHPS survey. To date, the CAHPS survey has been implemented in CAMC ambulatory service areas and cycles of learning from this process have identified areas of focus and driven process improvements for customer satisfaction in all outpatient segments. Results from the OP survey and CAHPS (Figures 7.2-11 to 7.2-14) reflect positive trends in all outpatient areas on satisfaction with key requirements. We also compare favorably with the top decile performance of healthcare Baldrige recipients and CMS benchmarks.

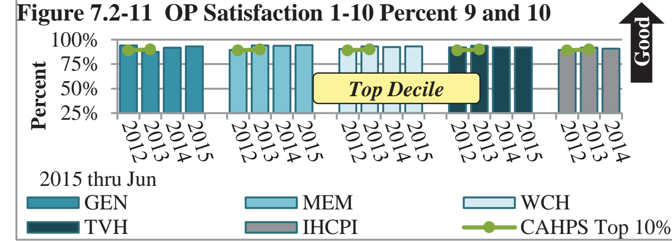


Figure 7.2-11 OP Satisfaction 1-10 Percent 9 and 10

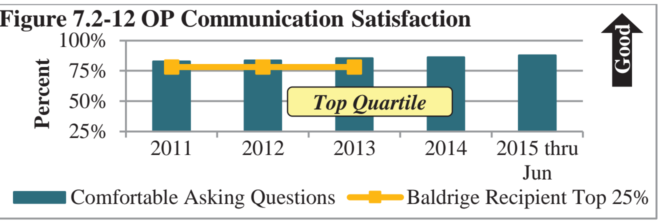


Figure 7.2-12 OP Communication Satisfaction

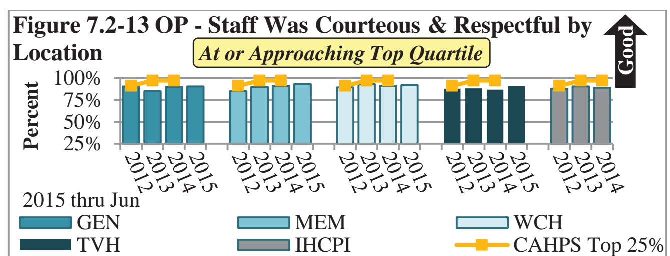


Figure 7.2-13 OP - Staff Was Courteous & Respectful by Location

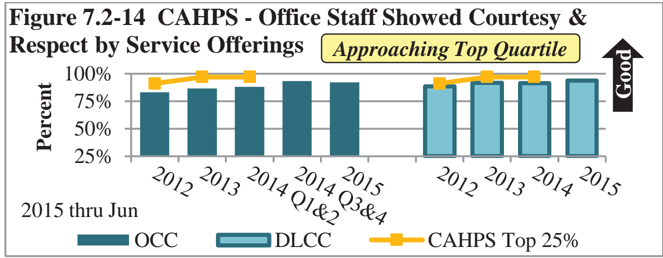


Figure 7.2-14 CAHPS - Office Staff Showed Courtesy & Respect by Service Offerings

OP Dissatisfaction

Wait times and communication were identified as key areas of dissatisfaction in the outpatient areas from analysis of VOC

data. Figures 7.2-15 to 7.2-17 show significant improvements and positive trends in our efforts to address customer concerns of wait times being too long and issues with communication.

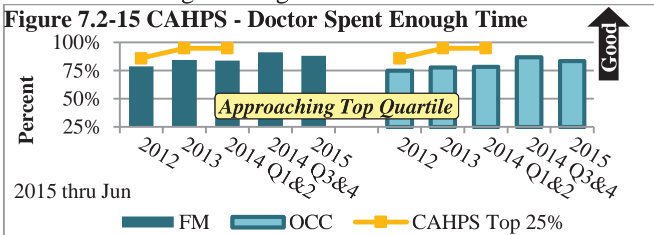


Figure 7.2-15 CAHPS - Doctor Spent Enough Time

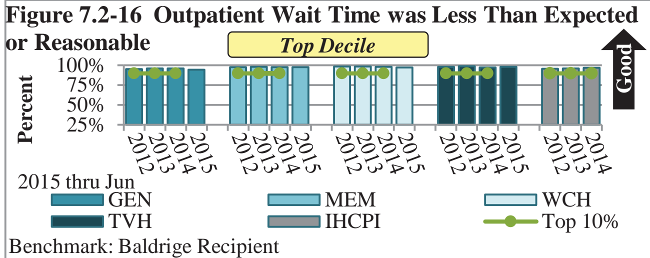


Figure 7.2-16 Outpatient Wait Time was Less Than Expected or Reasonable

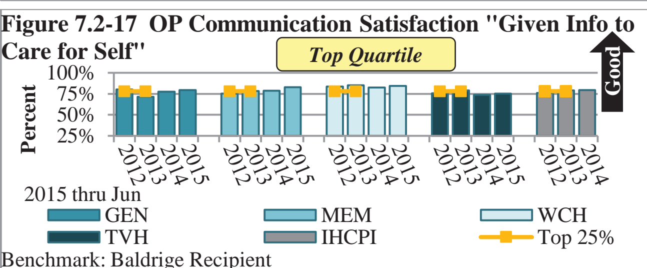


Figure 7.2-17 OP Communication Satisfaction "Given Info to Care for Self"

ED Satisfaction

With nearly 100,000 ED visits per year (double the volume of [redacted], a previous Baldrige award recipient), our patient flow improvements in the ED have resulted in positive outcomes with overall ED satisfaction (Figure 7.2-18).

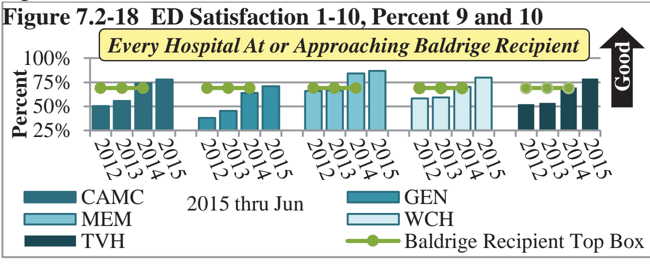


Figure 7.2-18 ED Satisfaction 1-10, Percent 9 and 10

ED Dissatisfaction

A key driver of ED dissatisfaction is wait times based on our analysis of quantitative and qualitative data. Figure 7.2-19 shows improved perception of ED wait times and satisfaction to top decile as a result of our ongoing efforts to improve operational effectiveness with ED/Trauma attending on time (Figure 7.1-50) and ED turnaround times (Figure 7.1-41).

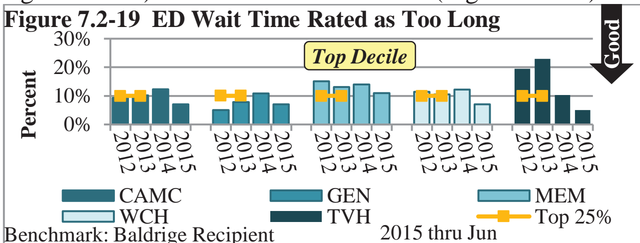


Figure 7.2-19 ED Wait Time Rated as Too Long

7.2a (2) Patient and Other Customer Engagement

Our net promoter score (NPS) (Figure 7.2-20), is a well-tested measure of customer loyalty derived by asking customers how likely they are to recommend the company. Studies show that NPS leaders in their categories have double the growth of their competitors and that loyalty is a better predictor of ongoing customer engagement than other measures. Our NPS reflects how CAMC continues to develop loyal relationships with our stakeholders through the customer relationship strategies described in 3.2b(1).

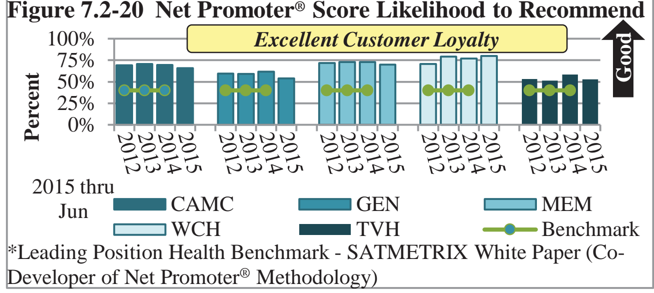


Figure 7.2-20 Net Promoter® Score Likelihood to Recommend

Figures 7.2-21 to 7.2-23 represent the continuous improvement of our three patient groups (inpatient, outpatient and ED) on measures of loyalty (definitely recommend). These outcomes are achieved through our increased focus on developing strategies that nurture our customer relationships from one stage to the next higher level (Figure 3.2-3).

Inpatient Engagement

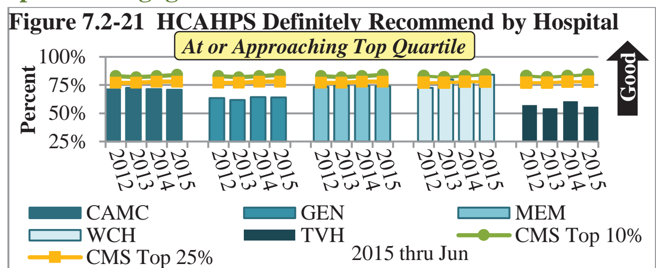


Figure 7.2-21 HCAHPS Definitely Recommend by Hospital

Outpatient Engagement

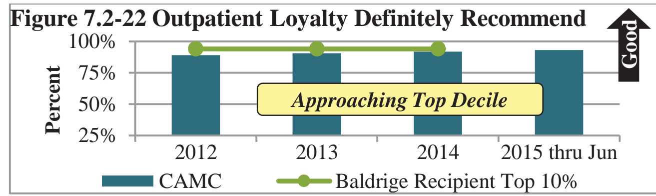


Figure 7.2-22 Outpatient Loyalty Definitely Recommend

ED Engagement

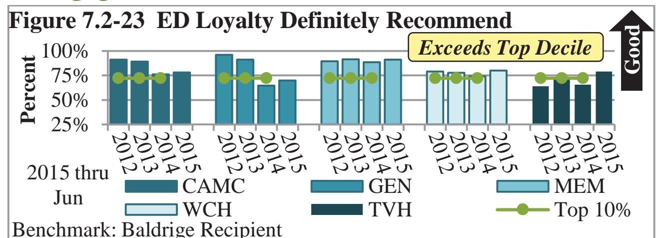


Figure 7.2-23 ED Loyalty Definitely Recommend

Figure 7.2-24 shows our significant social media growth, far exceeding our local competitors. Figure 7.2-25 demonstrates the effectiveness of our strategies to enhance our brand image that resulted in contribution to our financial bottom-line.

Figure 7.2-24 Social Media Growth

Social Media	CAMC			Comp A	Comp B	Comp C
	2012	2013	2014	2014	2014	2014
YouTube Video Views	18,169	38,460	44,007	1,089	477	NA
Facebook Likes	8,178	12,237	14,506	632	2,113	831
Twitter	548	1,049	1,315	234	NA	NA
Market Leader						

Figure 7.2-25 Marketing Campaigns and Contribution Margin

Campaign	Contribution Margin
Weight Loss (2 campaigns)	$1,972,168
Orthopedics	$121,646
Breast Health	$1,500,000
Women's Services Mammography	$346,912
Women's Services OB/GYN	$170,820
Women's Services Urology	$36,470
Neurology	$337,108
Total	**$4,485,124**
Brand Image Growth and Marketing Campaign Effectiveness	

Community and Payor Engagement

CAMC is a benchmark leader on community perception of best attributes that include best reputation, doctors, medical and nursing care (Figure 7.2-26). Results from our Image & Awareness survey show that we consistently rank #1 on community perception of providing the highest quality healthcare (Figure 7.2-27).

Figure 7.2-26 Image & Awareness Survey

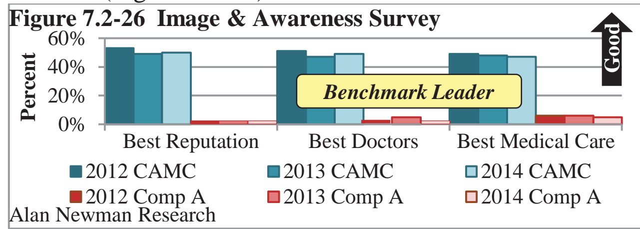
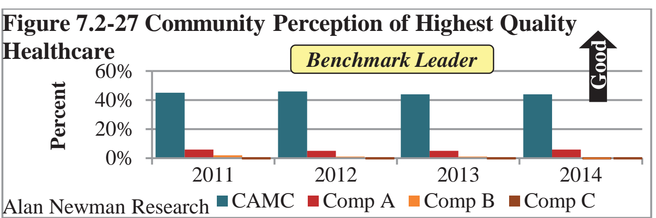


Figure 7.2-27 Community Perception of Highest Quality Healthcare



Other customer and stakeholder satisfaction and engagement results (Figure P.1-4) for **workforce segments, community and payors** are shown in Figures 7.3-13 to 7.3-15, 7.3-19 to 7.3-28, 7.5-16, 7.5-20; and 7.5-4 to 7.5-5 and show strong performance.

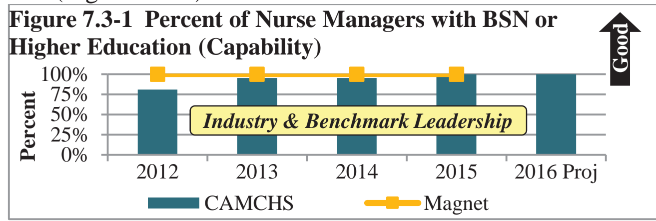
7.3 Workforce-Focused Results

7.3a Workforce-Focused Results

7.3a(1) Workforce Capability and Capacity

One indicator of "raising the bar" with WF capability and supporting appropriate skills is achieving our requirement that all nurse managers have a BSN or higher degree by year end 2015 (Figure 7.3-1).

Figure 7.3-1 Percent of Nurse Managers with BSN or Higher Education (Capability)



The effectiveness of our workforce to adhere to our MVV and expectations of service excellence begins with our onboarding inservices and education for all our workforce segments (Figure 7.3-2).

Figure 7.3-2 Onboarding Inservices and Education (Capability)

Year	Employees: Nursing and Non-Nursing	Physicians	Volunteers
2011	100%	100%	100%
2012	100%	100%	100%
2013	100%	100%	100%
2014	100%	100%	100%

We highly utilize our Simulation Center to train our workforce and increase their knowledge and skills (Figure 7.3-3).

Figure 7.3-3 Simulation Center Participants (Capability)

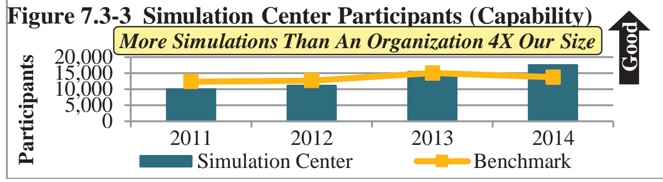


Figure 7.3-4 shows our industry and benchmark leadership with 100% compliance for medical staff credentialing and continuing medical education requirements.

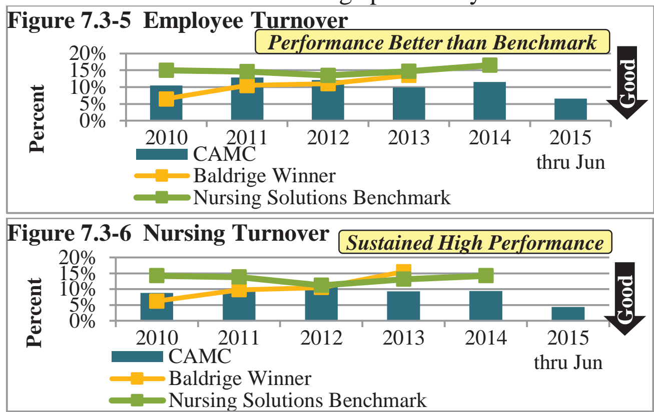
Figure 7.3-4 Medical Staff Competency (Capability)

	2011	2012	2013	2014
Compliance with credentialing requirements	100%	100%	100%	100%
50 hours of CME (WVBOM)	100%	100%	100%	100%

To "grow our own" and prepare for changing WF capability and capacity needs with healthcare reform, Figures 7.3-5 and 7.3-6 show better than benchmark performance and sustained improvements with our employee turnover specifically for the nursing workforce segment. We utilize Nursing Solutions as our national benchmark because they provide turnover trends for healthcare overall and nursing specifically.

Figure 7.3-5 Employee Turnover

Figure 7.3-6 Nursing Turnover



One of our key work process indicators is shown in Figure 7.3-7 and illustrates improvement in the time needed to fill positions. In 2014, we experienced significant improvement in time-to-fill days for nursing positions due to increased recruiting events and significant expansion of recruiting methods in social media.

Figure 7.3-7 Time to Fill Positions

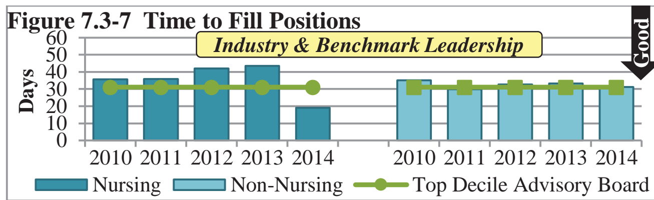
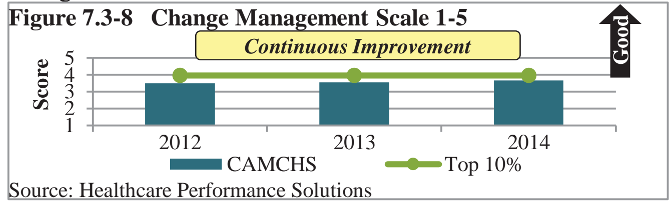


Figure 7.3-8 reflects improvement in our workforce's impression related to change management and the organization's effort to explain the change. This is in response to the question from the employee survey, "When significant changes occur at our organization, care is taken to ensure that all staff understands the reasons for the changes."

Figure 7.3-8 Change Management Scale 1-5



Source: Healthcare Performance Solutions

7.3a(2) Workforce Climate The outcomes of our strategies to ensure and improve WF health, safety and security are shown in Figures 7.3-9 to 7.3-12. CAMC was one of the first hospitals in the nation to require annual influenza vaccines as a condition of employment (Figure 7.3-9).

Figure 7.3-9 Employee Compliance with Seasonal Influenza Vaccine

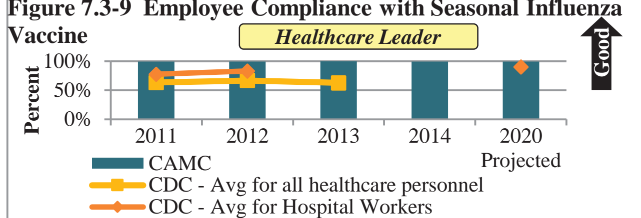
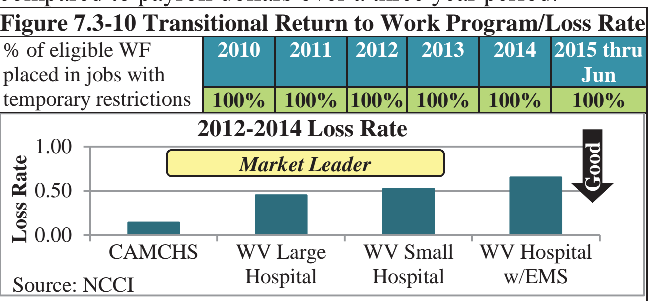


Figure 7.3-10 shows our success in placing 100% of our eligible workforce members in the Transitional Return to Work Program. This program has been pivotal in keeping CAMC's loss rate well below our state competitors. This rating is calculated using actual workers' compensation costs compared to payroll dollars over a three year period.

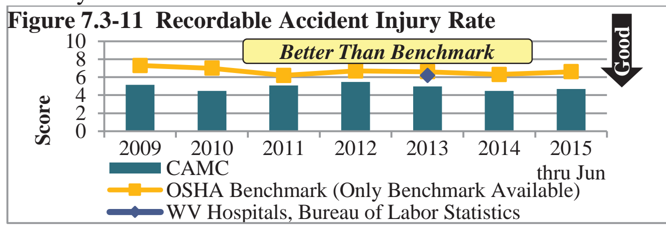
Figure 7.3-10 Transitional Return to Work Program/Loss Rate

% of eligible WF placed in jobs with temporary restrictions	2010	2011	2012	2013	2014	2015 thru Jun
	100%	100%	100%	100%	100%	100%



Our accident injury rate is better than the OSHA benchmark over the last 5 years (Figure 7.3-11) demonstrating our focus on safety for our workforce.

Figure 7.3-11 Recordable Accident Injury Rate



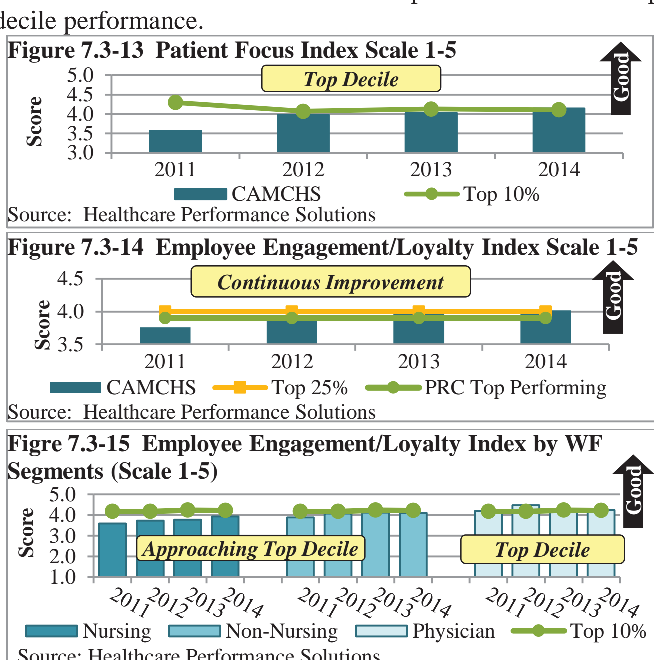
Systematic processes for risk mitigation throughout the CAMCHS are shown in Figure 7.3-12.

Figure 7.3-12 Environment of Care Scorecard

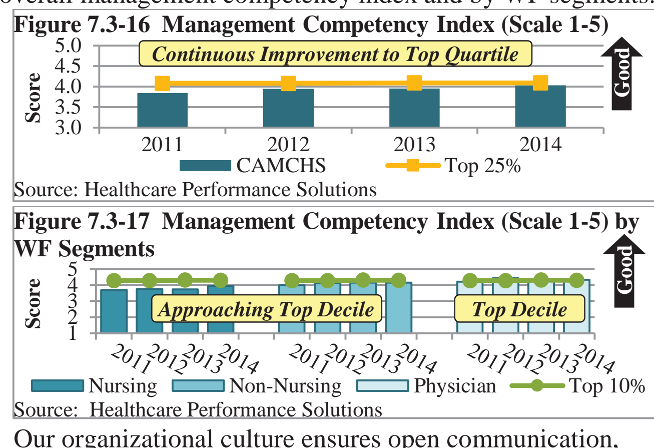
Measure	2012	2013	2014
Hazard Surveillance Rounds Conducted	100%	100%	100%
Portable Fire Extinguishers Inspected	100%	100%	100%
Emergency Gen/Transfer Switches Tested	100%	100%	100%
Fire Drills Conducted on All Shifts	100%	92%	100%
Fire Alarm Supervisory Signal Devices Tested	100%	100%	100%
Cooking Suppression Systems Tested	100%	100%	100%
Sprinkler Main Drain Tests at All System Risers	100%	100%	100%
Portable Fire Extinguishers Maintained	100%	100%	100%
Sliding and Rolling Fire Doors Tested	100%	100%	100%
Required Hazardous Waste Manifests Available	100%	100%	100%
Biological Testing of Renal Dialysis Water	100%	100%	100%
Ventilation Systems; Air Exchanges, Pressures	100%	100%	100%
OR Room Air Exchanges	100%	100%	100%
Silver/Copper Levels in Potable Water	100%	100%	100%
Safe Operating Environment			

Additional WF Climate metrics are *productivity, absenteeism and grievances*. CAMC's productivity was at or above 100% in all areas in 2014 (Figure 7.5-6). CAMC utilizes a paid time off (PTO) benefit for employees where PTO is used for time off whether planned or an unexpected absence. Employees receiving disciplinary action are eligible for CAMC's Discipline Resolution Procedure (DRP) or grievance procedure. In each of the last three years, less than 5% of all eligible disciplines have resulted in a DRP.

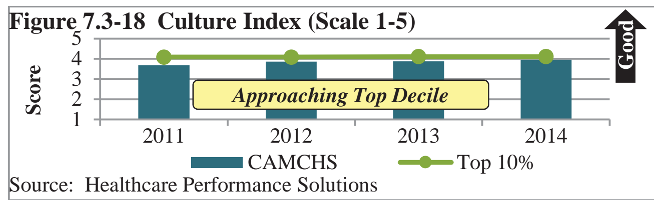
7.3a(3) Workforce Engagement We consider the Patient Focus Index (Figure 7.3-13) a key indicator of workforce engagement and satisfaction. The index is based on the annual employee survey question that relates to our organizational culture and vision of delivering the best care. The Employee Engagement and Loyalty Index (Figures 7.3-14 and 7.3-15) is based on correlated measures around job satisfaction of having a positive perspective on their profession and on workplace engagement by definitely recommending the organization to others. This index shows continued improvement and is at top decile performance.

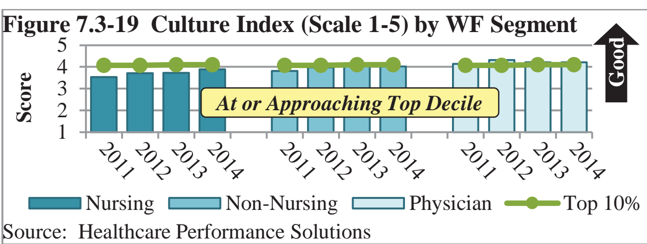


Other key measures of workforce satisfaction and engagement are shown in Figures 7.3-16 and 7.3-17 with outcomes showing annual improvements approaching top decile for overall management competency index and by WF segments.

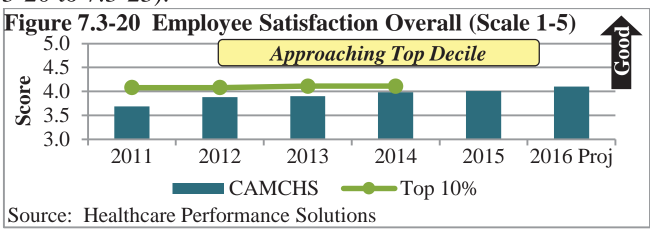


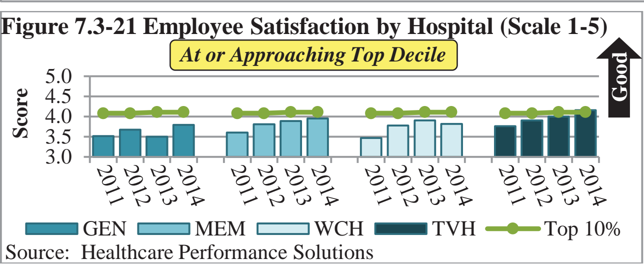
Our organizational culture ensures open communication, high performance work and workforce engagement. This is evidenced by our culture index result at or near top decile performance (Figures 7.3-18, 7.3-19) and supports our PI culture and infrastructure strategic advantage (SA2) Figure P.2-3.

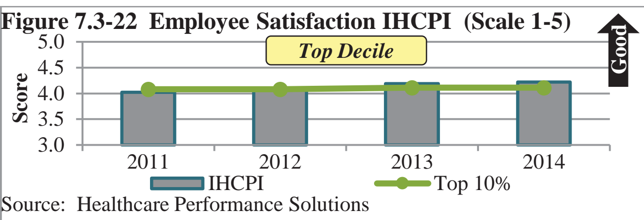


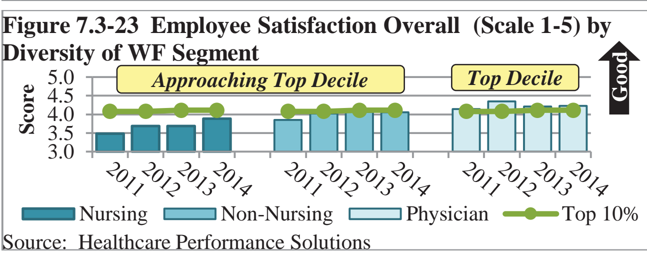


Overall employee satisfaction by hospital and by workforce segments show results at or approaching top decile (Figures 7.3-20 to 7.3-23).

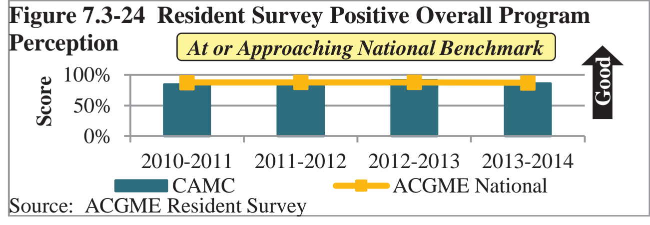


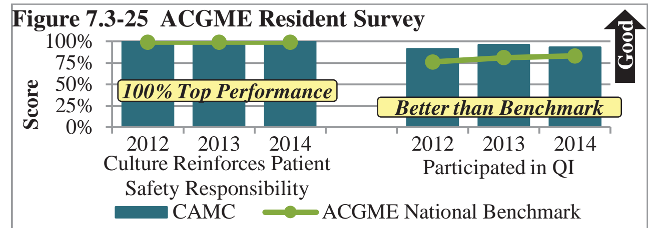




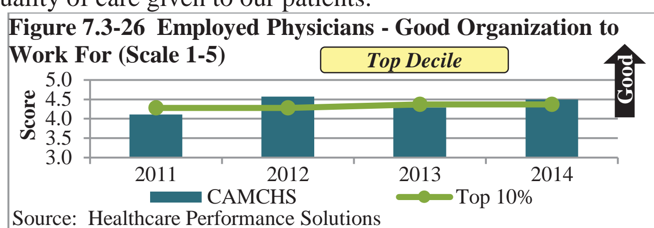


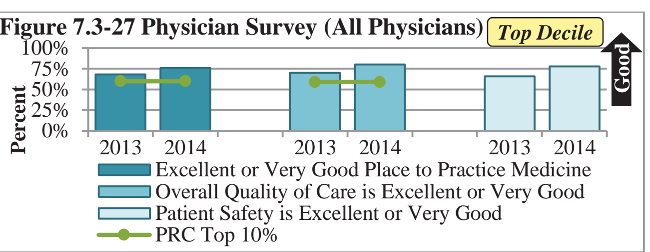
Figures 7.3-24 to 7.3-25 show the effectiveness of our medical residency program which supports our vision of being the "best place to practice medicine" and enables us to sustain their engagement with us.



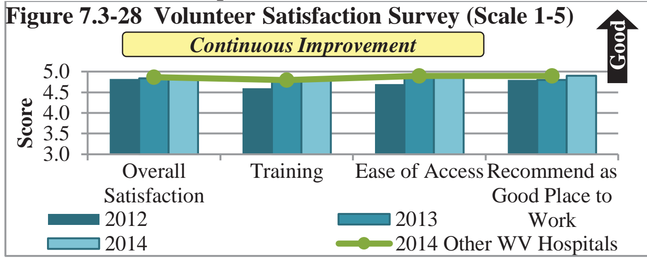


An indicator of physician engagement is the top decile ratings in Figures 7.3-26 and 7.3-27 showing our physicians' satisfaction with working at CAMC and with the safety and quality of care given to our patients.





As a cycle of learning, the first satisfaction survey for volunteers (Figure 7.3-28) was conducted in 2012 and results show positive trends. As a cycle of improvement to establish benchmarks, we took the lead in collaborating with our statewide Directors of Volunteer Services to develop and use a standardized survey tool to provide the ability to compare our results and share best practices statewide.



As shown in our Performance Management System (Figure 5.1-1), we have a systematic process of performance assessment. Figure 7.3-29 shows results of how employees are living up to our values expectations which are approaching best possible outcomes for each workforce segment. Additional segmentation is AOS.

Figure 7.3-29 Employees Living the Values (Scale 0-4)

CAMCHS Overall	2010	2011	2012	2013	2014	Trends
Integrity	3.66	3.72	3.75	3.77	3.78	+
Quality	3.59	3.64	3.65	3.70	3.71	+
Respect	3.56	3.62	3.64	3.68	3.69	+
Safety	3.60	3.64	3.68	3.72	3.76	+
Service	3.63	3.69	3.71	3.75	3.76	+
Stewardship	3.61	3.66	3.68	3.74	3.75	+
Shading Key: <3.00 = Red 3.00-3.50 = Yellow 3.51-4.00 = Green						

Workforce requirements, as determined through correlation analysis (Figure P.1-4), indicate that we have surpassed the benchmark performance threshold of 50th percentile and are approaching top decile (Figures 7.3-30 and 7.3-31).

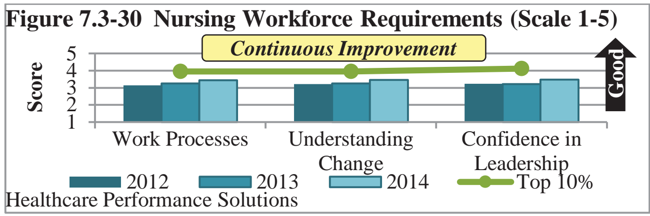


Figure 7.3-30 Nursing Workforce Requirements (Scale 1-5)

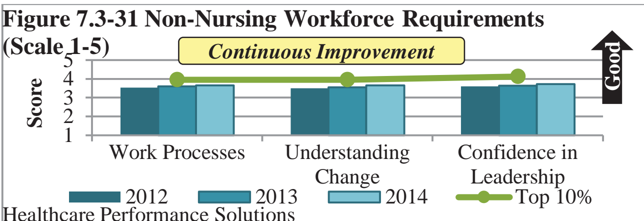


Figure 7.3-31 Non-Nursing Workforce Requirements (Scale 1-5)

7.3a(4) Workforce Development Figure 7.3-32 shows evidence of our "grow our own" strategy for workforce and leader development with internal promotions at a higher percentage than external recruitment.

Figure 7.3-32 Internal Leadership Promotions

	2010	2011	2012	2013	2014	Baldrige Recipient
Total	193	191	192	194	195	
Promoted	78%	77%	76%	81%	86%	86%
External	22%	23%	24%	19%	14%	14%
Equivalent to Current Baldrige Winner						

CAMC provides opportunities for continuing education through formalized education programs (i.e. nursing school, seminars, and educational scholarships) at an increasing rate and far surpassing the national benchmarks (Figure 7.3-33).

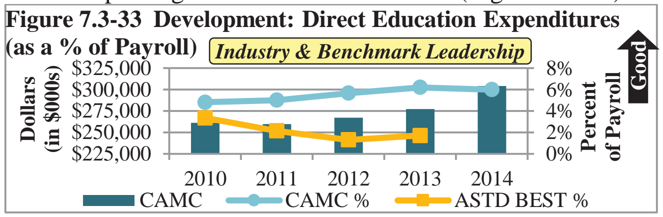


Figure 7.3-33 Development: Direct Education Expenditures (as a % of Payroll)

Understanding that our future nursing workforce is dependent on our ability to hire and retain new graduate nurses, CAMC created a Nurse Residency program in our critical care areas. The program was very successful with retention of nearly 100%. As a cycle of learning in 2014, all new graduate nurses were hired into our Nurse Residency program and offered a completion bonus agreement in which the nurse agrees to work at CAMC for a period of 3 years. To date, our 2014 turnover rate for new graduate nurses was reduced by half the prior years (Figure 7.3-34). These results support our "Grow Our Own" strategic advantage (SA4) in Figure P.2-3.

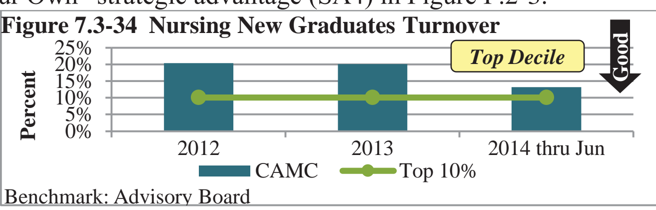


Figure 7.3-34 Nursing New Graduates Turnover

The CAMC Foundation, in conjunction with Human Resources, provides educational grants for employees to further their education in medicine, nursing or other fields supporting CAMC workforce needs (Figure 7.3-35) and our Learning Culture (SA3, Figure P.2-3). The Continuing Education grants pay expenses up front for employees enrolled in accredited colleges and support our Learning Culture strategic advantage (SA3, Figure P.2-3), as do Figures 7.3-36 and 7.3-37.

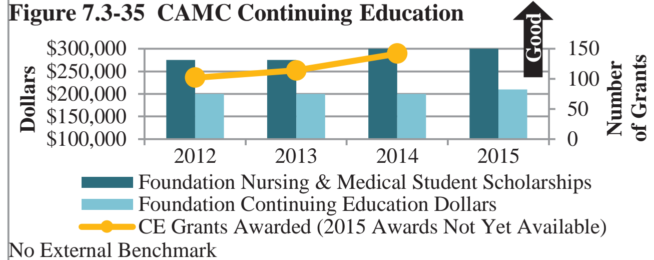


Figure 7.3-35 CAMC Continuing Education

CAMCHS provides opportunities for workforce members to receive continuing education hours through our own education and training programs provided for various disciplines (Figure 7.3-36).

Figure 7.3-36 Continuing Education Hours Awarded

Employee Group	2012	2013	2014
Social Work	923	640	2,079
Physicians	24,433	26,866	26,475
Pharmacy	1,557	1,319	1,663
Nursing	21,837	25,664	18,141
Allied Health	4,018	1,661	3,245
Over 50,000 hours of continuing education awarded			

Through our CAMC University, we support leadership development to ensure we have trained capable leaders now and into the future (Figure 7.3-37).

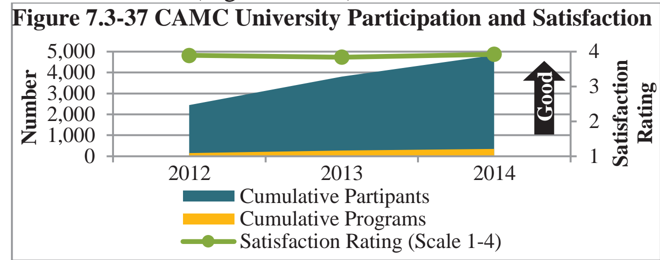


Figure 7.3-37 CAMC University Participation and Satisfaction

7.4 Leadership and Governance Results

7.4a Leadership, Governance, and Societal Responsibility Results

7.4a(1) Leadership Senior Leader commitment to two way communication and engagement with our workforce through the SL communication methods described in Figure 1.1-3 is reflected in the 11% improvement from 2011 to 2014 and near top decile performance in how our workforce rates leaders (Figure 7.4-1). Segmentation and analysis is AOS for each system entity to the department level and also by WF segment.

Figure 7.4-1 Senior Leadership Communication & Engagement with Workforce

Figure 7.4-2 provides one of many examples of how our SL create a focus on action. TCT changed the way we deliver patient care and has been fully deployed to all nursing units. Successful implementation of this change management process through all areas of CAMC has resulted in improved employee satisfaction, patient satisfaction and time our nurses have to spend with patients. Benchmarks for these results are found in Figures 7.3-14, 7.1-45, 7.5-6, 7.3-20 and 7.2-2.

Figure 7.4-2 Leadership Communication and Focus on Action

Indicator	Data Source	2009 Baseline	2012	2013	2014	%Imp
TCT Staff Survey	IHI	3.6	3.9	4.0	4.0	10%
RN Direct Patient Care	IHI	48%	57%	56%	56%	17%
Employee Satisfaction	Healthcare Performance Solutions	3.43	3.73	3.89	3.98	16%
Patient Experience	HCAHPS	63.9%	66.3%	68.9%	68.9%	8%

Figures 7.4-3 and 7.4-4 demonstrate the effectiveness of SL communication and engagement with the medical staff and our volunteers.

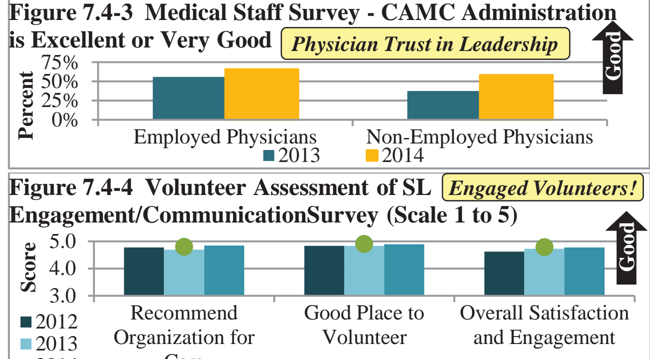


Figure 7.4-3 Medical Staff Survey - CAMC Administration is Excellent or Very Good

Figure 7.4-4 Volunteer Assessment of SL Engagement/CommunicationSurvey (Scale 1 to 5)

Senior Leader communication and engagement with our **patients** is demonstrated by Figures 7.2-1 and 7.2-2.

SL communication and engagement with **community** is evidenced by $15 million raised for the new Cancer Center from community fundraising in addition to the $2 million plus from CAMC Foundation fundraising annually. The Kanawha County Commission at its January 2015 meeting presented a resolution to our CEO, Dave Ramsey honoring CAMC leadership for its "care for the community, training of health care workers, contribution to the economy of Kanawha County, safety net services, and community benefit." These are examples of the many ways CAMC senior leaders are recognized for engagement and communication with our community (others AOS).

SL hold regularly scheduled meetings with our seven commercial, six Medicare and five Medicaid **payors** to discuss contract issues, satisfiers and issues/concerns (AOS).

7.4a(2) Governance

Governance accountability results are reported in Figure 7.4-5. Our focus is on finding and addressing issues internally through our Internal Audit process. The percent of RAC appeals won demonstrates our focus on governance accountability for delivery of healthcare services.

Figure 7.4-5 Governance Accountability

Internal Audits	Measure	2012	2013	2014	Benchmark
Code of Conduct	% Trained	100%	100%	100%	100%
Compliance Hotline Calls	% Investigated and Resolved	100%	100%	100%	100%
Compliance Dept Audits (8-10 full and 20 sample audits annually)	Recommended Actions Implemented	100%	100%	100%	100% of Audit Recommendations Implemented
External Audits	**Measure**	**2012**	**2013**	**2014**	**Benchmark**
RAC	% of Appeals Won	N/A		87%	RAC Trac AHA 66%
RAC Appeals Won are 32% Better Than Other Hospitals					

Internal and external fiscal accountability is achieved through our Internal Audit process by Corporate Compliance and the Board Audit and Finance Committees. Through a recent cycle of learning from our internal financial audits we have aligned our accounts payable and purchasing systems to eliminate duplicate invoices. Our external audits are provided by Deloitte and Moody's and all internal and external audits are reported to the BOT (Figure 7.4-6).

Figure 7.4-6 Fiscal Accountability – Internal and External Audits

Internal	Measure	2012	2013	2014	Benchmark
Physician Recruitment	Compliance with Policy	100%	100%	100%	100%
Billing & Payment	Audit Recommendations Accepted and Implemented	100%	100%	100%	100%
External	**Measure**	**2012**	**2013**	**2014**	**Benchmark**
Deloitte	Unqualified Audit Opinion	Clean	Clean	Clean	No Audit Adjustments
Moody's	Rating Review	A3-	A3+	A3+	Improved rating

To further support governance accountability, we have a systematic process for Board Self Assessment. Figures 7.4-7 to 7.4-10 show performance at 100% for 6 of 8 measures and exceeding benchmark for 8 of 8.

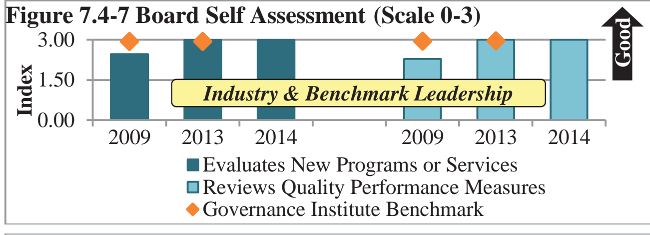


Figure 7.4-7 Board Self Assessment (Scale 0-3)

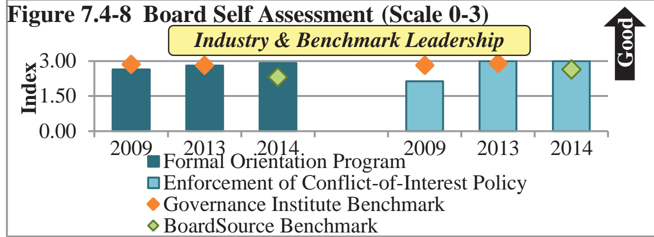


Figure 7.4-8 Board Self Assessment (Scale 0-3)

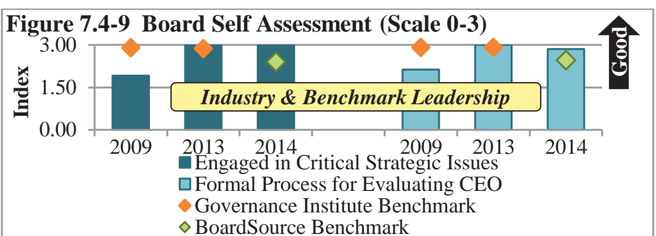


Figure 7.4-9 Board Self Assessment (Scale 0-3)

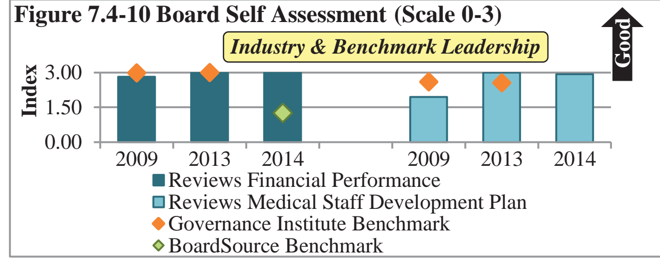


Figure 7.4-10 Board Self Assessment (Scale 0-3)

7.4a(3) Law, Regulation, and Accreditation CAMC's results show we are achieving and surpassing legal, regulatory and accreditation requirements (Figure 7.4-11). To support our learning culture strategic advantage (SA3, Figure P.2-3), we achieve all IRB review requirements and also have zero complaints and cases of non-compliance related to research and clinical trials (Figure 7.4-12).

Figure 7.4-11 Legal, Regulatory and Accreditation Measures

Measure and Goal (Figure 7.3-12)		2012	2013	2014
IRB Reviews	Requirements Met	100%	100%	100%
Medicare Conditions of Participation	100% Requirements Met & Issues Resolved	100%	100%	100%
OSHA	100% Issues Resolved	100%	100%	0 issues
TJC	Full Accreditation	Full	Full	NA
DNV	Full Accreditation	NA		Full
Industry & Benchmark Leadership				

Key processes and measures for addressing risks associated with health care services and operations [1.1b(1)] are provided in Figure 7.4-12.

Figure 7.4-12 Healthcare Services and Operational Risks

	Measure	Result
IRB - CHERI	CAMC/CHERI Protocol Deviations 2012=8; 2013=7; 2014=2 AAHRPP Benchmark 2012=65.9; 2013=99.5	75% Improvement and Far Exceeds Benchmark
	Complaints and Cases of Non-Compliance Reported to IRB 0 for 3 Years	0 Complaints and 0 Cases of Non-Compliance
Health care Services	Evidence Based Care Composite 2012=96.83%; 2014=98.24%	1.5% Improvement
	30 Data Readmission Index 2012=1.03; 2014=0.92	11% Improvement
	Safety Composite Score 2012=0.85; 2014=0.47	45% Improvement
	Potentially Avoidable Admissions	-27.3%; Leader in WV
Industry & Benchmark Leadership		

We voluntarily seek accreditations and certifications beyond those required to ensure we are the *Best Place To Receive Patient Centered Care* (Figure 7.4-13). Complete list AOS.

Figure 7.4-13 Accreditations and Certifications (Full list AOS)

	Accrediting Body	Org Unit	Measure	Result
Required	American College of Surgeons – Level 1 Trauma Center	GEN	Accreditation	Full
	American Society of Health System Pharmacists – Pharmacy	ALL	Accreditation	Full
	College of American Pathology (CAP) – All Facilities	ALL	Accreditation	Full
	Clinical Laboratory Improvement Amendment (CLIA)	ALL	Certification	Full
	American College of Radiology (ACR) – Mammography	ALL	Accreditation	Full
	DNV-GL (Det Norske Veritas and Germanischer Lloyd)	ALL	Accreditation	Full
Voluntary	American Association of CV and Pulmonary Rehab (AACVPR)	GEN MEM	Certification	Full
	DNV Primary Stroke Center	GEN	Certification	Full
	National Accreditation Program for Breast Centers	WCH MEM	Accreditation	Full
	American Society for Bariatric Surgery (ASBS) – Center of Excellence	GEN	Designation	Full
	National Children's Alliance Board – Child Advocacy Center	WCH	Accreditation	Full
	American Cleft Palate Craniofacial Association – Multidisciplinary Care of Children (only one in WV)	WCH	Accreditation	Full
Exceeds Accreditation & Certification Requirements				

7.4a(4) Ethics CAMC places a strong emphasis on ethical behavior as described in 1.1a(2) and 1.2b(1). Figure 7.4-14 demonstrates evidence of 100% compliance for conflict of interest disclosures and no HIPAA fines or OIG sanctions. WF perceptions of ethical behavior are reflected in Figures 7.4-1, 7.3-16 and 7.3-18. Figure 7.4-15 further validates ethical behavior and stakeholder trust through awards and recognitions segmented by all stakeholder groups.

Figure 7.4-14 Ethical Behavior in Governance

	2011	2012	2013	2014	BENCH MARK
% of Independent Board Members – Board Audit and Compensation Committees	100%	100%	100%	100%	59% NHCGS
Use of a Separate Audit Committee	Yes	Yes	Yes	Yes	43% NHCGS
Competency-Based Trustee Selection				Yes	35% NHCGS
Conflict of Interest Disclosure Statements	100%	100%	100%	100%	100%
Ethics Issues Resolved via Compliance Hotline	100%	100%	100%	100%	100%
HIPAA Fines or Sanctions	0	0	0	0	0
OIG Sanctions	0	0	0	0	0
Source: NHCGS – 2014 National Health Care Governance Survey Report, AHA					

Figure 7.4-15 Awards and Recognitions (Full List AOS)

Award and Recognition	Year(s)	Stakeholder
Distinguished Hospital Award for Clinical Excellence from Healthgrades for ranking in the nation's top 5% of hospitals for mortality and complication rates. CAMC is the only hospital in WV and one of only 311 hospitals nationwide.	2015, 2014	Patients
Women's Choice Award America's Best Hospitals for Patient Safety and Best Hospital for Heart Care	2015	
Outstanding Achievement Award by the Commission on Cancer for perfect scoring for all 3 years of the survey period. One of 75 nationwide.	2014	
The Center for Organ Recovery and Education (CORE) "medal of honor" and WV "Governor's Award for Life" for increasing donations.	2014	
WV Kids Count "Business on board with Childcare" and Navigator	2009-2011	Employees
Accreditation Council for Graduate Medical Education/American Osteopathic Association – Institutional accreditation and full accreditation status for all graduate medical education programs	2009-2021	Physicians Community
American Heart Association and American Stroke Association Gold Plus Award	2014	
National Research Corporation Consumer Choice Award	2009-2015	
Blue Distinction Center for Bariatric Surgery by Blue Cross and Blue Shield Association	2014	Payors

7.4a(5) Society While all hospitals provide some level of charity care, CAMC is part of the 15% that incurs a disproportionate financial burden due to the high proportion of uninsured, Medicaid and low income residents we serve. Our community benefit expenditures exceed the national average by 76% and total over $115 million (Figure 7.4-16). The trend downward is a direct result of our innovation in obtaining UPL in 2012 for Medicaid enhanced payment and enrollment in health plans through health care reform.

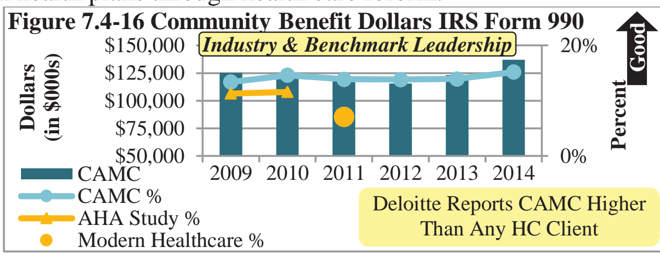
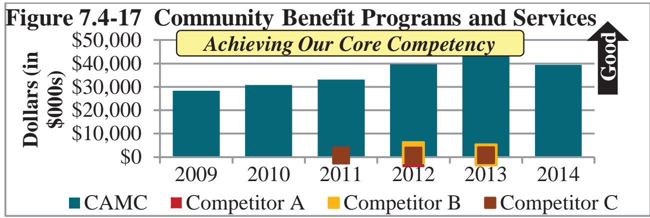


Figure 7.4-16 Community Benefit Dollars IRS Form 990

Community Benefit Programs and Services (Figure 7.4-17) demonstrates our commitment to community health improvement and community building activities as compared to our local competitors. Full report AOS.

Figure 7.4-17 Community Benefit Programs and Services



Figures 7.4-18 and 7.4-19 reveal how CAMC also exceeds national and local benchmarks for our uncompensated care cost share and demonstrates the extent of an additional avenue of support for our community.

Figure 7.4-18 Uncompensated Cost Share

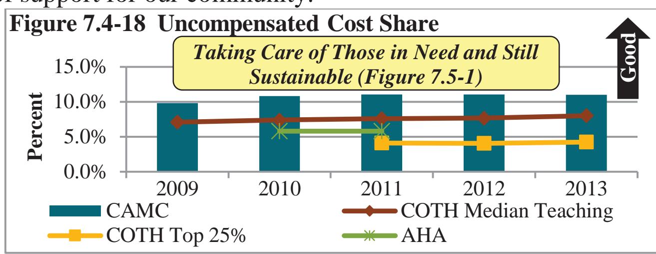
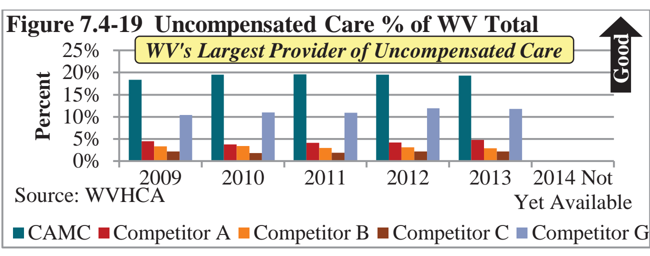


Figure 7.4-19 Uncompensated Care % of WV Total



Examples of our work with key communities is the outcome for high school students in Kanawha County (Figure 7.4-20) as a result of our Tobacco Workgroup through the KCCHI and our efforts to reduce smoking in our prenatal population in Figure 7.4-21. Additional results AOS.

Figure 7.4-20 Tobacco Use by Year High School Student

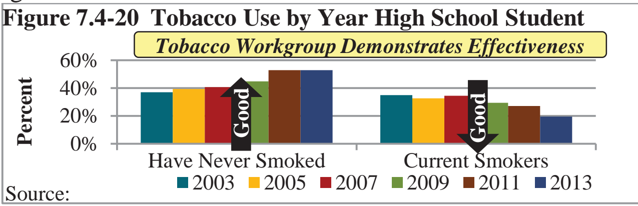
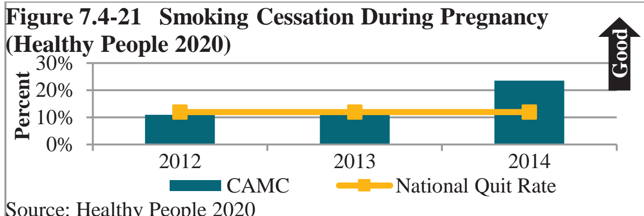
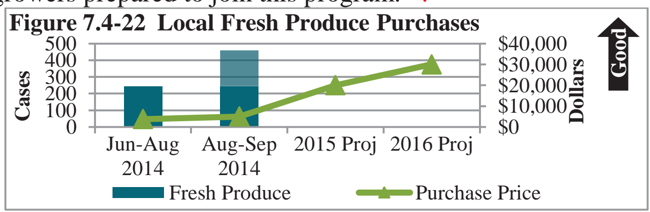


Figure 7.4-21 Smoking Cessation During Pregnancy (Healthy People 2020)



Our efforts to create wealth in our local community described in 1.2c(1) resulted in purchasing produce from local growers. As this program was ramped up in June-September 2014, we provided additional income of $4,975 to one local grower (Figure 7.4-22). In 2015, we currently have 3 additional growers prepared to join this program.

Figure 7.4-22 Local Fresh Produce Purchases



We address social responsibility through an emphasis on minimizing our environmental impact. We have reduced our regulated waste stream by 10% from 2010 to 2014 (Figure 7.4-23). Figures 7.4-24 and 7.4-25 show reduction in electrical and fossil fuel for one of our facilities (others AOS) for a CAMCHS total of 5.9% overall.

Figure 7.4-23 Regulated Medical & Construction Waste

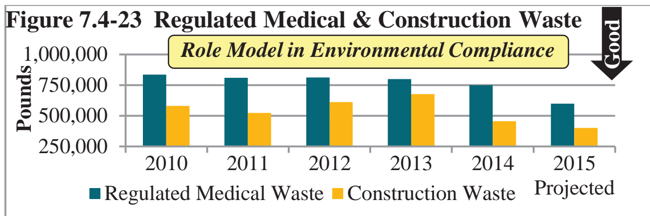


Figure 7.4-24 Total Site Energy Consumption - WCH

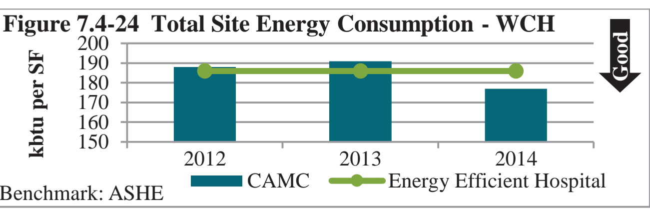
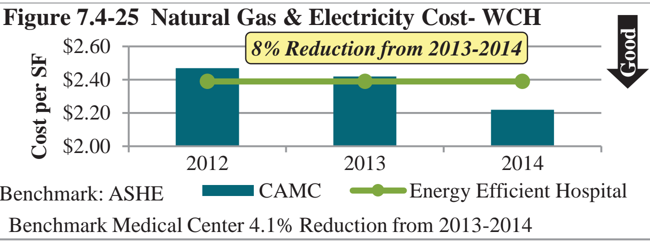


Figure 7.4-25 Natural Gas & Electricity Cost- WCH



Support of our key communities and our CC is evident with our total economic and employment impact (Figure 7.4-26) provided by the Ford Foundation as part of our Value Chain and Wealth Creation work with them as their first hospital partner in the United States (thus no benchmarks available).

Figure 7.4-26 Economic Impact of CAMCHS

CAMC Health System Employees	6,574
Employment Impact to PSA	11,991 Jobs
CAMC HS Operating & Capital Activities	$650,100,000
Tax Impact from Operating & Capital Activities	$124,800,000
TOTAL ECONOMIC IMPACT	$774,900,000
"Ripple effect in other businesses is enormous." National Center for Rural Health Works Sept. 2012	
One of the Most Impactful Organizations in West Virginia	

7.4b Strategy Implementation Results

Figure 7.4-27 Implementation of Strategy & Action Plans Results

Strategy and Action Plans (Figure 2.1-6)			
Pillar	**BIG DOT**	**Figure**	**3 or 4 Year Improvement**
Best Place to Receive Patient Centered Care	HCAHPS Patient Experience	7.2-2	7.9%
	HCAHPS Discharge Instructions	7.2-7	7.9%
	Mortality	7.1-10	22%
	TCT I	46 units (All planned)	
	TCT II	32 units	
	Patient Safety Composite	7.1-5	36.6%
Best Place to Work	Employee Engagement	7.3-20	7.9%
Best Place to Practice Medicine	HCAHPS Physician Communication	7.2-5	3.6%
	High Priority Recruitments	83 recruitments	
Best Place to Learn	Accreditation status of all CAMC sponsored GME programs (15)	All programs accredited Substantial compliance	
Best Place to Refer Patients/ Market Growth	IP and OP Volume for Ortho, Cardio, Neuro and CAMC Teays	7.5-24	24%
	Expense per Adjusted Admission	7.5-2	5% (1 year)
	Excess of Revenue over Expense	7.5-9	17%
	Expense Reduction	7.5-11	34%
All BIG DOTs Show Improvement			

CAMC's Leadership System (Figure 1.1-1) supports our focus on improvement (Figure 2.2-1) to drive accomplishment of our strategic plan as demonstrated by our BIG DOT performance in Figure 7.4-27. All BIG DOTs show improvement from 2011 to 2014.

Results for building and strengthening our Core Competency of *improving the health and economics of our community* are evident in all our results for 7.1 and 7.4a(5) as shown in Figure 7.4-28. Some examples of results for taking intelligent risks include our decision to joint venture in Infusion Solutions and Radiation Oncology and with making CAMC Teays Valley part of CAMC. Rationale for these and other intelligent risks, including the Information Systems change to Cerner is AOS.

Figure 7.4-28 CC and Intelligent Risks Results

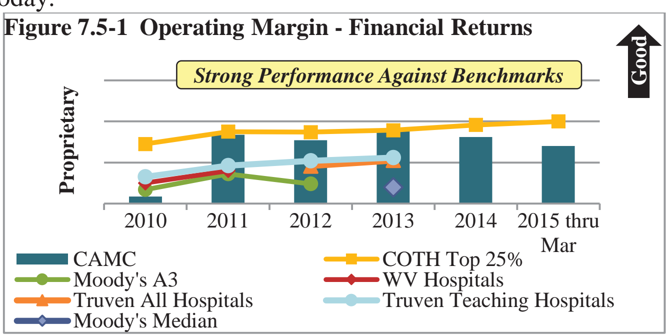
Building & Strengthening Core Competencies		Figures
Improving Health	Clinical Results	7.1a
Improving Economics	Community Benefit Results	7.4-16 – 7.4-26
	Financial Results	7.5-1 – 7.5-18
Taking Intelligent Risks		**Financial Contribution**
Intelligent Risks	Infusion Solutions	$250,000 (2014) $600,000 (2015 Projected)
	CAMC Teays	$3,400,000 (2014)
	Radiation Oncology JV	$500,000 (2015 Projected)

7.5 Financial and Market Results

7.5a Financial and Market Results

7.5a(1) Financial Performance CAMC is a low cost, low price hospital with above average uncompensated care yet we are able to achieve a strong operating margin. To do this, we have positioned ourselves for sustainability by addressing our strategic challenge of governmental pressure for decreasing costs (SC1, Figure P.2-3) through financial discipline, annual cost reductions, design improvement of our work systems and work processes and continual focus on PI. We demonstrate fiscal responsibility to our community through effective price and cost management compared to our teaching peers(COTH), local competitors and Moody's. We have been able to grow margins despite our payor mix and being one of the few remaining states with rate regulation for non-governmental payors, benchmark rate increases and one of only 17 states with a provider tax for hospitals. Our operating margin (Figure 7.5-1) consistently exceeds benchmarks. As a result of our strong financial performance, Moody's upgraded our bond rating from A3 negative to A3 stable in 2012 where it remains today.

Figure 7.5-1 Operating Margin - Financial Returns



Our ability to manage our expenses and charges is shown in Figures 7.5-2 and 7.5-3, keeping us at the top quartile COTH comparison. Considering the tertiary level of services we provide, we are very competitive compared to local competitors.

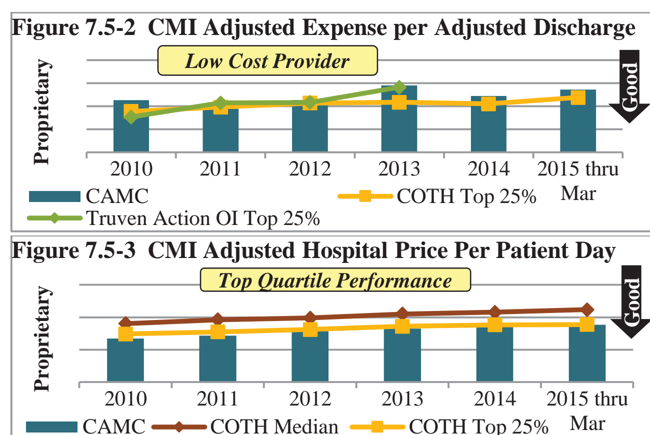
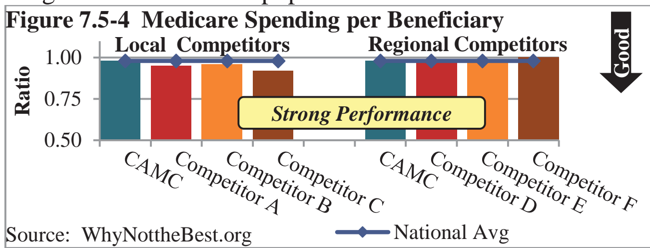


Figure 7.5-2 CMI Adjusted Expense per Adjusted Discharge

Figure 7.5-3 CMI Adjusted Hospital Price Per Patient Day

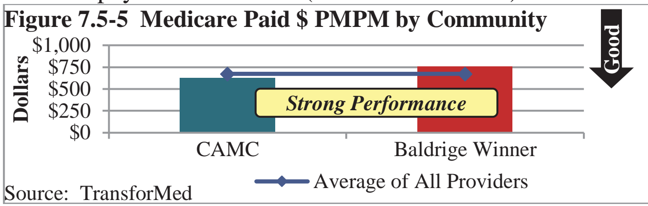
Compared to regional competitors, our Medicare Spending per Beneficiary (Figure 7.5-4) shows our focused effort on being a low cost, high quality provider, especially in consideration of the age and health of our population.

Figure 7.5-4 Medicare Spending per Beneficiary



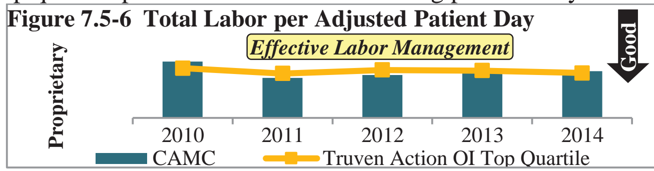
Our selection as one of 15 communities in the U.S. to participate in the National CMMI project for Medical Neighborhood resulted in innovation in our work with multiple visit patients through health coaching and care planning. As a result, Figure 7.5-5 shows the impact on Medicare payments for 2013 (2014 not available).

Figure 7.5-5 Medicare Paid $ PMPM by Community



We monitor staffing effectiveness through our systematic RMG process and balance this with patient and employee VOC. Figure 7.5-6 shows achievement of our efforts to be at top quartile performance and our resulting productivity.

Figure 7.5-6 Total Labor per Adjusted Patient Day



Productivity	Target	2011	2012	2013	2014
CAMC	99.5 to 100% Green= Target Met				
MEM					
GEN					
WCH					
TVH					
Ambulatory					
Nursing Units					
Emergency					

Days in Accounts Receivable (Figure 7.5-7) shows a good trend and exceeds benchmarks. Our projection for 2016 shows an increase in days that will impact all hospitals due to the national conversion to ICD10 based on our ongoing

environmental analysis scanning. As a result, we have modified our action plans (2.2b) to prepare for this through interim payment plans and reserves.

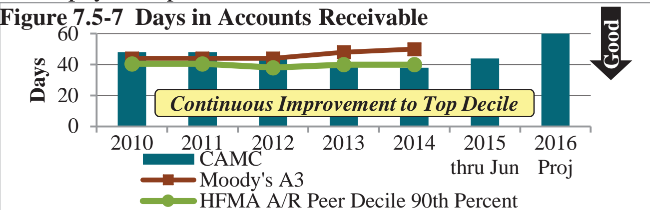


Figure 7.5-7 Days in Accounts Receivable

Days Cash on Hand (Figure 7.5-8) shows favorable trends and good performance. Figure 7.5-9 shows our strong financial performance against local competitors.

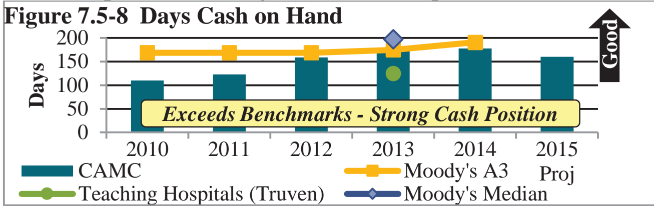


Figure 7.5-8 Days Cash on Hand

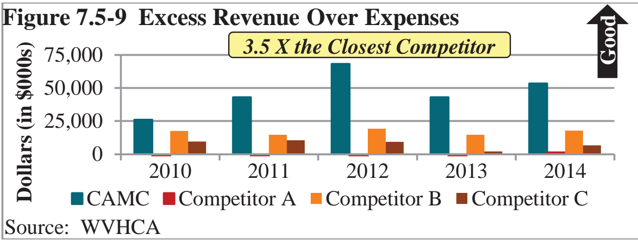


Figure 7.5-9 Excess Revenue Over Expenses

CAMCHS has improved its debt to equity ratio (Figure 7.5-10) in 2014 with a long term trend of improvement. The Median for A3 rated facilities should be achieved within the next two years.

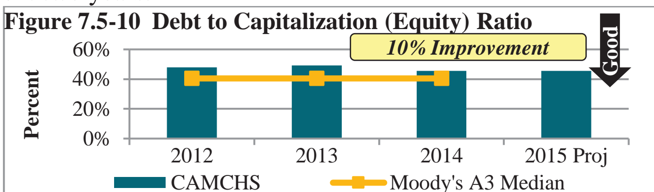


Figure 7.5-10 Debt to Capitalization (Equity) Ratio

Our annual and cumulative cost reduction efforts are shown in Figure 7.5-11 and exceed those of , a Baldrige recipient, who reported cost savings of $8 million to $25 million from 2005 to 2009 as a result of their PI efforts.

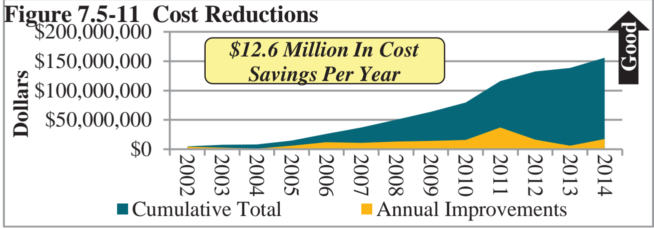


Figure 7.5-11 Cost Reductions

In addition, through strong supply chain management we have saved over $30 million over the past 4 years in negotiated supply chain savings (Figure 7.5-12).

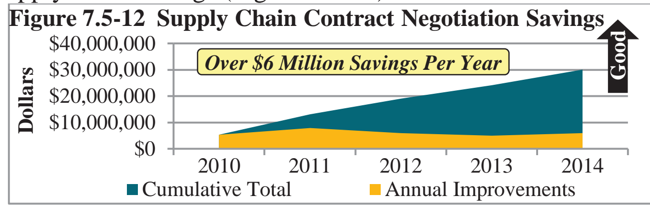


Figure 7.5-12 Supply Chain Contract Negotiation Savings

For our Organizational Performance Reviews (Figure 4.1-3), financial data are segmented by system entity; service line; inpatient, outpatient, emergency; and by department and payor (AOS). One example includes Outpatient Net Margin by Payor and Payor Mix (7.5-13) which shows the impact of government payors on CAMC's bottom-line based on our payor mix. 2014 data (not yet available) and additional segmentation to the zip code level is AOS.

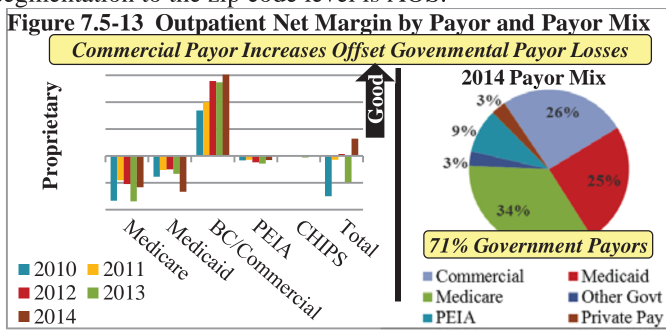


Figure 7.5-13 Outpatient Net Margin by Payor and Payor Mix

Figure 7.5-14 shows CAMC's strong financial performance and Figure 7.5-15 shows the financial performance of CAMC Health System entities. CHERI and IHCPI are supported in part by CAMC for the services they provide to support the system. CHERI provides education, research and GME support. IHCPI (CAMC Physicians Group) manages the employed physician group and ensures trauma specialist coverage.

Figure 7.5-14 CAMC Health System Financial Performance

Measure (in 000's)	2011	2012	2013	2014
Operational Income	$23,691	$50,744	$10,979	$38,276
Excess of Revenue over Expense	$18,760	$84,123	$60,801	$58,627
Increase in Unrestricted Net Assets	$19,655	$86,236	$76,459	$48,508
Strong Financial Performance				

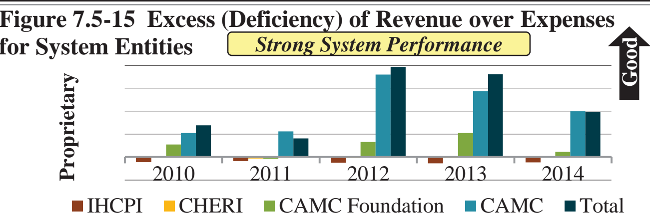


Figure 7.5-15 Excess (Deficiency) of Revenue over Expenses for System Entities

The CAMC Foundation provides fundraising to support CAMCHS services, most recently through a very successful campaign to build a new cancer center. $15,410,777 was raised, exceeding the goal by more than $400,000.

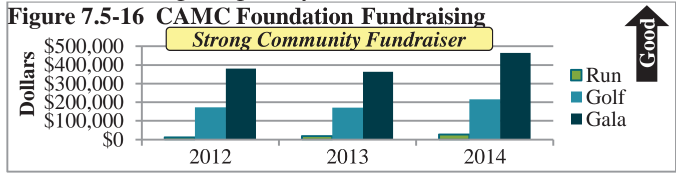


Figure 7.5-16 CAMC Foundation Fundraising

Figure 7.5-17 shows the increase in volume, physicians and sites for IHCPI (CAMC Physicians Group), contributing to inpatient and outpatient access and quality care.

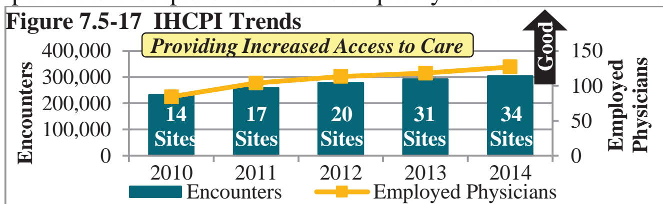


Figure 7.5-17 IHCPI Trends

The CAMC Health Education and Research Institute (CHERI) supports CAMCHS by providing education, research and clinical trials, grants administration and medical

education. Figure 7.5-18 shows CHERI results for their impact on our mission and CC through improving patient care and the economics of our community and CAMCHS.

Figure 7.5-18 CHERI Contributions to CAMCHS

Measure	2012	2013	2014
Publications & Presentations	145	114	172
Total Active Protocols	397	416	456
Industry Sponsored Clinical Trials (Active)	35	46	90
ACS Commendation Standard (8% and above)	Exceeded		
Grants & Sponsored Programs Awards (in 000's)	$3,184	$3,833	$5,660
Protocols Open To Cancer Patient Enrollment *ACS Commendation*	33	36	35

7.5a(2) Marketplace Performance 2013 is the most recent market share data available from the WV Health Care Authority. CAMC has strong market share in our 12 county service area (Figure 7.5-19). We touch over 51% of all residents in Kanawha County (market share is 60%) annually through our inpatient, outpatient or emergency services. Our total market share is 35%; primary service area is 48%; secondary is 16% (Figure 7.5-20). In addition, CAMC is the top choice hospital in our Image and Awareness Survey (Figure 7.2-1). We also are the market leader for our inpatient work system segment as shown in our inpatient discharges in comparison to our competitors and segmented by hospital and service (Figures 7.5-21 to 7.5-24). This supports our strategic advantage for scope of services (SA1) in Figure P.2-3.

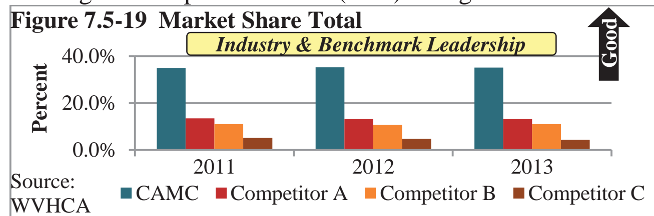


Figure 7.5-19 Market Share Total

Market share for our PSA and SSA, market segments as defined in P.1b(2), show our market leadership.

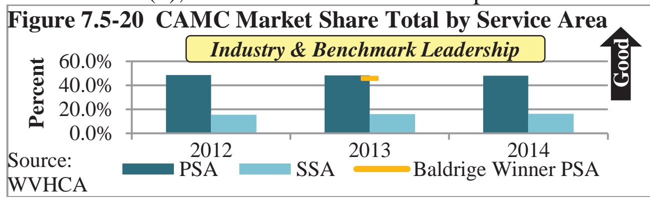


Figure 7.5-20 CAMC Market Share Total by Service Area

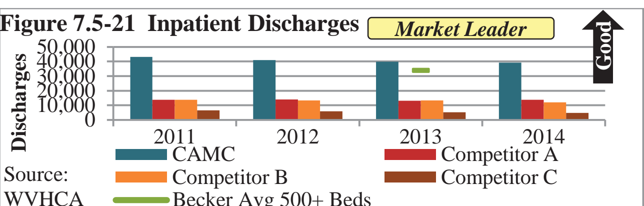


Figure 7.5-21 Inpatient Discharges

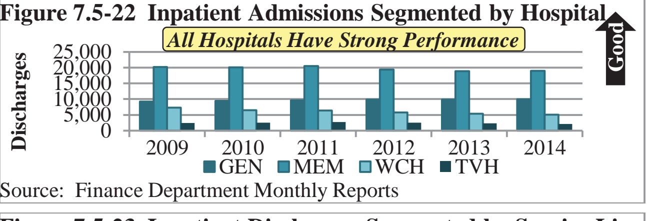


Figure 7.5-22 Inpatient Admissions Segmented by Hospital

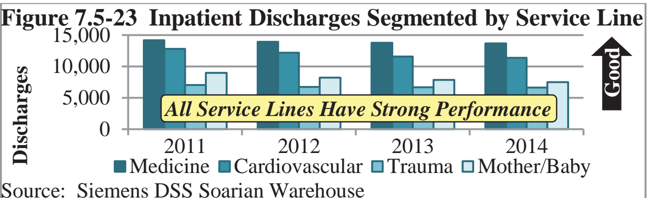


Figure 7.5-23 Inpatient Discharges Segmented by Service Line

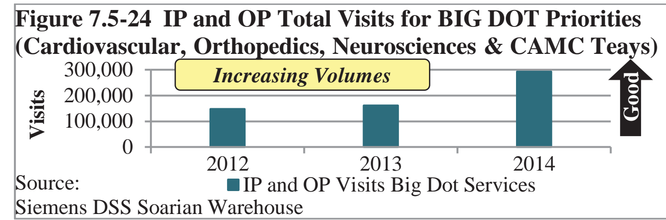


Figure 7.5-24 IP and OP Total Visits for BIG DOT Priorities (Cardiovascular, Orthopedics, Neurosciences & CAMC Teays)

We also lead the market in outpatient and ED visits (Figures 7.5-25 and 7.5-26).

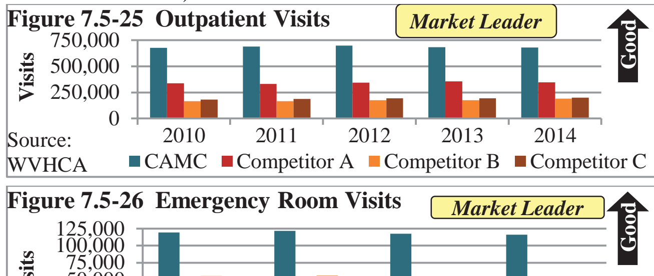


Figure 7.5-25 Outpatient Visits

Figure 7.5-26 Emergency Room Visits

Market Leader

Good

Visits

125,000
100,000
75,000
50,000
25,000
0

2011 2012 2013 2014

Source: WVHCA

CAMC Competitor A Competitor B Competitor C

We also segment our market data by service line as shown in Figures 7.5-27 through 7.5-31. We lead the market in all service lines and recently renovated our Women and Children's labor and delivery unit to provide all private rooms to regain the losses we were seeing to our local competitor who added a new bed tower with all private rooms. Additional segmentation is AOS.

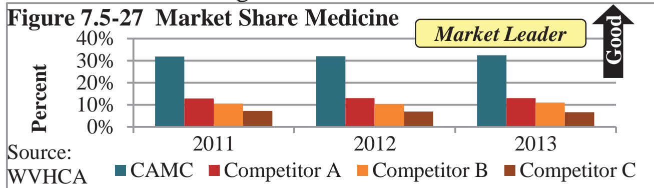


Figure 7.5-27 Market Share Medicine

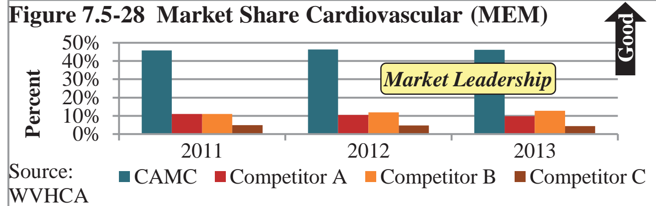


Figure 7.5-28 Market Share Cardiovascular (MEM)

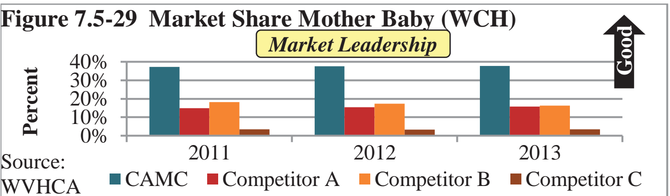


Figure 7.5-29 Market Share Mother Baby (WCH)

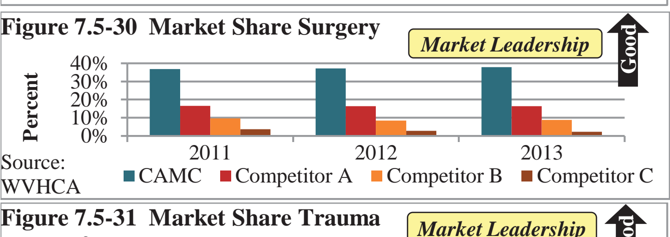


Figure 7.5-30 Market Share Surgery

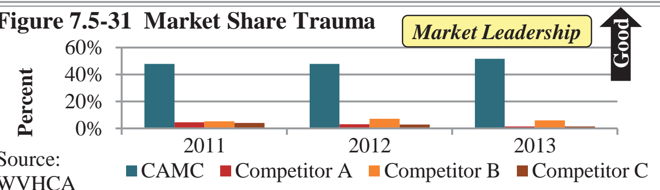


Figure 7.5-31 Market Share Trauma