CENTER FOR TELEHEALTH
HOSPITAL SERVICES

The Center for Telehealth is a state-of-the-art multi-functional center equipped with resources for telehealth administration, operations, education, training and simulation and most importantly, telehealth care delivery to partner hospitals, private practices, clinics, skilled nursing facilities, schools, correctional facilities and directly to patients.

As headquarters of the South Carolina Telehealth Alliance, the MUSC Center for Telehealth is a National Telehealth Center of Excellence, one of only two in the country.

This portfolio highlights some of the services being delivered into hospital settings.

NATIONAL TELEHEALTH CENTER of EXCELLENCE

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TELEHEALTH INSTITUTIONAL MENTORSHIP

Telehealth will gain momentum as reimbursement and consumerism grow

- 17% of all evaluation and management visits will be virtual by 2028
- 40% of hospitals surveyed have listed virtual health as a priority
- 62% of providers are offering virtual health services now or will in the future
- 74% of US consumers would use virtual health services
- 29 states have enacted private insurance parity laws

As a HRSA National Telehealth Center of Excellence, MUSC Health is offering institutional mentorship and expert consultation to help your organization address the growing telehealth demand.

Offerings include:

- An organizational assessment conducted via interviews, review of organizational strategic plan, current bundled payments, and other telehealth relevant opportunities
- Telehealth specific strategic planning and alignment with organizational vision
- Foundational workshops addressing key concepts (i.e. reimbursement, technology, EHR integration)
- Assistance in development of programmatic workflows and policies

Sources: American Telemedicine Association, 2016; Industry Benchmark and Data Report, 2016; Sg2 Analysis, 2018.

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VIRTUAL URGENT CARE

Virtual Urgent Care is an online service that provides rapid diagnosis and treatment in a virtual setting without the need for patients to visit an urgent care center of emergency room for their low acuity condition. The platform offers asynchronous (questionnaire-based), synchronous (video, face-to-face), and phone functionalities to patients. Both providers and patients report high satisfaction due to the ease, convenience, and affordability of the service.

Examples of Treatable Conditions

- UTI
- Yeast infection
- Flu
- Sinus infection
- Allergies
- Cold sores
- Minor burns
- Skin irritation/rash
- EpiPen refill
- Pink eye

Added Benefits

- Standardized solution to treat patients who call about their minor, urgent care conditions
- Offering adult and pediatric protocols
- Availability during evening and weekend hours
- Option for care when same day appointments are not available
- EMR integration

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MUSC partners with hospitals in the treatment of infectious diseases (ID) and for effective antimicrobial stewardship programs (ASP).

The use of telehealth allows MUSC, an academic medical center, to partner with community hospitals to deliver superior care in the effective management of ID and ASP, as required by the Joint Commission.

This service incorporates proven methodologies, board certified infectious disease physicians, ASP certified pharmacists, and technical support from the Center for Telehealth. To assure a seamless delivery of service, we suggest a step-by-step, methodical approach beginning with ASP and ID. Reevaluation of needs and performance at three-month intervals is recommended.

Program and Quality Benefits

○ Patients acquire fewer hospital infections (C-diff, CAUTI, CLABSI).
○ There is a decrease of overuse/misuse of antimicrobials and decreased pharmacy costs.
○ Patients have a decreased rate of emerging resistant pathogens.
○ Providers are able to better manage cases of sepsis.
○ Providers are able to better manage cases of ID.
○ Patients are less likely to be transferred during ID case management.
○ Partner hospitals are able to better meet Joint Commission ASP requirements.
○ Patients see an increased level of their own satisfaction when there is a collaborative team of providers.

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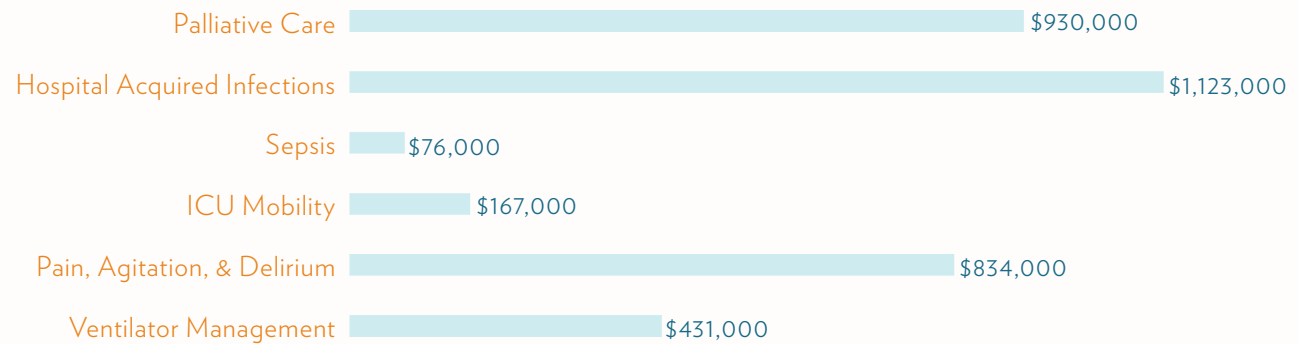
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ICU INNOVATIONS

MUSC partners with hospitals to offer a cost-effective way to improve patient safety, quality, and project implementation with substantial return on investment through ICU-related outcomes.

ICU Innovations is an interprofessional quality improvement program created by MUSC clinical leaders, and offered to ICU teams at community hospitals of all sizes. Our experienced consulting team will collaborate with your multidisciplinary ICU team to create successful evidence-based quality improvement programs and implementation that yield quality and financial benefits for your organization.

Partner hospitals with an average of 750 ICU patients/year can expect to see the following cost savings over a 3-year period

Category	Savings
Palliative Care	$930,000
Hospital Acquired Infections	$1,123,000
Sepsis	$76,000
ICU Mobility	$167,000
Pain, Agitation, & Delirium	$834,000
Ventilator Management	$431,000

Specific observable outcomes experienced by current partners

- Doubled compliance with the severe sepsis/septic shock bundle over a three-year period
- Paired spontaneous breathing and awakening trails to expedite ventilator liberation
- Improved compliance with delirium scoring, documentation, and treatment
- Adoption of an early ICU ambulation program that improves patient functional outcomes

"ICU Innovations has provided the team with an opportunity to adapt our structures and processes of care to effectively implement evidence based best practices in our ICU... Because of the integration of this novel model focused on critical care quality and process improvement, we have achieved an interprofessional synergy that is invaluable and, as a result, have improved ICU outcomes... ICU Innovations' support and guidance was essential to our ICU achieving Beacon Gold designation from AACN."

- ICU Medical Director, Partner Hospital

ICU

MUSC offers 24/7 continuous remote patient monitoring of ICU patients at partner hospitals. The care is provided by MUSC Health, Advanced ICU Care intensivists, and critical care nurses.

Tele-ICU is a transformational program that uses proactive technology and two-way audiovisual communication to enable intensivists, critical care nurses, and other critical care team specialists to collaborate to provide remote ICU care.

Some hospitals use tele-ICU to gain access to intensivists while others use the service for an additional layer of critical care support. System alerts produced by sophisticated algorithm software inform remote tele-ICU physicians and nurses of important trends in a patient's condition, enabling proactive clinical decision-making and early identification of potential problems.

Partner hospitals with 15-20 ICU beds have seen the following outcomes over a 5-year period

Historical Performance Trends

62%
Increase in
ICU Volume

1.4%
Decrease in
Mortality Rate

9%
Decrease in
ICU ALOS

37%
Decrease in Avg # Vent
Days/ICU Pt.

13%
Decrease in
Hospital ALOS

1.8%
Decrease in Hospital
Mortality Rate

451%
Increase in Annual # of
ICU Days Saved

299%
Increase in Annual # of
Hospital Days Saved

160%
Increase in Annual # of
Vent Days Saved

166 potential lives saved in SC in 2017
based on actual vs. predicted mortality

Impact on Leapfrog ICU physician staffing score

Hospitals can improve Leapfrog scores by integrating 24/7 tele-ICU coverage. Current South Carolina tele-ICU partners reporting to the Leapfrog hospital survey have earned 'substantial progress' (3) or 'fully meets standard' (4) Leapfrog scores.

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TELEHEALTH ALLIANCE

Headquartered in the MUSC Center for Telehealth, the South Carolina Telehealth Alliance is a statewide collaboration of many organizations joining forces to expand telehealth in the state. It consists of hospital systems, private practices, clinics, schools, community organizations, government leaders and other stakeholders who share our mission which is, telehealth for effective, efficient care. The MUSC Center for Telehealth also serves as the fiscal agent of the SCTA.

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MUSC partners with hospitals to offer scheduled consultations with a psychiatrist to those in the inpatient setting with acute psychiatric needs.

Program Benefits

○ Scheduled consults are available within 24 hours, Monday through Friday.
○ Access to psychiatric care may decrease a patient's length of stay (LOS).
○ Patients receive expert consultation while remaining in their own community.
○ Patients receive evaluations from board certified physicians.
○ Our physicians are able to recommend complex psychiatric medications.

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PALLIATIVE CARE

MUSC partners with hospitals to provide scheduled consults with a palliative care provider within 24 hours.

Palliative telehealth services provide your organization with access to an MUSC palliative care provider who can help with pain and symptom management, advanced care planning, and supportive care for your patients. We will also offer training for your chaplains and social workers so they can assist us in providing this highly specialized, interdisciplinary approach to the service of palliative care.

Patient diagnoses include:

- Cancer
- HIV
- Complex injuries, including brain injuries
- Heart disease, including congestive heart failure (CHF)
- Kidney disease
- Lung condition, such as chronic obstructive pulmonary disease (COPD)
- Memory conditions including Alzheimer's disease and Parkinson's disease
- Neurological conditions, including amyotrophic lateral sclerosis (ALS)

Quality Initiatives

- Higher patient satisfaction
- Cost savings
- Longer survival rates

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MUSC partners with hospitals to provide consultations for neurologic conditions in both the emergency department and inpatient setting. Consultations from expert neurologists provide patient evaluation, diagnostic, and treatment recommendations.

A variety of neurologic conditions requires urgent, specialized care. This may create significant challenges for community hospitals that do not have the population to support a full-time neurologist. MUSC's teleneurology program expands on the well-established telestroke program to meet the need for specialty consults for a wide-range of critical and complex neurologic conditions.

Program Benefits

○ Scheduled or urgent consults are available 24/7.
○ Program provides support for serious conditions such as seizure, Alzheimer's or Parkinson's disease, as well as for less serious conditions.
○ Program assists in alleviating health care access disparities for minority communities.
○ Program provides follow-up and secondary stroke prevention within the community setting by a neurologist.
○ Patients and families remain within their community network of support.
○ Patients who presented after the establishment of the teleneurology network were less likely to transfer to a tertiary medical center.

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CONTINUOUS VIRTUAL MONITORING (TELE-SITTER)

MUSC partners with organizations to offer an additional layer of workforce support in the form of 24/7 monitoring of at-risk patients to improve safety and patient/family satisfaction.

Remotely, virtual monitoring technicians (VMTs) collaborate with your organization's interdisciplinary medical team to deliver continuous patient monitoring. MUSC's safety team uses two-way audiovisual communication technology enabled by a mobile cart or fixed monitoring solution to redirect unsafe patient behaviors in real time. Program hardware and software optimize patient monitoring ratios, increasing observability from historical 1:1 sitter ratios to 1 VMT: 8-10 patients.

Observable benefits of continuous virtual monitoring include:

- A 70% to 100% reduction in falls year after year in units with strong engagement.
- Optimized patient safety through restraint reduction and expedited transitions.
- Shift-based integration of appropriate care planning and safety bundle transparency with on-site patient care team.
- Efficient workforce management driving down sitter costs.

CVM has improved patient safety in a variety of use cases

- Patients at high risk for falls (as determined by Morse fall scores and delirium assessment)
- Restrained patients at risk for self-harm
- Patients with altered mental status
- Patients at risk of elopement
- Patients/families obstructing care plan

"My patient responded very positively to the CVM service, restraints were removed, and he was discharged to an acute rehab hospital 3-5 days earlier than expected. Overall, CVM allowed him to increase activity and work with therapeutic services more aggressively. It led to a reduced length of stay and improved patient satisfaction. More importantly, it improved patient safety by reducing the risk of common medical complications that stroke patients are particularly prone to..."

- Christine A. Holmstedt, DO

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MUSC partners with hospitals to provide 24/7 access to urgent consultations with a neurologist for diagnosis and treatment recommendations for ischemic stroke patients.

Stroke is one of the leading causes of death and disability in the United States. For patients, access to immediate care is critical. Many community-based hospitals and medical centers do not have access to round-the-clock expert neurology consultation for stroke evaluation and treatment. Since 2008, MUSC's telestroke program has addressed this concern for partner hospitals throughout South Carolina. Through this network, partner hospitals are connected to round-the-clock expert stroke care. Utilizing a web-based connection with the partner hospital, patients receive a rapid evaluation with treatment recommendations.

Telestroke outcomes

- Resulted in decreased door-to-treatment times
- Maintained a 5 minute or less consult response time
- Maintained a 90-day follow up to all patients who receive tPA by a certified Modified Rankin provider
- Supports hospitals applying for Acute Stroke Ready Certification
- Resulted in decreased MUSC patient transfers
- Promotes quality metric data sharing with partner sites

Networking opportunities provided to partner sites include:

- Ongoing sharing of best practices.
- Real-time on-site education for providers and leadership.
- Educational WebEx series.
- An annual Boot Camp.
- Quarterly newsletters.
- Access to neuroscience telehealth education web pages.
- Participation in quarterly SC Hospital Association Stroke Committee meetings.
- Participation in quarterly SC Telehealth Alliance Stroke Committee meetings.

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