



Medical University of South Carolina Medical University Hospital Authority

*David J. Cole, MD, FACS
President*

*Patrick J. Cawley, MD
CEO / Executive Director, Authority
Vice President for Clinical Operations, University*

Presented to: Health and Human Services Subcommittee
House Ways and Means Committee

February 04, 2015

Changing What's Possible





Medical University of South Carolina



- Largest Employer in Southeast Coast and one of the largest in South Carolina – 12,500 employees
- \$3.4 billion impact (direct spending and ripple effect)
- Combined payroll over \$1.6B
- Operating budget over \$2.2B

Changing What's Possible





Medical University of South Carolina Overview

- Our Vision:
 - Leading health innovation for the lives we touch
- MUSC is a public institution of higher learning the purpose of which is to preserve and optimize human life in South Carolina and beyond
- MUSC is South Carolina's only comprehensive academic health services center
- Location: Charleston, SC

At a Glance	
Enrollment Headcount	2,900
Enrollment FTE	2,819
In-State Enrollment	71.55%
Minority Enrollment	23.86%
Female Enrollment	63.17%

Changing What's Possible





Student Enrollment (Doctoral)

Degree of Study -Doctoral	Fall 2014 Enrollment (Headcount)	Fall 2014 Enrollment (FTE)
Doctor of Dental Medicine (including DMD/PhD)	292	292
Doctor of Health Administration	87	87
Doctor of Medicine (including MD/PhD)	725	725
Doctor of Nursing Practice	213	192
Doctor of Pharmacy (including PharmD/PhD)	323	322
Doctor of Philosophy -Biomedical Sciences	142	142
Doctor of Philosophy -Health and Rehabilitation Sciences	21	18
Doctor of Philosophy -Nursing	65	38
Doctor of Physical Therapy	192	192

Changing What's Possible





Student Enrollment (Other)

Degree of Study -Other	Fall 2014 Enrollment (Headcount)	Fall 2014 Enrollment (FTE)
Master in Health Administration	136	126
Master of Science in Biomedical Science	29	25
Master of Science in Clinical Research	24	21
Master of Science in Dentistry	22	22
Master of Science in Nurse Anesthesia	80	80
Master of Science in Nursing	24	21
Master of Science in Occupational Therapy	90	90
Master of Science in Physician Assistant Studies	126	124
Bachelor of Science in Cardiovascular Perfusion	32	32
Bachelor of Science in Nursing	261	257
Certificate in Biomedical Science	9	9
Non-Degree Seeking	7	4

Changing What's Possible





MUSC Health

Overview

- 4 Hospitals
- 709 total beds
- Physicians: 750
- Nurses: 1950
- Employees: 7,000+
- Clinical trials: 1,851
- Outpatient Visits: 1,205,066
- Patient Admissions: 35,763
- ER Visits: 63,282



Changing What's Possible





U.S. News Rankings – Adult & Pediatric



Adult Programs – Top 25% in Nation

Cancer	Cardiology & heart
Diabetes and endocrinology	Geriatrics
Gastroenterology	Gynecology
Neurology and neurosurgery	Orthopaedics
Pulmonology	Urology

Changing What's Possible





American Hospital Association – McKesson
Quest for Quality Prize®

Hospitals in Pursuit of Excellence



A Cancer Center Designated by the
National Cancer Institute



Outstanding Patient
Experience Award
2014, 2013, 2012



Neurosciences Excellence
Award
2014, 2013, 2012



Stroke Care
2014, 2013, 2012



Neurosurgery Excellence
Award
2014



Bariatric Surgery Center of
Excellence



Gamma Knife Center of
Excellence



Breast Imaging Center of
Excellence

Becker's Hospital Review Names MUSC:

- Great Heart Programs
- Great Orthopedic Programs
- Great Neurosurgery and Spine Programs



Update on Children's Hospital / Women's Pavilion



MUSC Children's Hospital

Overview

- Built in 1987
- 190,000 sq. ft.
- 186 total beds
- Physicians: 237
- RNs: 458
- Staff: 230
- Research faculty: 44
- Clinical trials: 106



Changing What's Possible



MUSC Children's Hospital

The MUSC Children's Hospital provides the only Pediatric Cardiac Surgery program in the state as well as the only Pediatric Organ Transplant Program. The program includes kidney, heart, and liver transplantation.

Changing What's Possible





Current Situation: **MUSC Children's Services**

Key Stats

Discharges	7,893
Average Daily Census	150.4
Clinic Visits	64,252
ED Visits	20,796

- » MUSC is a leading provider of children's services in SC
- » Over 80% of pediatric inpatients originate in the 9-County area
- » THE leader provider for high-acuity services - The pediatric volume that originates outside of the 9-County area is typically high acuity and about 2% of volume originates outside of the state
- » Regionally:
 - New partnership between Novant and Memorial to develop a new Children's Hospital in Savannah
 - Children's Hospital of Atlanta and Levine Children's Hospital, Charlotte continue to push inward, potentially threatening the MUSC population from Northern and Western South Carolina

Changing What's Possible



Current Situation:

MUSC Women's Services

Key Stats

Discharges	2,986
Average Daily Census	24.5
Clinic Visits	47,758

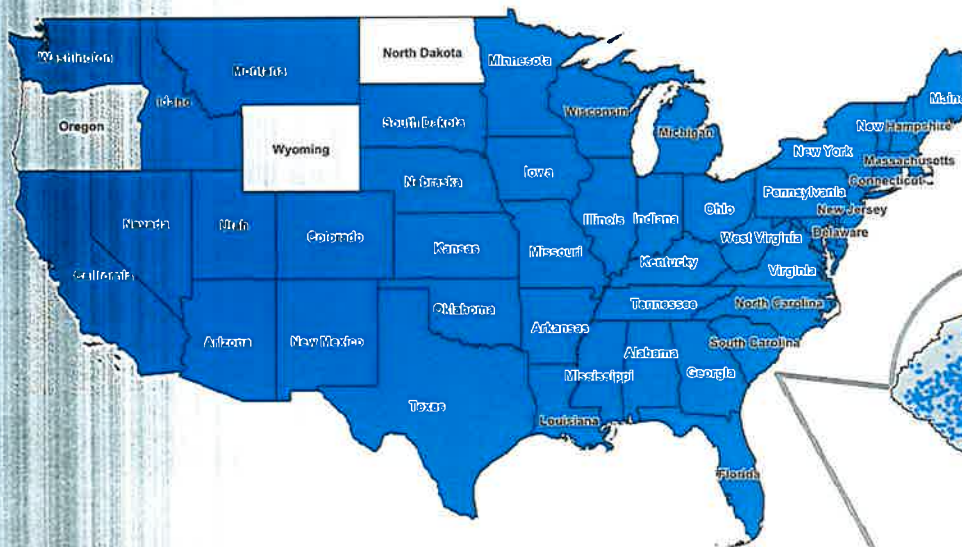
- » MUSC is a leader in providing high-risk perinatal services throughout the region
- » Works closely with other perinatal regional providers
- » Provider of higher acuity perinatal services
- » Benefits from regionalization of perinatal services

Changing What's Possible

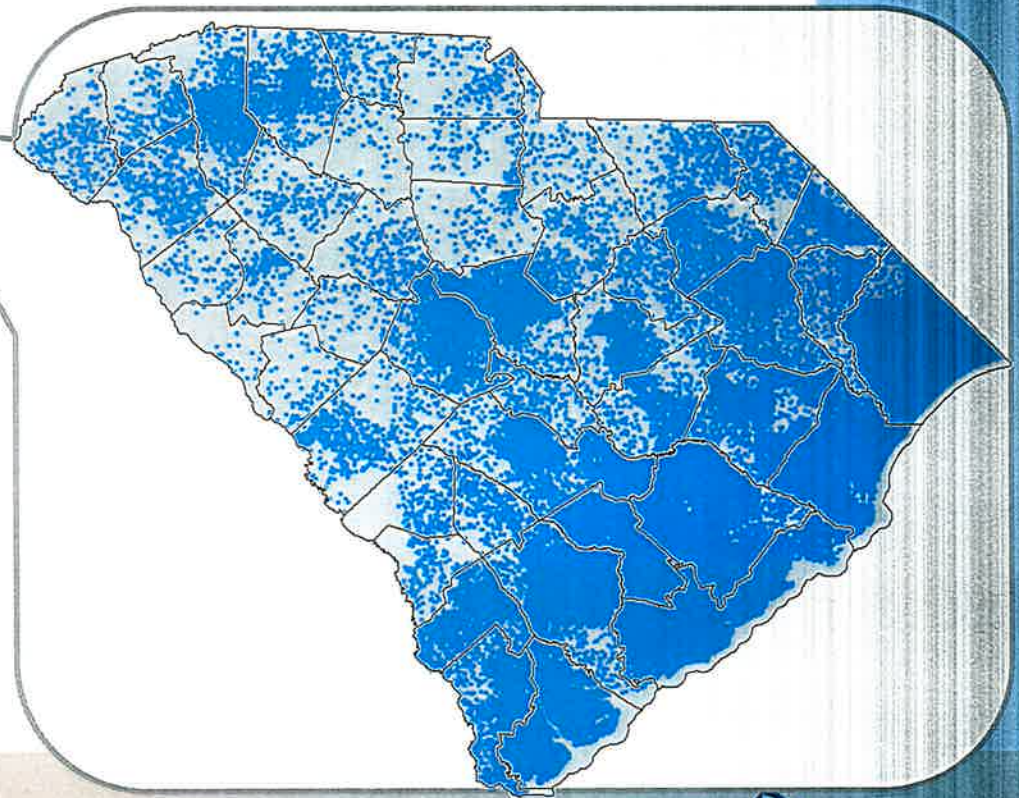




2014 MUSC Pediatric Patient Origin



MUSC attracts pediatric patients from every county across South Carolina and from 47 of the 50 states.



Changing What's Possible

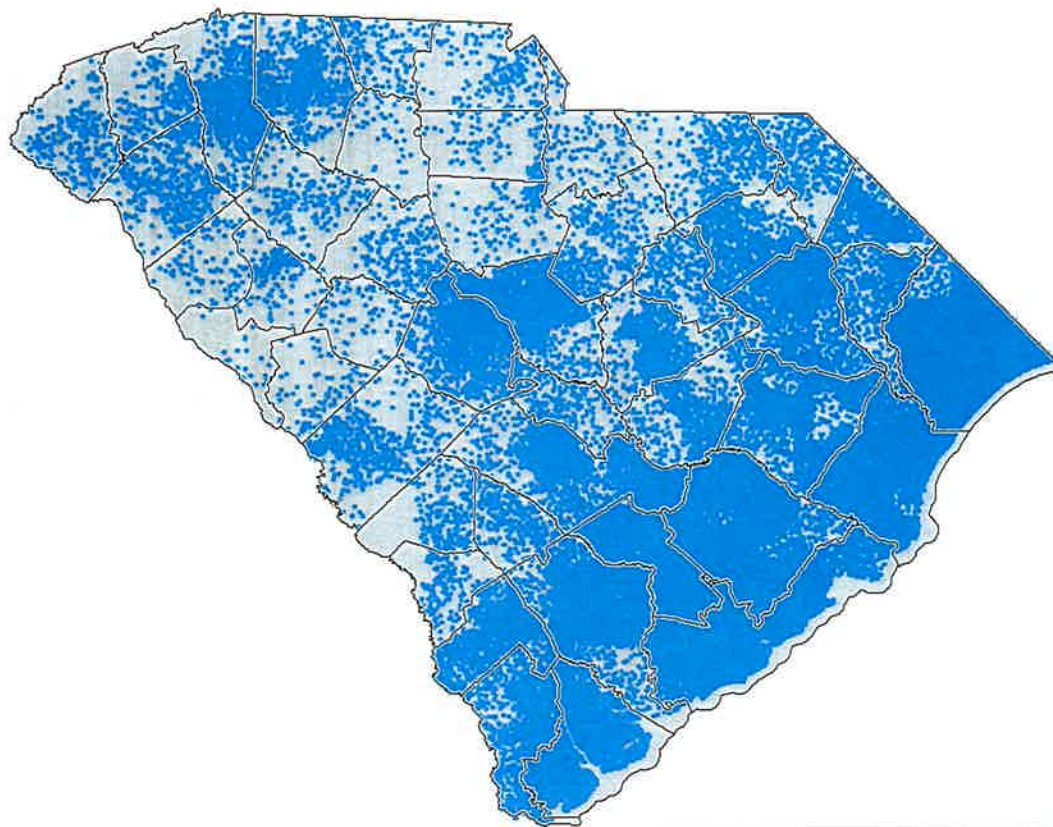
Note: Data represents patient encounters

Source: MUSC internal data provided by hospital analytics



2014 MUSC Pediatric Patient Origin

MUSC attracts pediatric patients from every county across South Carolina



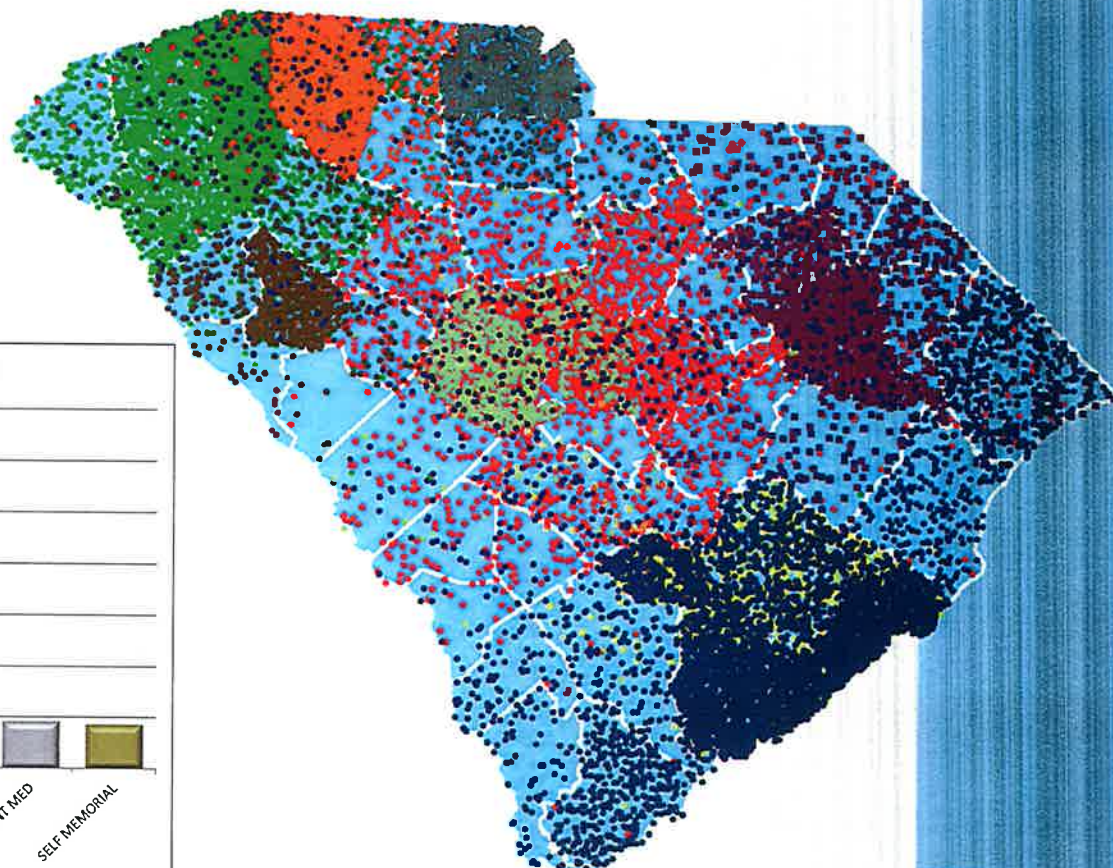
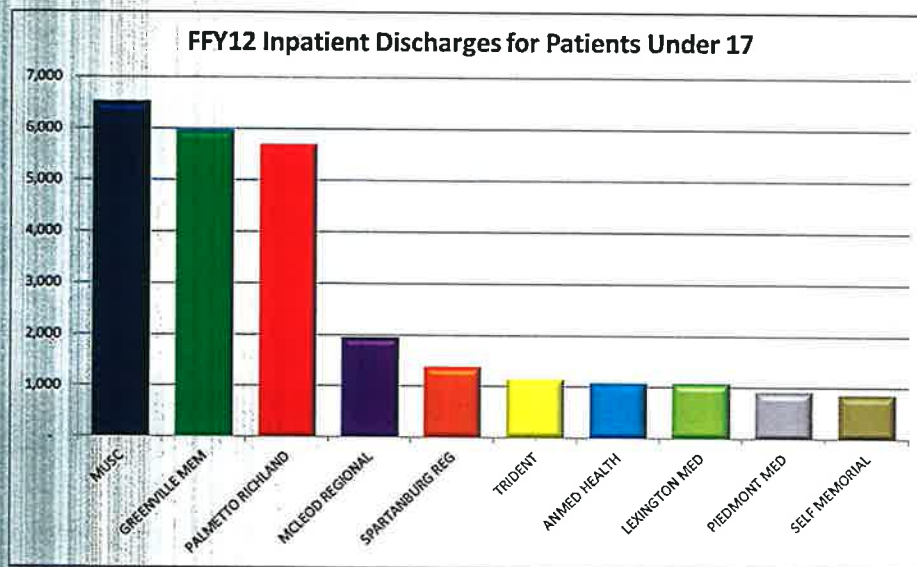
Changing What's Possible

Note: Data represents patient encounters

Source: MUSC internal data provided by hospital analytics



Pediatric IP Patient Origin and Volumes



Source: SCORS

Notes: NACHRI definition used, excluding normal newborns.

Changing What's Possible



www.MUSCKids.com



SC leader in 14 of the 24 Service Lines Top 3 for all 24

	Market Leader			Second			Third			Total # of Cases
	Hospital	2012 Market Share	2011 - 2012 Δ	Hospital	2012 Market Share	2011 - 2012 Δ	Hospital	2012 Market Share	2011 - 2012 Δ	
Cancer Care - Hematology	MUSC	37.4%	↑ 3.9	Palmetto	20.1%	↓ -3.5	Greenville	17.6%	↑ 1.8	1,089
Cancer Care - Oncology	Greenville	45.1%	↑ 4.7	MUSC	36.0%	↓ -0.7	Palmetto	18.0%	↓ -3.8	567
Cardiac Care - Medical	MUSC	39.2%	↓ -4.8	Greenville	25.1%	↑ 3.8	Palmetto	22.5%	↑ 3.9	355
Cardiac Care - Surgical	MUSC	97.3%	→ 0.3	Greenville	1.7%	↑ 0.7	Palmetto	0.3%	↓ -1.6	293
Dental	MUSC	33.6%	↑ 3.8	Palmetto	19.5%	↑ 6.6	Greenville	10.2%	↓ -3.6	128
Dermatology	Palmetto Richland	35.0%	↑ 12.9	MUSC	22.0%	↓ -4.8	Greenville	11.4%	↓ -1.2	123
Endocrinology	Palmetto Richland	24.2%	→ 0.5	MUSC	23.9%	↓ -3.7	Greenville	17.6%	↑ 2.7	591
ENT	MUSC	33.6%	↑ 3.7	Palmetto	20.6%	↓ -2.7	Greenville	19.0%	↑ 5.7	457
General Pediatrics	Palmetto Richland	20.5%	↑ 2.4	MUSC	15.5%	↑ 2.7	Greenville	11.2%	→ -0.1	2,447
GI	MUSC	27.7%	↑ 3.2	Greenville	23.1%	↑ 4.0	Palmetto	23.0%	↓ -0.6	1,277
Infectious Disease - Medical	Palmetto Richland	20.7%	↑ 1.2	MUSC	17.4%	↑ 3.9	Greenville	16.0%	→ 0.4	2,388
Neonatal Care - Medical	Greenville	15.1%	→ 0.4	MUSC	8.1%	↓ -1.1	Lexington Medical	6.4%	↑ 1.2	16,207
Neonatal Care - Surgical	MUSC	35.2%	↓ -1.3	Palmetto	34.3%	↑ 5.7	Greenville	23.2%	↓ -1.7	233
Nephrology/Urology-Medical	MUSC	23.3%	*	Greenville	17.1%	*	Palmetto	15.1%	*	806
Nephrology/Urology-Surgical	MUSC	35.4%	*	Greenville	30.1%	*	Palmetto	20.7%	*	246
Neurology	MUSC	36.9%	↑ 5.0	Palmetto	27.5%	↓ -2.1	Greenville	20.0%	↑ 0.8	1,183
Neurosurgery	MUSC	36.7%	↓ -4.0	Palmetto	29.2%	→ 0.4	Greenville	28.1%	↑ 2.9	281
Ophthalmology	MUSC	32.1%	↑ 1.0	Palmetto	24.1%	→ -0.4	Greenville	10.2%	↓ -0.9	137
Orthopedics	Palmetto Richland	31.0%	↑ 2.6	MUSC	23.3%	↑ 1.2	Greenville	14.3%	→ 0.0	1,401
Peds Surgery	Greenville	23.5%	↑ 2.9	Palmetto	22.7%	↑ 1.5	MUSC	21.1%	↓ -1.8	1,605
Respiratory services- Medical	Palmetto Richland	16.8%	↑ 0.9	MUSC	12.8%	↑ 1.4	Greenville	7.4%	↓ -1.1	5,463
Rheumatology	MUSC	43.5%	↑ 5.8	Palmetto	25.8%	↑ 5.1	Greenville	9.7%	↓ -8.8	124
Trauma care- Medical	Palmetto Richland	24.6%	↑ 0.9	MUSC	23.6%	↑ 1.7	Greenville	17.2%	→ -0.4	647
Trauma care- Surgical	MUSC	29.0%	↑ 2.7	Palmetto	25.9%	↑ 3.4	Greenville	19.7%	→ -0.4	259
Overall	MUSC	16.9%	→ 0.4	Greenville	15.5%	↑ 0.5	Palmetto	14.8%	→ 0.4	38,489

*Note: Service lines listed include those with greater than 100 cases, the total includes all cases



Children's Hospital and Women's Pavilion



Changing What's Possible





Children's Hospital / Women's Pavilion --a few stats

- Groundbreaking - 2016
- Open - Fall 2019
- Cost - \$350 million
- Philanthropy - \$50 million
- Why?
 - Maintain high acuity pediatric / perinatal services to state
 - Prepare for next generation healthcare technology / patient care delivery



MUSC Children's Hospital and Women's Pavilion Guiding Principles

Optimize Patient and Family-Centered Care

Actively support families in the care and decision-making of patients
Consistently promoting a positive patient and family experience

Create a supportive and healing environment

- Natural Light
- Reduced Noise
- Restorative spaces
- Improved way-finding
- Sustainable
- Educational

Create an efficient environment

- Ergonomic design
- Reduced travel distances
- Collaborative spaces
- Standardization
- Accountability
- Data-Driven
- Flexibility

Maximize flexibility & adaptability of new space

- Standardization
- Universal rooms
- Modular design
- Infrastructure
- Emerging technologies
- Changing clinical practice
- Future opportunities for growth

Drive Safety at every level

- Supportive and forward-thinking technology
- Standardization
- Seamless inter-disciplinary communication
- Mindful of Best Practices and Evidence-Based Design
- Transparency

Create a place that belongs

- MUSC
- Neighborhood
- Charleston
- Climate
- Orientation
- Location
- Uniqueness

Create an inspiring, distinctive and imaginative environment

- Beautiful
- Playful
- Transformative
- Intriguing
- Colorful
- Light Filled
- Welcoming
- Respect diversity of experience

Changing What's Possible

Children's Hospital & Women's Pavilion: Pediatric Summary

Service	Have	Need	Program	Comments
Peds Acute	95	106	108	3 floors of 36 beds
Peds Critical Care	25	30	30	1 floor of 30 beds
NICU	66	82	80-88	4 groups of 20 rooms on 1 floor
OR	N/A	9	10	48 prep/recover, 15 PACU, 2 ORs at 720 sqft
Procedure	4	4	4	
Cardiac Cath/EP	2	2	2	
Endoscopy	2	2	2	
CT	1	1	1	10 sedation bays to support CT & MR
MRI	1	2	2	10 sedation bays to support CT & MR
Ultrasound	N/A	2	2	
Nuclear Med	2	0	0	Use ART
ED	12	18	18	2 trauma, 2 psych, 14 exam, 1 cast, 1 dental
Clinics	105	84	24	2 modules of 12 rooms

Changing What's Possible

Children's Hospital & Women's Pavilion: Pediatric Summary

Service	Have	Need	Program	Comments
Infusion			8	
Advanced Fetal Care Clinic			4	
Sleep Lab			0	Utilize inpatient beds
Dialysis			0	Utilize infusion or portable boxes
Pre-Anesthesia Testing			4	2 exam, 2 blood draw

Service	Have	Need	Program	Comments
Women Acute	36	34	36	1 floor of 2 units with 18 beds each
LDR	9	11	11	
Nursery	10	7	7	
OR	N/A	1	1	
Procedure	0	1	1	
C-Section OR	2	2	2	

Changing What's Possible



Children's Hospital & Women's Pavilion: Support Services

Service

Pharmacy – Central + OR

Materials Management

Lobby

Retail – Gift Shop + Coffee

Spirituality Center

Administration

IT

Infection Control

Guest Relations

Quality Assurance

Radiation Safety

Physician Lounge/On-Call Suite

Health Info Management

Volunteer Services

Admitting/Registration

Changing What's Possible

Service

Food Services

Human Resources

Clinical Engineering

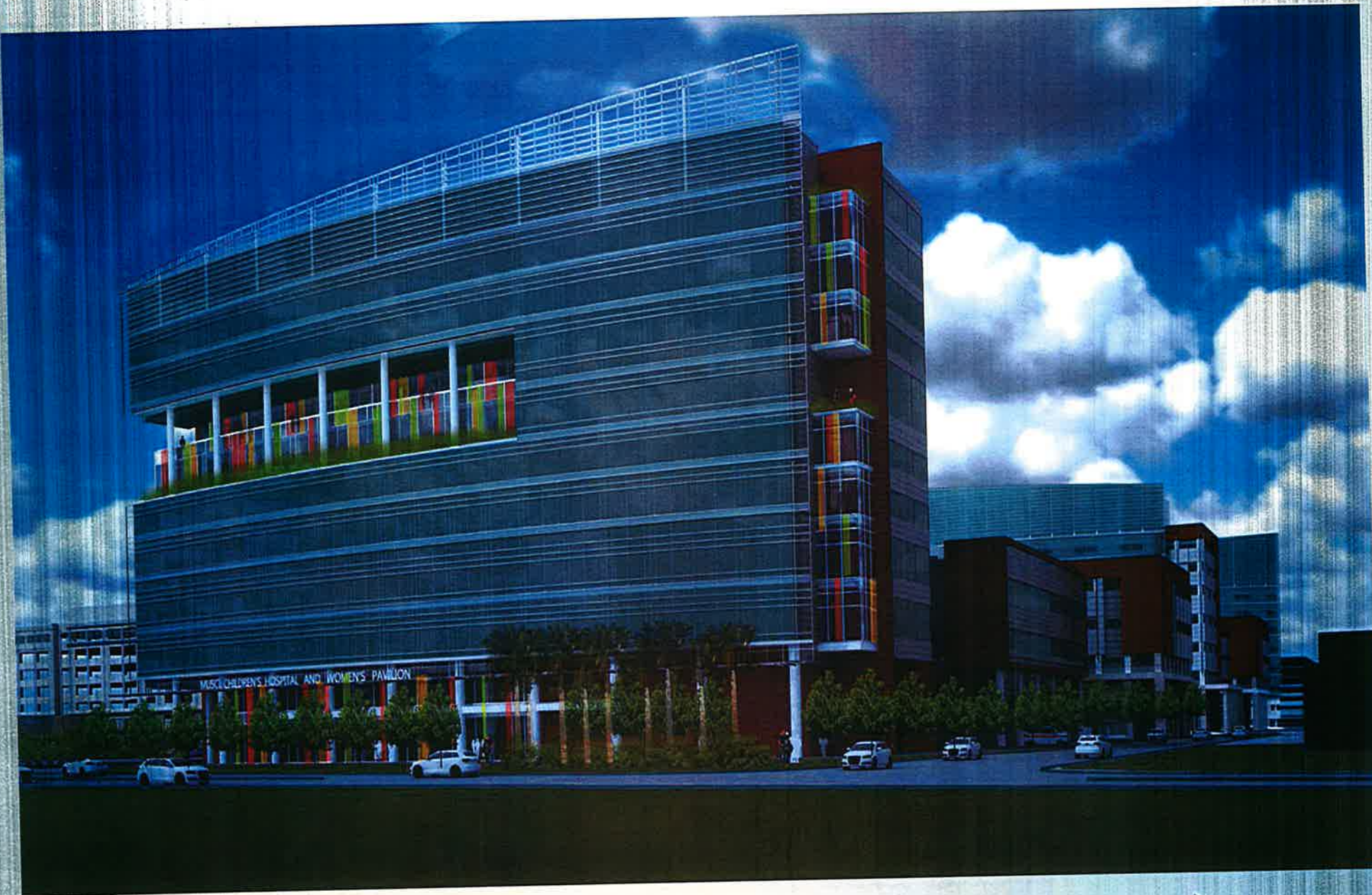
Environmental Services

Facilities

Staff Lockers & Break Rooms

Sterile Supply Staging

Family Amenities & Support Center



Changing What's Possible



Questions/Comments



Changing What's Possible



MUSC Telehealth



Changing What's Possible

SOUTH CAROLINA
Telehealth
ALLIANCE



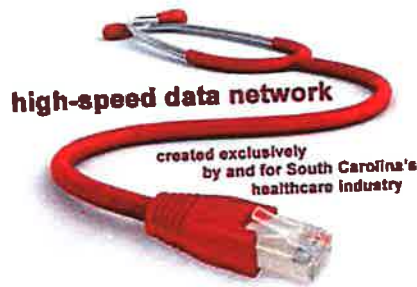


Strategy 1: Statewide Collaboration



eHEALTH INNOVATIONS

Center for TeleHealth



South Carolina Office of
Rural Health



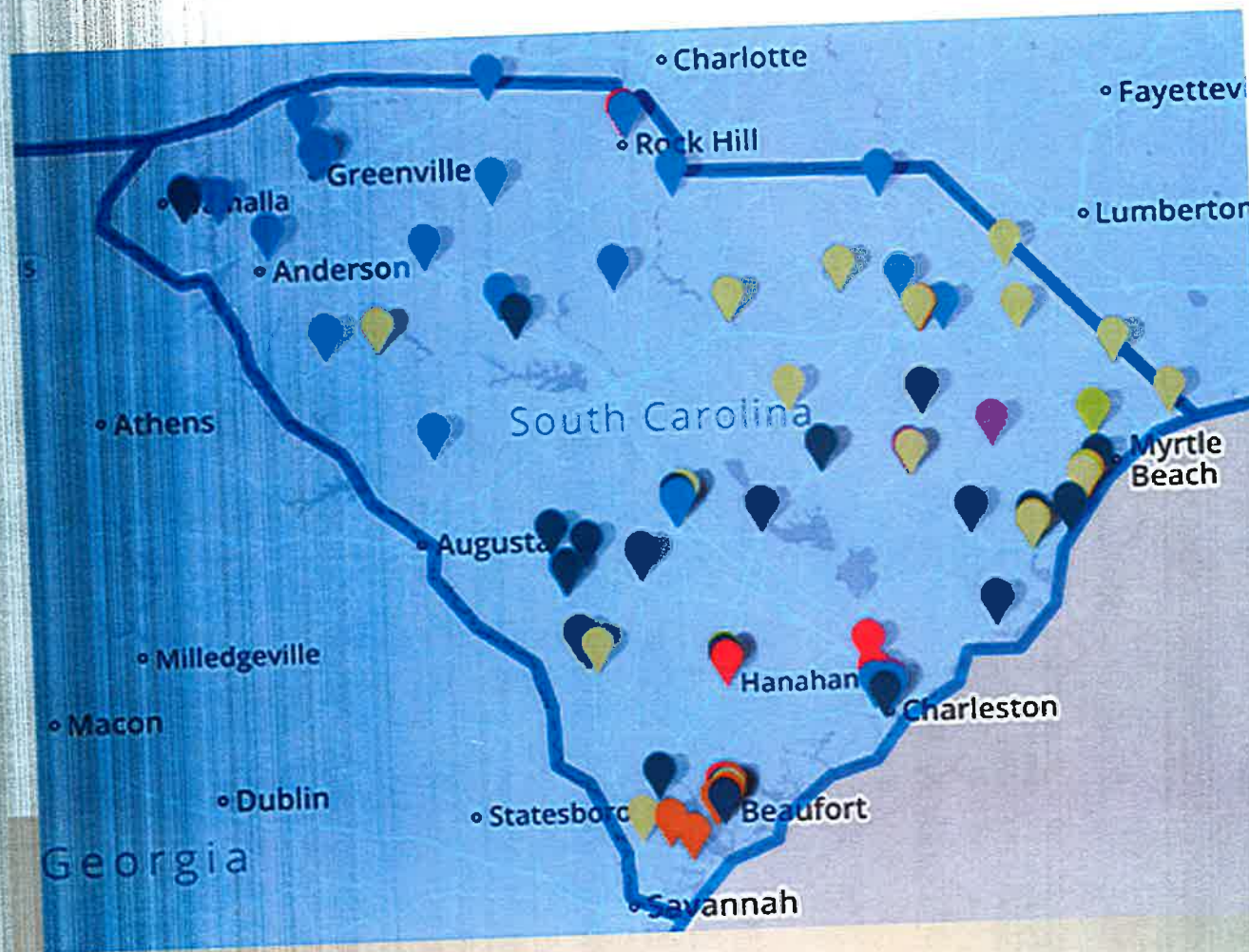
GREENVILLE
HEALTH SYSTEM

Changing What's Possible





MUSC has a statewide presence as the leading provider of specialized care to South Carolinians from the Tri-County area to the Pee Dee region to the Upstate.



Telehealth Locations

- Education Services
- Maternal Fetal Programs
- Virtual Tele Consult
- Pediatric Emergency & Critical Care
- School-based Programs
- Telestroke Programs
- Telemental Health



MUSC Telehealth: Year in Review

In 2014 MUSC:

- Formed the South Carolina Telehealth through a collaborative strategic planning process
- Established pathways for connectivity across the spectrum of care



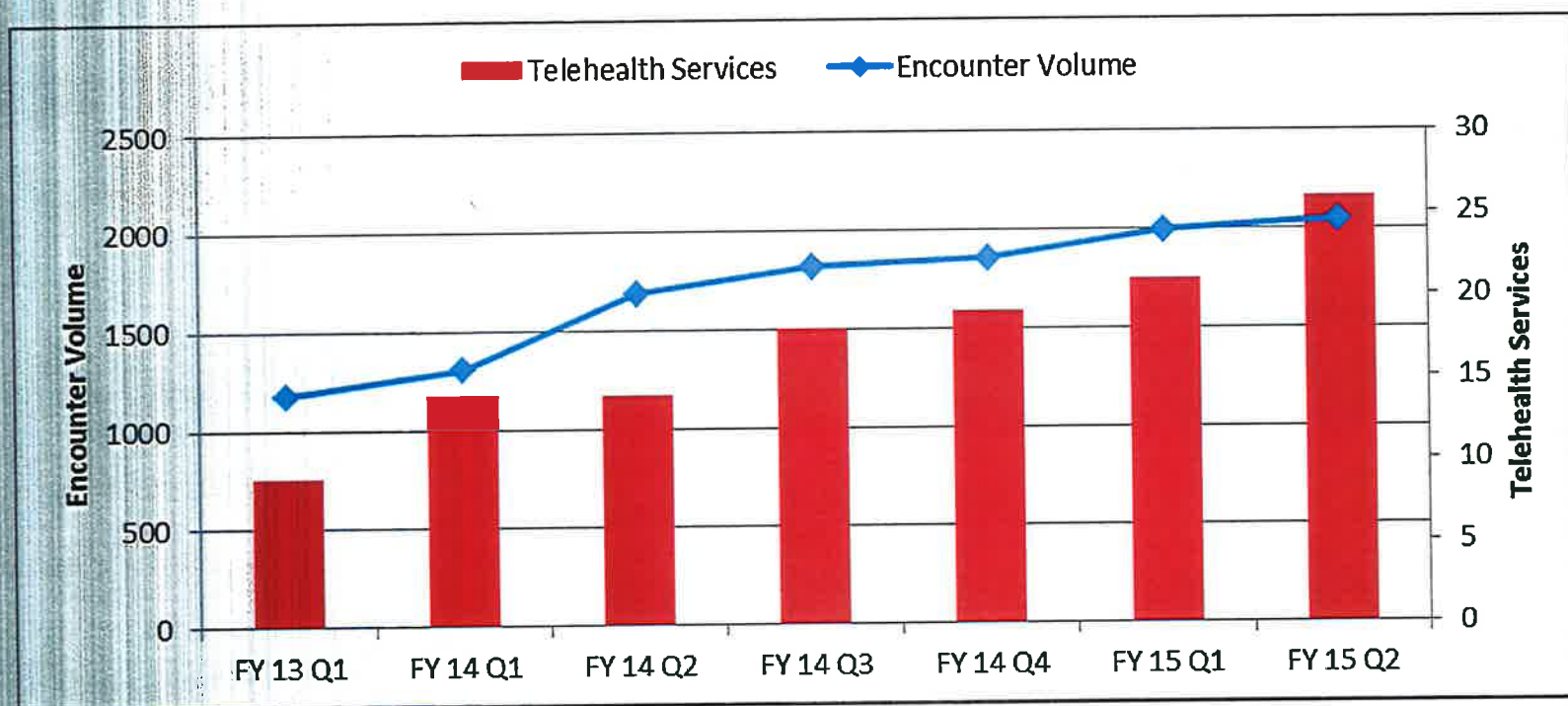
- Provided 8,000 teleconsultations
- Now have over 70 connected sites
- Offer 26 specialty services in 20 counties

Changing What's Possible





MUSC Telehealth: Year in Review



Changing What's Possible



MUSC Telehealth: Year in Review

Champion Programs

- Telestroke: Now 96% of South Carolina residents live within an hour drive of expert stroke care
- ICU Innovations: Launching MUSC coverage in July, current users witnessing 17% drop in mortality and 40% drop in ICU readmissions
- School-based care: Opening new portals for pediatric care in 14 sites over 4 counties, anticipating as much as a 50% reduction in emergency room use
- Outpatient Consultations: Obstetrics and mental health provide 100's of consults every week, and new service use has grown by 140%, supplying specialty services to 13 counties
- Inpatient and Emergency Teleconsultation: Grown to 6 services, saving \$13,500 per air transfer avoided

Changing What's Possible





South Carolina Telehealth Alliance

- The Alliance provides:
 - Transparency and a venue for collaboration in telehealth efforts
 - Development of a common infrastructure for all telehealth providers to utilize
 - An oversight mechanism to monitor quality, standard of care and the impact on South Carolina communities

Changing What's Possible

SOUTH CAROLINA
Telehealth
ALLIANCE





South Carolina Telehealth Alliance --Vision

Telehealth:

- Will grow to support delivery of health care to all South Carolinians with an **emphasis on underserved and rural communities.**
- Will facilitate, coordinate and make more accessible quality care, education and research that are patient centered, reliable and timely.
- **South Carolina will become recognized nationally for telehealth that is uniquely collaborative, valuable and cost effective.**

Changing What's Possible

SOUTH CAROLINA
Telehealth
ALLIANCE





South Carolina Telehealth Alliance ---Driving Strategies

1. Deploy a coordinated, open-access telehealth network in South Carolina.
2. Understand and effectively respond to the needs of users of telehealth with an emphasis on the underserved and rural.
3. Invest in expanding needed specialty and subspecialty capabilities through telehealth.
4. Conduct statewide education, training and promotion to providers and the public to accelerate and spread adoption of telehealth.
5. Develop a telehealth organization structure that encourages and facilitates statewide collaboration among providers in the delivery of health care, education and research.
6. Demonstrate to legislators, payers, providers and the public, the impact of telehealth in improving access, quality and affordability.

Changing What's Possible





Strategy Update: Develop a telehealth organization structure that encourages and facilitates statewide collaboration

- Establish a SC Telehealth Advisory Council
- 11 members, 2 year non-recurring term:
 - 2 rural health providers
 - 3 telehealth experts from different academic institutions
 - 1 member representing Palmetto Care Connections
 - 1 member representing the General Assembly
 - 1 member representing Department of Mental Health
 - 1 member representing ETV
 - 1 member representing DHHS

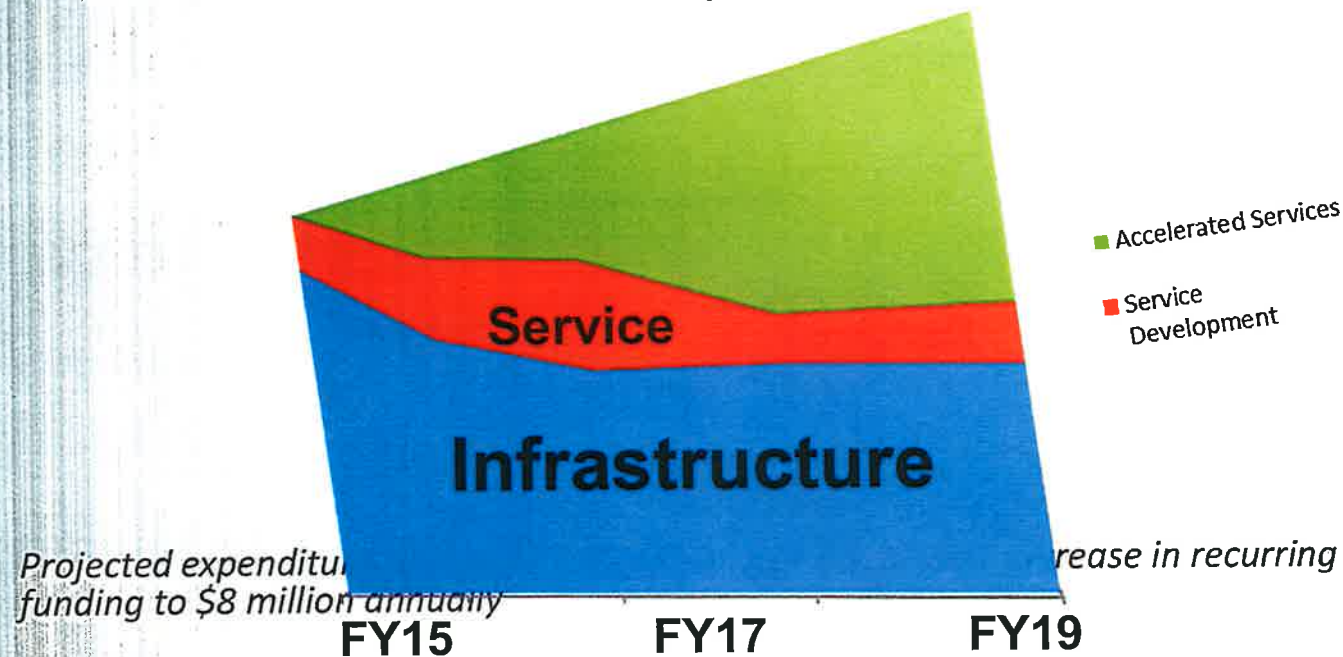
Changing What's Possible

SOUTH CAROLINA
Telehealth
ALLIANCE



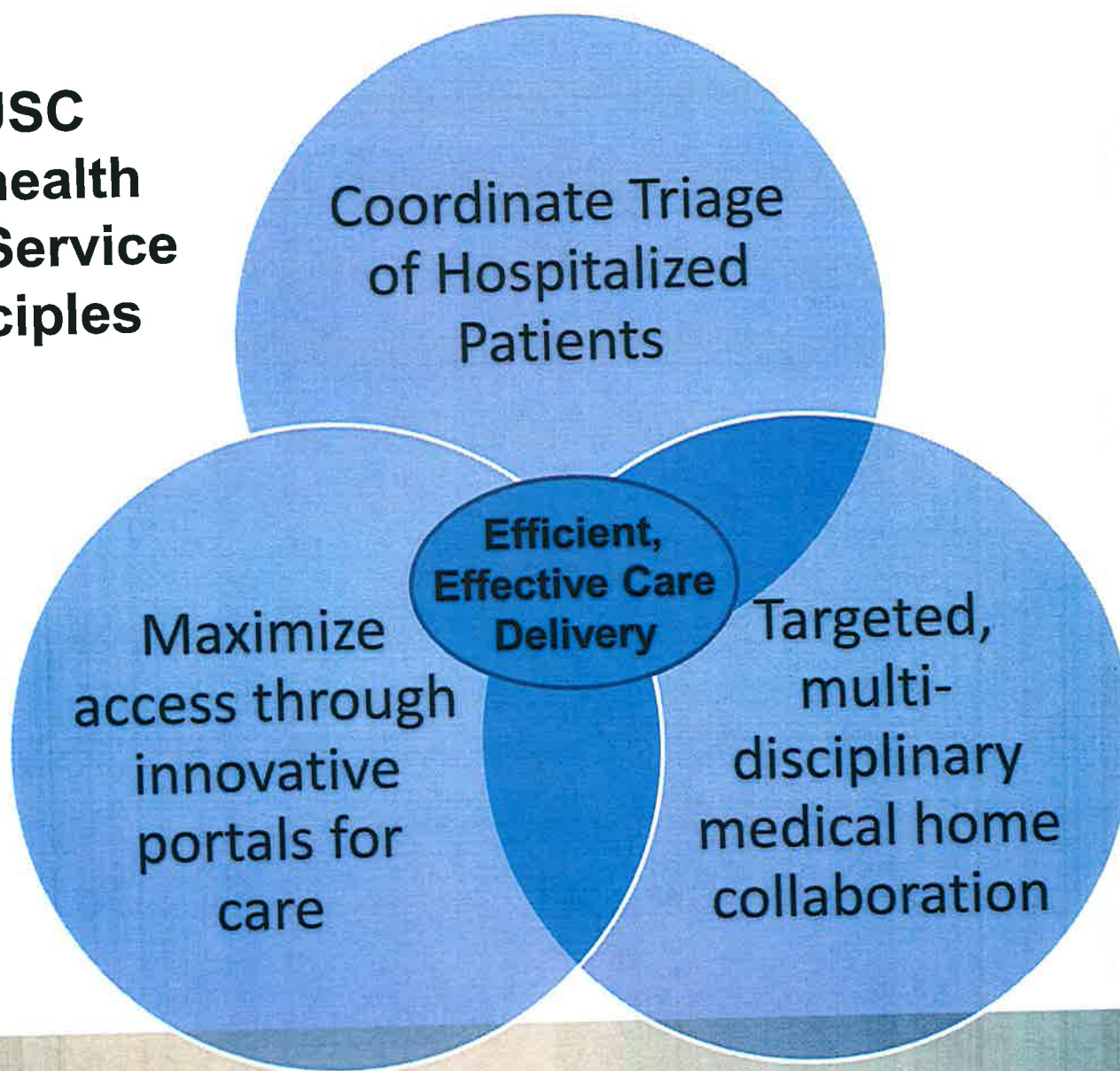
Accelerated Care Transformation

- Every additional investment above the current plan accelerates service development



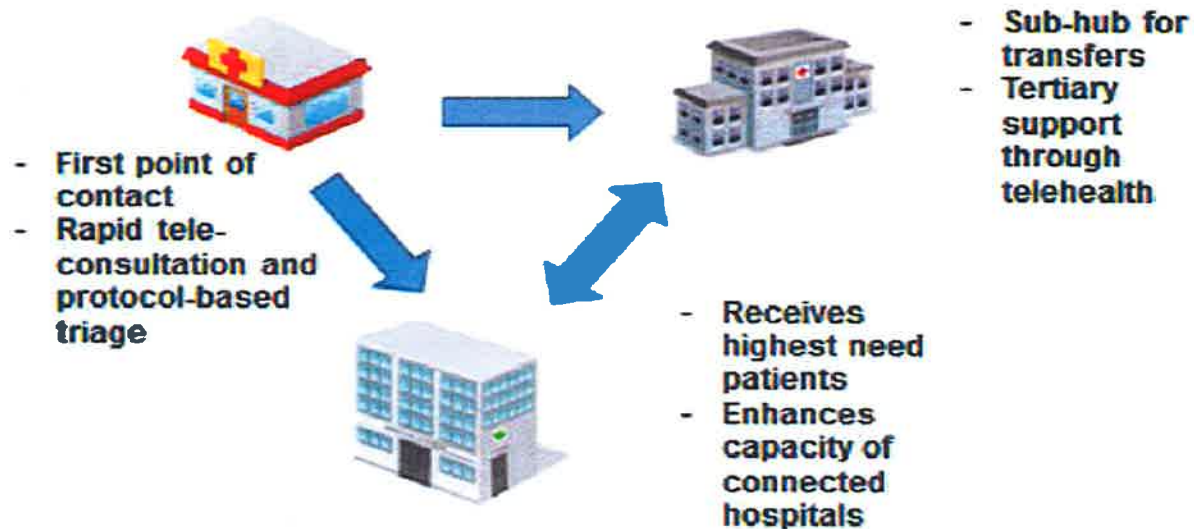
MUSC

Telehealth Core Service Principles



Changing What's Possible

Efficient Use of South Carolina Hospital Resources



Changing What's Possible



BUDGET REQUESTS & PROVISOS

Changing What's Possible





MUHA Budget Requests

FY2015-16

Request Type	Amount
Women's and Children's Hospital	\$20,000,000
Telemedicine	\$14,000,000
• \$10,000,000 recurring	
• \$ 4,000,000 non-recurring	

Changing What's Possible





Provisos

23.1. (MUSC: Rural Dentist Program) The Rural Dentist Program, in coordination with the Department of Health and Environmental Control's Public Health Dentistry Program, is established at the Medical University of South Carolina. The funds appropriated to the Medical University of South Carolina for the Rural Dentist Program shall be administered by the South Carolina Area Health Education Consortium physician recruitment office. The costs associated with administering this program are to be paid from the funds appropriated to the Rural Dentist Program and shall not exceed four percent of the appropriation. The Medical University of South Carolina is responsible for the fiscal management of funds to ensure that state policies and guidelines are adhered to. MUSC shall be permitted to carry forward unspent general funds appropriated to the Rural Dentist program provided that these funds be expended for the program for which they were originally designated. A board is created to manage and allocate these funds to insure the location of licensed dentists in rural areas of South Carolina and on the faculty of the College of Dental Medicine at MUSC.



Provisos (Continued)

23.2. (MUSC: Telemedicine) From the funds appropriated to the Medical University of South Carolina for the MUSC Hospital Authority, the Authority is directed to continue the development of its Telemedicine network. The MUSC Hospital Authority shall determine which hospitals are best suited for a Telemedicine partnership. **Action Requested - KEEP**

23.3. (MUSC: Rural Access Plan) The MUSC Hospital Authority, in conjunction with the Department of Health and Human Services, shall study how to partner with existing rural hospitals to ensure that these regions maintain access to medical care. **Action Requested - KEEP**