2024 **QUALITY & SAFETY REPORT**

MUSC Health
Medical University of South Carolina

Changing What's Possible

Dear MUSC Health community,

The Quality and Safety Annual Report serves several vital functions for the clinical enterprise. It allows our care team members to reflect upon past accomplishments and recommit to areas needed for continuous improvement. It also encourages our team to revitalize our commitment to continuous learning, innovation and improvements on behalf of the patients and families we serve.

These past few years have been marked by many accomplishments and goal achievements, including our continued growth of the Regional Health Network and deepening the addition of the Orangeburg community to the MUSC Health family. What our teams have realized is that with ongoing growth comes the need for standardization and systemization; our framework of high reliability continues to serve us well and reinforces the strategic advantage we have with engaged leaders, robust process improvement and a high culture of safety.

Through our tireless high-reliability efforts over the course of many years, MUSC Health's quality and safety missions have been successful throughout expansive growth of the health system. Our teams have been able to meet and exceed most all of our quality and safety goals throughout the enterprise with exceedingly few serious safety events. The ability of our teams to create new ways to design and deliver care has been extraordinary. Our teams have embraced standardization in safety care bundles, daily safety huddles, visual management boards, safety rounds, care variation pathways, accountable care measures and many more.

As the clinical enterprise continues to grow in size, scope and complexity, quality and safety can never be compromised. We will continue to focus relentlessly on both process and outcome metrics and goal accomplishments to ensure that our hard work results in better patient outcomes.

At the same time, as a health care system, we continue to transition from volume to value and grow and refine our population health efforts. This requires our people and our systems to work extremely efficiently and effectively in all areas. Our Baldrige framework continues to serve us well in achieving such a balanced approach to performance excellence, which helps our organization to be focused, unified, efficient and effective. The Baldrige framework serves as a "binder" that helps the organization to focus on its mission, vision and values, with a heavy emphasis on the process areas of leadership, strategy, customers/market, workforce/knowledge, operations/continuity, community engagement and finance. Within these areas, each has an expectation to meet and exceed the relevant outcome measures within its realm.

We continue to be confident that this framework will help our organization to deliver on our mission and exceed all of our metrics and goals, particularly as we grow and shift from volume to a value focus. With Baldrige and the concept of high reliability, we are confident that we can meet and exceed each and every challenge.

As we plan for the future, what will we continue to do, and what will we do differently?

As MUSC Health continues to grow in size, scope and complexity, it is more important than ever that we have a system-level infrastructure to ensure "systemness" across all areas, in relation to quality and safety. The Quality Assessment and Performance Improvement (QAPI) Executive Committee and Quality Oversight Council (QOC) monitors quality and safety in all areas, including all four divisions as well as contracted services, affiliations and joint ventures. The expectation is that each area reports regularly to the QAPI Exec and QOC on their process and outcome measures, relevant benchmarks and improvement efforts. This reporting, coupled with meeting set benchmarks and demonstrating continuous improvement, ensures that the organization achieves performance excellence in all areas without exception. Effective quality governance is more important than ever, given our ongoing growth, including an ever-growing list of flourishing affiliations and joint ventures.

Danielle Scheurer, M.D.
Chief Quality Officer, MUSC Health

Organizational profile

The senior leadership team of MUSC Health sets the mission, vision and values of the organization and reinforces them through their words and actions.

MUSC HEALTH MISSION

- We improve health and maximize quality of life through education, research and patient care.

MUSC HEALTH VISION
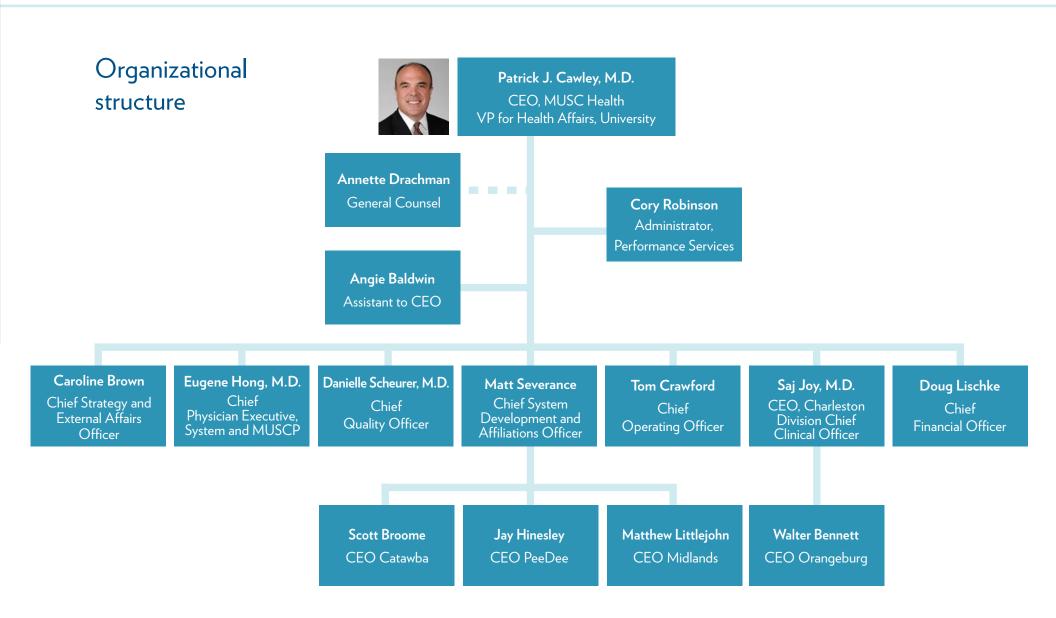
- Leading health innovation for the lives we touch.

MUSC HEALTH POSITION STATEMENT

- Changing What's Possible.

MUSC HEALTH VALUES

- Compassion
- Teamwork
- Diversity
- Accountability
- Innovation

Organizational structure

Patrick J. Cawley, M.D.
CEO, MUSC Health
VP for Health Affairs, University

Annette Drachman
General Counsel

Cory Robinson
Administrator,
Performance Services

Angie Baldwin
Assistant to CEO

Caroline Brown
Chief Strategy and
External Affairs
Officer

Eugene Hong, M.D.
Chief
Physician Executive,
System and MUSCP

Danielle Scheurer, M.D.
Chief
Quality Officer

Matt Severance
Chief System
Development and
Affiliations Officer

Tom Crawford
Chief
Operating Officer

Saj Joy, M.D.
CEO, Charleston
Division Chief
Clinical Officer

Doug Lischke
Chief
Financial Officer

Scott Broome
CEO Catawba

Jay Hinesley
CEO PeeDee

Matthew Littlejohn
CEO Midlands

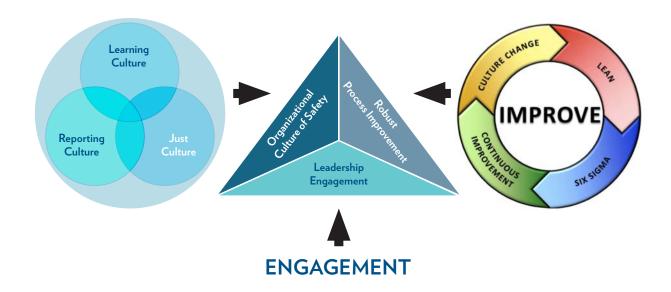**Walter Bennett**
CEO Orangeburg

LEADERSHIP

MUSC Health heavily invests in recruiting and retaining excellent leaders to exceed expectations every day. The leadership recruitment process begins with a clear vision of what the organization needs to achieve and finding people with the perfect knowledge, skills and attitudes to lead us there. Once recruited, MUSC Health further invests in leaders' growth via multi-modal trainings to ensure the highest performance.

Leaders are continuously cultivated through online and in-person learning and development opportunities, including quarterly off-site Leadership Development Institutes, diversity trainings, Just Culture classes, Safety Coach trainings and other interactive learning.

Leaders have several structured communication modalities to ensure that care team members are engaged, informed and committed to exceeding expectations of performance.

Leaders ensure performance expectations are met by utilizing a robust Performance Management System, which includes a mature goal development and cascading system tied to compensation, at all levels of the organization.

Senior leaders utilize the framework of high reliability to ensure performance excellence across all areas. Within high reliability, one area of particular emphasis for leaders has been the training and execution of a Just Culture. MUSC Health has worked tirelessly to provide convenient and engaging training to become Just Culture certified. As of now, MUSC has more than 600 certified leaders across the enterprise, which is more than any other health system in the country. The Just Culture curriculum has been woven into all new care team member onboarding and annual trainings.

Medical University of South Carolina				
MUSC Health				University
MUSC University Health Network	MUSC Regional Health Network			COM
Charleston Division [Tri-county/Orangeburg]	Pee Dee Division	Catawba Division	Midlands Division	CON
MUSC Physician Employment Entities [MUSCP, MCP, MHP]				COP
MUHA Related Entities [Tidelands Health, Encompass, Imaging Centers, etc.]				CGS
Affiliates [Doctors Care, AnMed, Beaufort Memorial, Hampton, etc.]				CDM
MUSC Health Shared Services [ICCE, Revenue Cycle, Recruiting, etc.]				CHP
MUSC Shared Services [IS, Legal, HR, Development, Marketing/Comms, External Affairs, etc.]				

Learning Culture

Reporting Culture

Just Culture

Organizational Culture of Safety

Robust Process Improvement

Leadership Engagement

IMPROVE
CULTURE CHANGE
LEAN
SIX SIGMA
CONTINUOUS IMPROVEMENT

ENGAGEMENT

Senior leaders use a variety of organization scorecards to monitor goal progress throughout the year. For transparency and ease, these scorecards are available to all care team members and allow "drill down" for specific action plans to be constructed and deployed. Divisional Performance Excellence Committees (PECs) ensure that each balanced scorecard is reviewed in detail with action plans for each Opportunity for Improvement (OFI).

Organization Score

| 1 | 2 | 3 | 4 | 5 | 4.15 |

Improving	Declining	Stable	Unavailable (No Data)
▶	◀	■	☐

Service	People	Quality/Safety
4.2	3.2	4.0

Finance	Growth	Innovation
4.8	4.0	5.0

All MUSC Health divisions have met or exceeded expectations on most of these key performance indicators this year. The overall balanced scorecard for MUSC Health has improved year over year, indicating highly effective governance, performance management and operational effectiveness.

System scorecard performance

Quality & safety pillar performance

In addition to the overall balanced scorecard, Quality and Safety Pillar performance has also improved year over year. The Quality and Safety Pillar reflects a combination of inpatient metrics, ambulatory metrics, culture of safety and post-acute care metrics.

STRATEGY

The MUSC Health strategy development process includes multiple prompts to stimulate and incorporate innovation. The strategic planning process allows MUSC Health to develop strategic objectives that produce sustainable results through clearly defined guiding principles. All new opportunities are evaluated to ensure that they align with one of the initiatives in MUSC Health's strategic plan.

The strategic planning process ensures that MUSC Health is exceeding the expectations of market demand for the good of our patients and their families. This is conducted through a comprehensive four-step process, which allows us to meet our short- and long-term goals.

Based on the MUSC Health core value of innovation, our strategic planning team heavily relies on innovation practices and principles to change the business for the better on a constant basis.

Strategy Development Process

STEP 1

Preplanning/Framing
What is the mission/vision for the organization/ICCE? What are the program definitions? What are the market or geographic boundaries? What are the work steps and timeline?

STEP 2

Current assessment
External: population demographics; incidence/prevalence/growth rates; market data.
Internal: volume and financial trends; facility assets issues; IT capabilities.
Key stakeholder interviews: human resource capabilities or limitations; SWOT.

STEP 3

Future direction
What are the critical planning issues? What are the strategic options? What are the implications of the preferred strategies?

STEP 4

Implementation
Development of tactics; identification/assignment of strategy leaders; identification of metrics; timeline with responsible parties; quarterly report out/monitoring.

QUARTER 1
- Operating plan launch and communication.
- Goals "Go-live."

QUARTER 4
- Budget, capital and space approvals.
- Marketing plan development.
- Operating plan development.
- Finalize and cascade goals.

QUARTER 2
- Budget pre-planning.
- Strategy pre-planning/ Market refresh.
- Manpower forecast.

QUARTER 3
- Strategic plan refresh (ICCE, Divisions).
- Recruitment plans.
- Budget, capital and space planning.
- Goal setting begins.

Corporate approvals

Performance Monitoring

Implementation

Annual plan development

MUSC HEALTH STRATEGIC INTENT
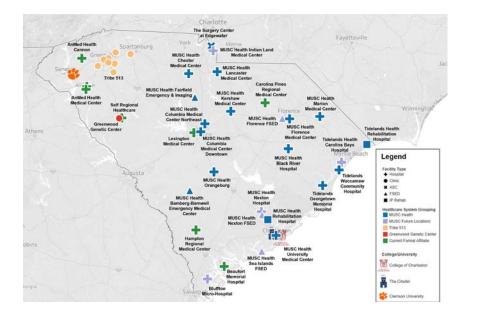Become a high-performing, integrated academic health system.

CUSTOMERS

MUSC Health recognizes the importance of incorporating patients and their families into our mission, vision and values. Care team members understand that in order to provide excellence in patient care, it is critical that patients and their families partner with care team members in the delivery of their care.

Our patients and their families are at the center of everything we do. We ensure that all care team members remain patient- and family-centered by a variety of "listening methods," which undergo constant refinement.

Through our patient and family advisory councils (PFACs), MUSC Health is increasing efforts to partner with patients and families in policy and program development, patient safety, quality improvement, patient experience, health care redesign, professional education and facility design planning. The number of PFAC members and the number of requests for support has grown every year.

We measure how our care team members feel about the impact of our patient-family advisors on activities at MUSC Health: 100% feel they are helpful or essential, and 100% would partner with them again. The patient-family advisors also feel meaningfully included at least most or all of the time.
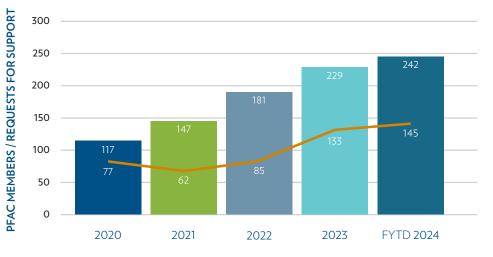
By being patient-and-family-centered, we have seen continued growth in our inpatient and outpatient care services, indicating that we are exceeding the care expectations of our patients.

Have you (PFAs) felt meaningfully included as a partner in the work being done?

0% Sometimes
0% Never
Most of the time
14%
86%
Always

Patient Family Advisory Council (PFAC)

PFAC MEMBERS / REQUESTS FOR SUPPORT

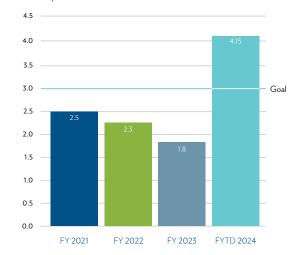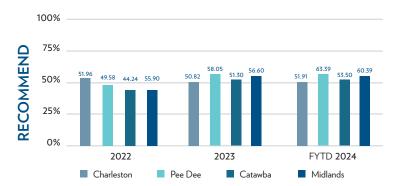|	2020	2021	2022	2023	FYTD 2024
Members	117	147	181	229	242
Requests for support	77	62	85	133	145

We constantly measure how well we are meeting patient and family expectations by a variety of patient surveys, which are benchmarked against other health care centers and used for constant feedback and improvement activities throughout the enterprise, particularly for inpatient, outpatient, Emergency Department and ambulatory surgeries.

Data from these four important surveys shows that we have been improving in our survey responses since 2022. MUSC Health has also made substantial progress in the overall service pillar year over year, which includes surveys from all areas of the system.
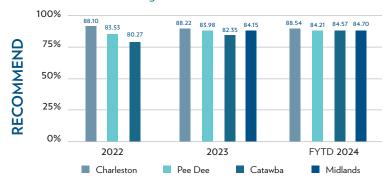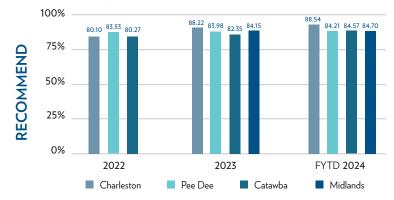
Service Pillar performance

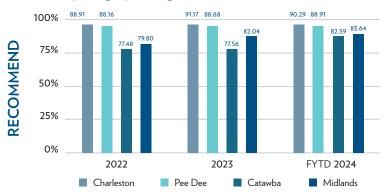Service Pillar performance chart (RECOMMEND axis 0.0–4.5):
- FY 2021: 2.5
- FY 2022: 2.3
- FY 2023: 1.8
- FYTD 2024: 4.15
- Goal line: 3.0

Medical Practice willingness to recommend

	Charleston	Pee Dee	Catawba	Midlands
2022	88.10	83.53	80.27	
2023	88.22	83.98	82.35	84.15
FYTD 2024	88.54	84.21	84.57	84.70

Inpatient willingness to recommend

	Charleston	Pee Dee	Catawba	Midlands
2022	80.10	83.53	80.27	
2023	88.22	83.98	82.35	84.15
FYTD 2024	88.54	84.21	84.57	84.70

ED willingness to recommend

	Charleston	Pee Dee	Catawba	Midlands
2022	51.96	49.58	44.24	55.90
2023	50.82	58.05	51.30	56.60
FYTD 2024	51.91	63.39	53.50	60.39

Ambulatory Surgery willingness to recommend

	Charleston	Pee Dee	Catawba	Midlands
2022	88.91	88.16	77.48	79.80
2023	91.17	88.68	77.56	82.04
FYTD 2024	90.29	88.91	82.59	83.64

MUSC Health utilizes innovative technologies to communicate with and engage our patients, including our patient portal for the medical record (called MyChart). MyChart is an interactive patient portal to the medical record, which allows patients to communicate directly with care team members, schedule appointments, request medication refills or pay their bills. Such access continues to increase each year, with greater than 4 million active and engaged patients and families. Get Well, formerly the GetWellNetwork, is another interactive inpatient engagement tool used for education and patient safety. Our patient utilization of Get Well is not only very high, but most patients rate Get Well as easy to use, effective and helpful for their care. Another recent technological addition is Notable, which serves as our digital front door, allowing patients and families to schedule or change appointments, send appointment reminders, pay their bills and pre-check in virtually. Notable is also identifying "care gaps," such as missed or delayed cancer screenings, and helping patients easily get needed care. For mammograms alone, Notable has enabled almost 2,000 booked appointments, achieving an impressive 96% overall satisfaction rate from users.

MUSC Health has also made substantial investments in virtual care technologies, such as virtual urgent care and telehealth. The former is an asynchronous virtual visit for unexpected or low-risk uncomplicated conditions, such as upper respiratory infections or rashes. Patients can request appointments and be "seen" virtually from the comfort and convenience of their own homes. These visits can be asynchronous or real-time, based on patient preference. Similarly, telehealth can be used for more complex care, including school-based, outpatient-based or hospital-based care, and it continues to grow year over year.
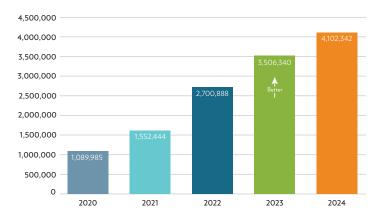
Number of MyChart users

Year	Users
2020	1,089,985
2021	1,552,444
2022	2,700,888
2023	3,506,340
2024	4,102,342

Better

Ambulatory Telehealth growth

Monthly from July 23 to July 24

- % of care that is virtual
- % of new patients that are virtual

The Get Well system was very effective at providing access to health education.

93% Agree
7% Disagree

The Get Well system helped me to be more involved in my care.

91% Agree
9% Disagree

- Agree
- Disagree

Hospital-based Telehealth Visits

Year	Visits
2020	8,316
2021	7,716
2022	9,009
2023	11,654
2024	12,672

WORKFORCE AND KNOWLEDGE MANAGEMENT

MUSC Health uses insights from its systemwide operations to foster ongoing learning and improvement and has also taken steps to promote a more personalized approach to continued educational growth.
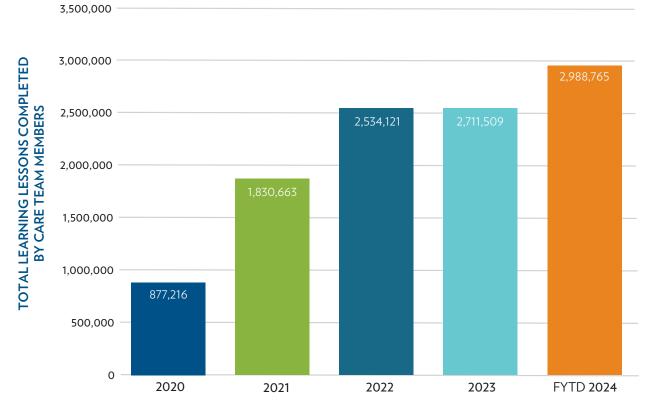
As a highly reliable organization, it is essential that information is available, accurate and reliable to support quality and safety. We ensure that our leaders and care team members have ready access to training and learning opportunities via both internal and external sources. One mechanism is an online learning portal called OurDay which houses millions of learning modules for our care team members to access and track 24/7. Team members accessed approximately 3 million learning lessons in FY 2024 alone.

We also support our teams' knowledge and skills building through scholarship programs, certification bonuses and tuition assistance programs.

Number of learning lessons completed by care team members

TOTAL LEARNING LESSONS COMPLETED BY CARE TEAM MEMBERS

Year	Value
2020	877,216
2021	1,830,663
2022	2,534,121
2023	2,711,509
FYTD 2024	2,988,765

Our care team members are the lifeblood of the organization. As such, MUSC Health has committed to keeping care team members engaged and safe so that they can do the same for our patients and their families.
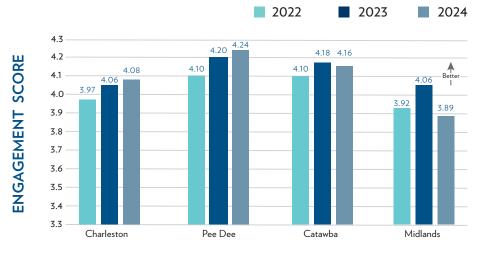
We measure our care team member engagement annually. Overall, MUSC Health care team member engagement improved year over year, particularly in the Pee Dee Division.

We also closely track our ability to retain our care team members, knowing that losing a care team member can disrupt the safety and operations of the enterprise. This is an ongoing opportunity for improvement in most divisions and an ongoing top priority for all divisions in the coming year. Due to this, the overall people pillar score did not improve year over year, but this will necessitate a substantial investment of energy and innovation for the coming year.
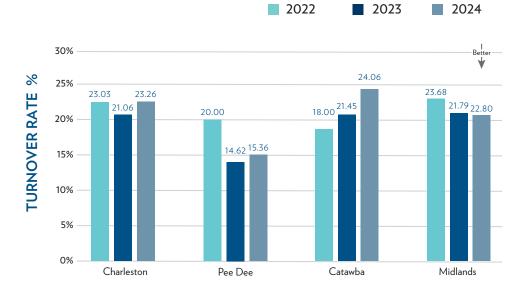

People Pillar performace

SCORECARD SCORE

Year	Score
FY 2021	2.4
FY 2022	1.1
FY 2023	4.7
FYTD 2024	3.2

Goal: 3.0

Overall MUSCH care team member engagement score

2022 **2023** **2024**

Nursing engagement overall score

2022 **2023** **2024**

MUSCH overall turnover rate

2022 **2023** **2024**

Within a high-reliability framework, we closely track how our care team members rate the culture of safety at MUSC Health. Similar to employee engagement, overall culture of safety scores improved year over year. We continue our focus on building a culture of safety through a variety of activities, including spending several hours a week in safety rounds, producing daily "safely speaking" emails and training for Just Culture and safety coaches in each division. With these activities, we will continue to improve our culture of safety throughout the health system. In addition, overall team member resilience has increased year over year, indicating a workforce that is highly activated and can handle organizational stress and disruptions.

These care team member safety programs also minimize the number of care team members who are injured at work.

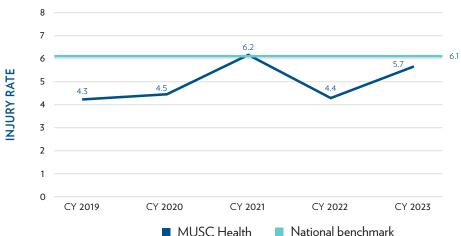## Just Culture and safety coach trainings

Legend: Safety coaches, Just Culture certified

Overall culture of safety survey score

Legend: 2022, 2023, 2024

Y-axis: SAFETY SURVEY SCORE

Charleston: 3.91, 3.99, 4.07
Pee Dee: 4.01, 4.01, 4.17
Catawba: 4.00, 4.11, 4.12
Midlands: 3.98, 3.98, 3.85

Workforce engagement

Legend: Overall engagement, Safety culture, Diversity index, Resilience

Total recordable injury rate

Y-axis: INJURY RATE

MUSC Health: CY 2019 4.3, CY 2020 4.5, CY 2021 6.2, CY 2022 4.4, CY 2023 5.7
National benchmark: 6.1

Legend: MUSC Health, National benchmark
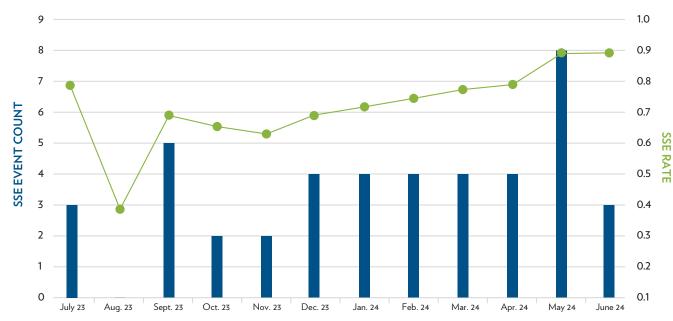
System harm rate

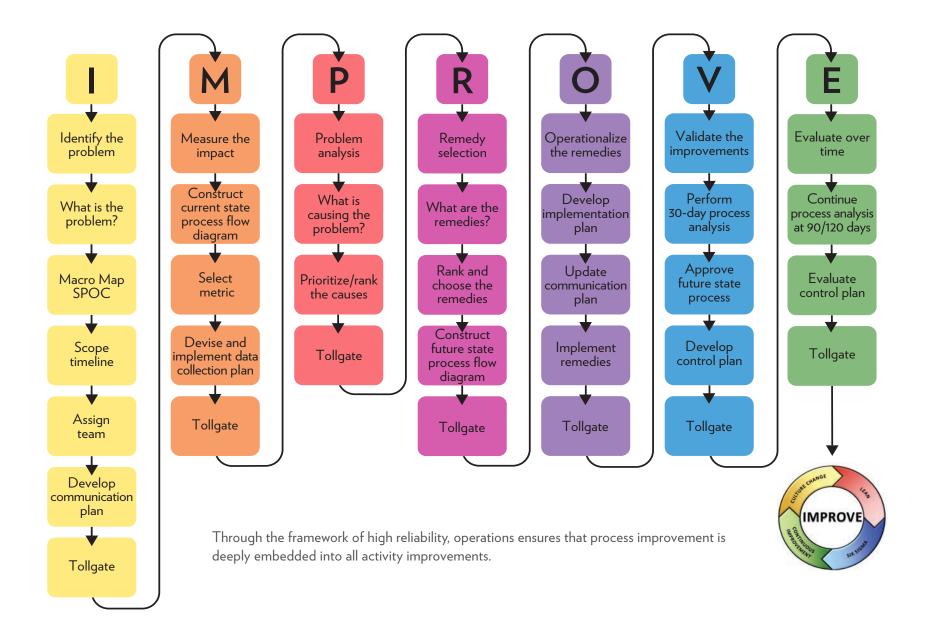

Serious safety event count

Another good indication of our culture of safety is our reporting culture. This reflects the willingness of our care team members to report harm, near misses and unsafe conditions. We track the total volume of event reports as well as the percentage of reports that represent actual harm. In a high culture of safety, overall reporting should be high, but the percentage of reports that represent harm should be low. The overall average of greater than 2% indicates that over 98% of all reported events are near misses or unsafe conditions, which is far better than the national average.

Ultimately, through these efforts to improve the culture of safety, we also need to ensure that patient care is becoming safer in the organization. We track this by our "serious safety event rate," which measures all preventable harm throughout the clinical enterprise. This has been very low and very consistent year over year despite substantial ongoing growth.

OPERATIONS

Our key work processes are those that represent the most significant impact on the performance of operations, delivery of patient care and fiscal sustainability of the organization. These include long-term planning for events such as environmental emergencies and unit-by-unit, real-time assessments of operational readiness.

Our operational structure is facilitated through our Integrated Centers for Clinical Excellence (ICCE). Each ICCE is co-led by a physician ICCE chief and ICCE administrator. This dyad structure ensures the successful operations and quality-safety of all patient care activities.

Patient-focused ICCEs

Acute, Critical and Trauma Care

Cancer

Children's and Women's

Digestive Disease, Endocrine and Metabolism

Heart and Vascular

Musculoskeletal

Neurosciences

Primary Care

Specialty Surgery and Spine

Transplant, Nephology and Hepatology

Collaborative ICCEs

Anesthesia

Genetics and Genomics

Health, Wellness, and Human Performance

Mental Health

Path and Lab

Pharmacy

Radiology

South Carolina Department of Corrections

I

Identify the problem

What is the problem?

Macro Map SPOC

Scope timeline

Assign team

Develop communication plan

Tollgate

M

Measure the impact

Construct current state process flow diagram

Select metric

Devise and implement data collection plan

Tollgate

P

Problem analysis

What is causing the problem?

Prioritize/rank the causes

Tollgate

R

Remedy selection

What are the remedies?

Rank and choose the remedies

Construct future state process flow diagram

Tollgate

O

Operationalize the remedies

Develop implementation plan

Update communication plan

Implement remedies

Tollgate

V

Validate the improvements

Perform 30-day process analysis

Approve future state process

Develop control plan

Tollgate

E

Evaluate over time

Continue process analysis at 90/120 days

Evaluate control plan

Tollgate

Through the framework of high reliability, operations ensures that process improvement is deeply embedded into all activity improvements.

IMPROVE

CULTURE CHANGE · LEAN · SIX SIGMA · CONTINUOUS IMPROVEMENT

Emergency preparedness index

Chart showing Emergency preparedness index from 2020 to 2024:
- 2020: 1.75
- 2021: 1.19
- 2022: 1.19
- 2023: 0.92
- 2024: 0.76

Goal line at 1.0. "Better" arrow pointing down.

MUSC Health maintains a robust and proactive infrastructure to mitigate disturbances due to weather and to recover from any type of disaster. The disaster preparedness team keeps all care team members informed, engaged and prepared through a variety of simulations and drills throughout the year. Particular emphasis has been placed on reducing threats due to Information Technology (IT) incidents. These risks represent a large portion of our drills and exercises and have resulted in most IT incidents having only low to moderate impact. Overall, the organizational cyber maturity score has risen year over year, according to goal.

The goal is to have more drills than events, indicating high preparedness and likelihood for business continuity. The overall index comparing events with drills is less than 1.0 year over year.
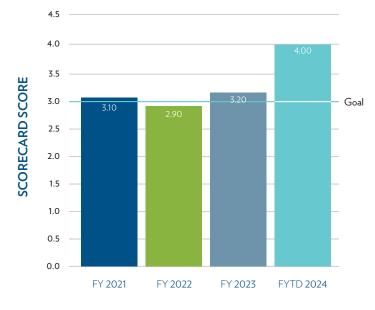
IT security incidents

Stacked bar chart showing INCIDENTS by month (July 23 – Mar. 24), categorized by Low, Moderate, High, Critical. "Better" arrow pointing down.

Legend: ■ Low ■ Moderate ■ High ■ Critical

Cyber maturity score

Chart showing Cyber maturity score, Goal (bars) vs Actual (line):

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FYTD 2024
Actual	1.5	2.0	2.45	2.81	3.01	3.16
Goal	1.5	2.0	2.5	2.8	3.0	3.15

"Better" arrow pointing up.

Legend: ■ Goal ■ Actual

Innovation Pillar performance

The Innovation Pillar has achieved a perfect score of "5" year over year, indicating a deep and relentless commitment to innovation.
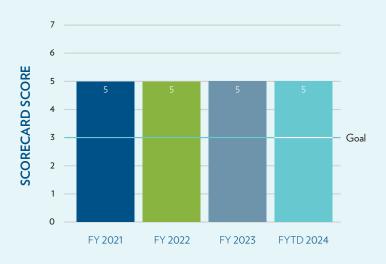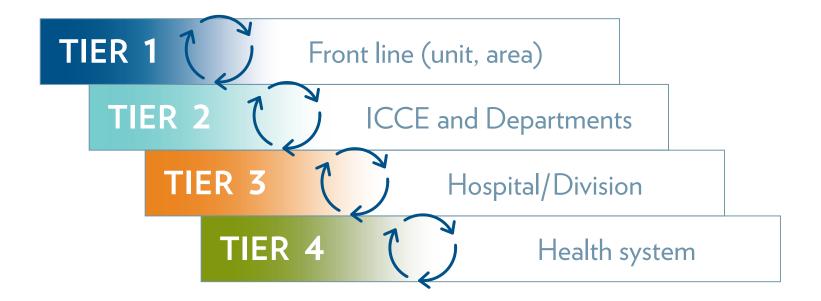

Growth Pillar performace

MUSC Health tracks overall growth as a strategic and operational goal and has outperformed goal the past two years

As a highly reliable organization, the operations team oversees all manner of daily communications to inform and assist care team members with any daily operational challenges that could threaten quality or safety. To ensure highly reliable communication throughout the organization, MUSC Health has implemented a four-tiered daily brief system. These briefs start at the unit level and escalate up to the senior leader team daily. These four tiers of daily briefs ensure a tight connection between senior leaders and information pertaining to daily safety and operations, which is a key component of a highly reliable organization.

Overall success of the organization depends on its ability to innovate continuously. Through intentional structure and cultural empowerment, MUSC Health motivates and incentivizes team members to do so. This leads to problem solving and engagement at all levels of the organization.

TIER 1 — Front line (unit, area)

TIER 2 — ICCE and Departments

TIER 3 — Hospital/Division

TIER 4 — Health system

MUSC Health actively organizes educational sessions and health fairs with screenings for our community to provide vital information and meaningful connections. To understand community needs, MUSC Health conducts Community Health Needs Assessments in every market at least every three years. The data from these is used to create action plans for our ICCEs, Population Health and Health Equity teams to meet community health needs.
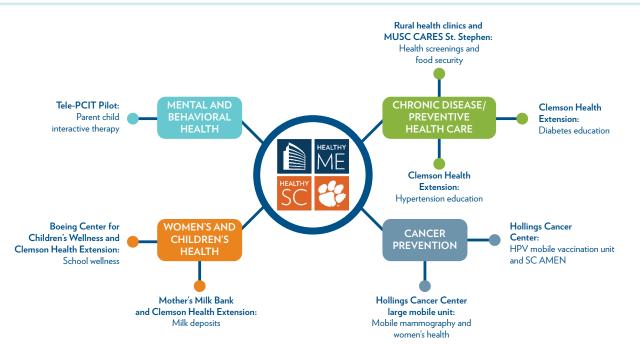
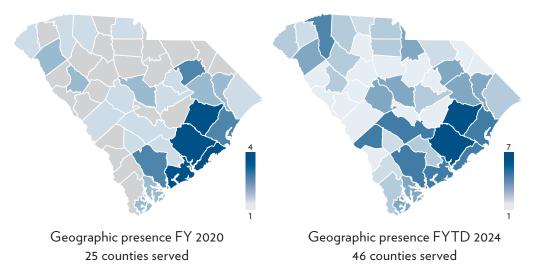MUSC Health also partners with Clemson University in the Healthy Me – Healthy SC program, which provides communities in all 46 counties with mental and behavioral health, chronic disease and preventive health care, cancer prevention and women's and children's health. Program growth has been substantial, with service to greater than 20,000 South Carolinians in concert with 70 community partners.
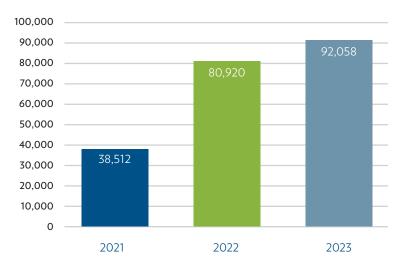
The MUSC Health volunteer program is a cornerstone of community engagement, enabling volunteers from diverse backgrounds to contribute to MUSC Health services. Volunteer program growth has more than doubled in the past two years, indicating high levels of community engagement and investment in MUSC Health.

Rural health clinics and MUSC CARES St. Stephen: Health screenings and food security

Tele-PCIT Pilot: Parent child interactive therapy

MENTAL AND BEHAVIORAL HEALTH

CHRONIC DISEASE/ PREVENTIVE HEALTH CARE

Clemson Health Extension: Diabetes education

Clemson Health Extension: Hypertension education

Boeing Center for Children's Wellness and Clemson Health Extension: School wellness

WOMEN'S AND CHILDREN'S HEALTH

CANCER PREVENTION

Hollings Cancer Center: HPV mobile vaccination unit and SC AMEN

Mother's Milk Bank and Clemson Health Extension: Milk deposits

Hollings Cancer Center large mobile unit: Mobile mammography and women's health

Healthy Me - Healthy SC programmatic growth

Geographic presence FY 2020
25 counties served

Geographic presence FYTD 2024
46 counties served

Volunteer hours

Year	Hours
2021	38,512
2022	80,920
2023	92,058

MUSC Health
Medical University of South Carolina

Changing What's Possible