Development of the South Carolina Center for Telehealth and its role in Education and Training of a Healthcare Workforce
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Telehealth Educator, Medical University of South Carolina, Charleston, South Carolina, USA

• Over 20 years of experience in workforce and community development
• 10 years of telehealth network, service and curriculum development
• Associate Professor in the Academic Affairs Faculty
• Passionate about health information technology
What is Telehealth?

Telehealth is another common term which is similar to telemedicine, though more broadly defined. Telehealth incorporates telemedicine, but also includes health education, public health interventions, research, administration and other elements that are part of the health care system.

Telehealth includes:
• Practice of medicine at a distance
• Distance health education
• Distance public health interventions
• Distance health administration
From Telemedicine to Telehealth

- Telemedicine is not a new concept, and in recent years its use has grown exponentially.
- Over the next decade, virtual forms of care are expected to become commonplace.
- Telemedicine is now a multibillion dollar market.

Rapid expansion of telehealth:
- 100 million asynchronous visits
- 400% rise in 2 years

20% of all care predicted to occur virtually.
MUSC Center for Telehealth
“Telehealth for efficient, effective care”

• 12+ years of telehealth experience
• > 80 unique telehealth services
  • Telesstroke (30 hospital network; ~5,500 annual consults; 14 comprehensive stroke centers)
  • School-based telehealth (50+ schools)
  • Tele-ICU (partnership with Advanced ICU Care; 6 SC hospitals)
• 300+ connected sites
• Coordinating entity of the SC Telehealth Alliance
• HRSA-designated National Telehealth Center of Excellence
SC Telehealth Alliance (SCTA)

- Funded by the South Carolina Legislature in 2013
- Statewide collaboration of many organizations to expand telehealth services
- Administered out of the MUSC Center for Telehealth
- Annual collaborative strategy
  - 450+ connected SC sites
  - 100+ services statewide
  - Legislative reporting
- Creating an open-access telehealth network
- SCTA Mission: Improve the health of all South Carolinians through Telehealth
SC Telehealth Sites in SC

348K+
Telehealth patient interactions in 2018

436
sites equipped for telehealth services

Scope of Telehealth Practice in South Carolina

112,000+
Real-time video interactions

81,000+
Tele-ICU monitoring interactions
Within the tele-ICU, program audio-video evaluations, direct patient interventions, and clinician communication enable a multi-disciplinary team of experts to assist in the care of South Carolina’s sickest patients.

13,000+
Asynchronous telehealth interactions
Asynchronous interactions can include physician-patient online interactions (e.g., recorded video messages, virtual care visits, SMS) for rapid care of common conditions.

2,000
Remote specialty interpretations
Secure transfer of patient information to specialty clinician for interpretation (e.g., EEG or diabetic retinopathy).

127,000+
Remote patient monitoring interactions
Continuous tracking of a patient’s clinical conditions, either at another clinical setting or from the patient’s home.

The exponential growth of telehealth in South Carolina has resulted in innovative changes across the state, all aimed to improve the access, quality, and affordability of healthcare for South Carolinians. Whether it is real-time video visits, asynchronous virtual care, or continuous patient monitoring in tele-ICU, telehealth is happening every day, all the time.

40
sites participating in telementoring/Project ECHO program
Growth in Consultations

In 2018, the program conducted 1,700+ consultations.

5,427

Telesstroke Consults in 2018
The Role of Telehealth Education

South Carolina Telehealth

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Telehealth Service Implementation Model (TSIM™)
“Telehealth for efficient, effective care”
ITIL Continuous Service Improvement Process

Education has a role across all ITIL processes:

• Assists with service design through benchmarking
• Validating workflows
• Keeps services up-to-date
• Provides refresher training
• Ensures built-in opportunities for quality improvement check-ins
• Informs future service development processes
## Telehealth Education Modalities

<table>
<thead>
<tr>
<th>In-Person</th>
<th>Synchronous</th>
<th>Asynchronous</th>
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</thead>
<tbody>
<tr>
<td>• Roundtables</td>
<td>• Videoconferences</td>
<td>• Online Modules</td>
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<tr>
<td>• Hands-On Demos</td>
<td>• Case Presentations</td>
<td>• Recorded Programs</td>
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<tr>
<td>• Mock Calls</td>
<td>• Simulations</td>
<td>• Mobile App Content</td>
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<tr>
<td>• Facility Tours</td>
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</table>

### Providers

### Learners

### Patients
Why is Telehealth Education Important?

• Telehealth education is part of an ecosystem of clinical, research and administrative services
• Education can be the great equalizer
• The demonstration of education about technology through technology serves as a gateway to de-mystify the process and build relationships
• Telehealth is an evolving area of science and application
• Baseline and continuing education are required for future and current providers
• Interoperability is increasing important
What Does Telehealth Education Look Like in South Carolina?
Our Ecosystem

Undergraduate Students
Health Professions Students
Graduate Medical Education Residents
Practicing Healthcare Providers
Community Members: Patients & Caregivers
Equipment and Processes
Connectivity and Applications

• Broadband Connectivity
  • Palmetto State Providers Network
  • FCC-Funded Network - Launched in 2008
  • Hospitals, FQHCs, EMS Hubs, Provider Offices

• Web-Based Services
  • WebEx
  • Jabber
  • Vidyo
  • Learning Management Systems

• Mobile Apps
  • Patient & Consumer Apps
  • Personal & Loaned Devices
WHAT: Interprofessional Telehealth Course – Six Colleges

WHY: Demonstrated Need to Train Workforce of Tomorrow

HOW: Online & Telehealth Learning Commons

NEXT STEPS: Resident Education & Curriculum Integration
Trainees

Types of Educational Offerings:

• **Interprofessional education for health professions trainees**
  • Launched in 2014 – Transitioned to a year-round, online course
  • Includes students from all six of MUSC colleges
  • Includes Experiential Component and Team Project
  • Expanded to Health Systems Module in Fall 2018

• **Curriculum Integration for Programs/Colleges**
  • Faculty leadership on integration through a variety of modalities
  • Focuses on appropriate level of education for the learner

• **Graduate Medical Education**
  • Based off Interprofessional curriculum and piloted with Internal Medicine (IM)
  • Expanding to all IM three years and other residency programs: FM, Psych, Neuro
  • Includes Experiential, Shadowing and Certification Components
Integrated Curriculum Across & Within Colleges
Practicing Providers

Types of Educational Offerings:

- Privileging and credentialing
- Competency check-off - Roundtables
  - Equipment
  - Processes
- Best practices for tele-presenting and teleconsulting
- Continuing education specific to telehealth programming and evidenced-based practice
  - Project ECHO
  - Tumor Board Reviews
- Telehealth simulation education to extend medical decision-making training
Patients and Communities:

Types of Educational Offerings:

- In-Person training before discharge with mobile/home monitoring equipment
  - Diabetic Home Monitoring
  - Chronic Heart Failure Management
  - Weight Management
- Mobile App Education
  - Smoking Cessation
  - Pediatric Burn
- Video Conferencing
  - Community Health Conferences
  - Follow-Up Consultations
Online Modules

- Strategic Vision of Telehealth for Learners and New Providers
- Supporting Communities through Tele-ICU Partnerships
- Telehealth Enabled Partnerships - MUSC Affiliations
- Continuous Virtual Monitoring Overview and Demonstration
- Virtual Tour of the MUSC Center for Telehealth Learning Commons
- Health Informatics & the Role of Telehealth
- Telehealth System Development Processes – Administrative Overview
- Tele-ICU Tour & Demonstration
- Development of Statewide Telehealth Systems, Technologies and Networks
- Cart Demos
- Pediatric Critical Care Demo
- Telestroke Patient Care Continuum Video
- School-Based Telehealth Demonstration
Training Roundtable: Countdown to Go-Live

4-3 Weeks Prior: Systems Education

1:1 system specific trainings

2 Weeks Prior: Training Roundtable

- Scope of Practice Guidelines
- Billing Review
- Workflow
- Care Coordination
- Telepresenting/consulting
- Quality Improvement
- Continually Updated Resources
- Equipment & Software Training
- Mock Calls

1 Week Prior: Mock Call

Mock call between provider and site

Go-Live & Post Go-Live

- Go-Live
- Post Go-live Review
- Continual Service Improvement

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Additional Educational Concepts

- Continuing education for healthcare providers related to telehealth applications, processes and equipment
- Trainee education related to current provision of telehealth services
- Partner education about lessons learned from program and service development
- Community and patient education about how telehealth services can be accessed locally
- Healthcare workforce recruitment and retention through provider support initiatives
What Have Been the Translatable Outcomes in South Carolina?
Learner Opportunities

Recent growth in all integrated curriculum activities:

- Interprofessional UME/Health Professions Programs
- Graduate Medical Education
- UME/Health Professions Program Integration

<table>
<thead>
<tr>
<th>Academic Year Time Period</th>
<th># of IP Students</th>
<th># of IP Programs</th>
<th># of GME Trained</th>
<th># of GME Programs</th>
<th># of Health Professions Students (not IP)</th>
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<tr>
<td>FY17</td>
<td>43</td>
<td>16</td>
<td>53</td>
<td>1</td>
<td>62</td>
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<tr>
<td>FY18</td>
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<td>22</td>
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<td>471</td>
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<tr>
<td>FY19</td>
<td>590</td>
<td>25</td>
<td>160</td>
<td>5</td>
<td>583</td>
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Assessing the Outcomes for Trainees

- Challenges include training programs across multiple disciplines and levels (BSN⇒MD⇒PhD)
- Baseline knowledge level of trainees is NOT increasing

Knowledge of telehealth history

- Nonexistent
- Knowing a little bit
- Average for someone in the health professions field
- Knowing more than the average person in the health professions field

Pre | Post
--- | ---
Nonexistent | 10%
Knowing a little bit | 100%
Average for someone in the health professions field | 0%
Knowing more than the average person in the health professions field | 100%
Knowledge Gain & Potential Career Impact

Ability to explain how telehealth applications contribute to healthcare

- Nonexistent
- Limited
- Average for someone in the health professions field
- Knowing more than the average person in the health professions field
- I could write a book

Pre vs. Post
Self-Reported Learner Survey Themes – “I Will Use Telehealth To...”

1. Collaborate with external professionals and improve rural access
2. Expand horizon for care delivery and innovation
3. Improve clinical, quality and patient outcomes
Trainees

• Health Professions Trainees
  • High-levels of IP course satisfaction and self-reported knowledge gain
  • Additional degree programs utilizing elective course
  • Students who entertain other career options in rural and underserved settings

• Graduate Medical Education
  • Residents want more – more opportunities for training and practice
  • Extension of consultative activities to three years with a formal “sign-off”
  • Opportunities for residents to assist faculty with program development

• Fellows and Interns
  • Research and Clinical Rotations
  • Community Projects – Presidential Scholars
Continued Curriculum Integration

1. Trained DNP students on how to use telehealth peripherals to assist in telehealth consult in order to facilitate team-based care.

2. Assisting in launching training for a College of Dental Medicine grant initiative to conduct dental screenings with school-based nurses.

3. Working with multiple programs to facilitate internships and capstone experiences for students.


5. Identified areas of policy consensus for the training of residents within Epic workflows. Amended GME Handbook and all telehealth contracts.
Practicing Providers

Levels & Modalities of Training:
• Education developed and disseminated using multiple modalities
  • Meet learners where and how they want to learn
  • Empower providers to incorporate telehealth processes into their workflow
• Levels of training based on providers’ needs
  • Privileging & Credentialing
  • Competency Check-Off
  • Evidence-Based Practice

Continuing Professional Development:
• Exposure to new modalities of education – tele-simulation training
• Inclusion of new teams of learners – enhanced quality improvement models
HRSA National Telehealth Center of Excellence

One of two National Telehealth Centers of Excellence in the country:

- Medical University of South Carolina
- University of Mississippi

Funded in 2017 with three-year award:

- Research & Outcomes Dissemination

Part of HRSA System of Telehealth Resource Centers

- OK - Heartland Telehealth Resource Center
- Center for Connected Health Policy
MUSC Telehealth Center of Excellence: Current Initiatives

As a HRSA-awarded Telehealth Center of Excellence, MUSC deploys its expertise to research and evaluate, create and disseminate materials, and provide technical assistance and consultation across the following key topic areas:

- Impact of telehealth on federal and local health care spending
- Provider and patient engagement/ Telehealth Service Implementation Model (TSIM)
- Development of open-access telehealth networks
- Telehealth as a model for implementation of best clinical practices
- Behavioral health-focused telehealth programs
- Telehealth enabled primary care
South Carolina Telehealth

What Are the Opportunities Going Forward?

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Strategic Opportunities and Collaboration

Robust Telehealth Education Programs Enable:
• Collaboration through “Low-Stakes” Program Development
• Establishment of Technology and Process to Support Distant Communication
  • Can use low-cost and asynchronous applications
  • Add functionality as programs evolve
• Shared Knowledge-Base of Continuing Education
• Provider-to-Provider Engagement
  • New partnerships and team members
• New Populations of Patients and Research Participants
• Customized Initiatives Centered on Community Needs
• Early “Wins” that Lead to Sustainable Partnerships
Optional Verses Required

Telehealth Education Programs are Currently Optional In Many Settings:
• Good way of engaging community providers and extending relationships
• Can “walk before you run” – provide patient education and then level-up to consults
• Initiating demos and training can help with program feasibility assessment and recruitment
• Innovative way to work towards population health goals through team-based collaboration

Telehealth Education Is Becoming Required for Practice:
• State/Federal Legislative Requirements
• Higher Education Accrediting Standards
• Joint Commission Standards
Connect With Us

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MUSC Health is the clinical enterprise of the Medical University of South Carolina (MUSC) comprised of a 700-bed Medical Center, the MUSC College of Medicine and the physician's practice plan. It serves patients across South Carolina and beyond through four hospital facilities in Charleston and more than 100 outreach sites. Among these are the Hollings Cancer Center, one of only 66 National Cancer Institute-designated centers in the country, and a nationally recognized Children's Hospital. The Medical University was founded in 1824 and has risen to become a premiere academic medical center at the forefront of the latest advances in medicine, with world-class physicians and other scientists and groundbreaking research and technology that is often the first of its kind in the world.