

CLIENT SUCCESS STORY

# Expanding telestroke access in rural communities



## MUSC Telestroke Program

A grassroots stroke program founded in 2008 at the Medical University of South Carolina (MUSC), the state's only comprehensive academic health system.

**Services:** MUSC works with rural/community hospitals and medical centers to bring high-quality stroke care services to rural communities, including:

- Telestroke
- Teleneurology
- Tele-EMS



**South Carolina**  
demographics

**Population:** ~5M

**Neurologists:** 160

**31K+ patients** per physician

## Meeting the need for rural stroke care

In 2005, South Carolina faced a stroke crisis. Located in the center of the "Stroke Belt," the state had only six primary stroke centers and 160 neurologists, giving it an unenviable ratio of 31K patients per physician. Stroke at the time was the third leading cause of death in South Carolina, with less than 1% of acute stroke patients receiving tissue plasminogen activator (tPA) treatment.<sup>1</sup> Facing such a great need, a group of stroke researchers came together to form MUSC Telestroke program.

## Implementing a telestroke workflow in a rural network

Seeking to better extend their reach to underserved rural communities and improve outcomes, MUSC partnered with Teladoc Health to enhance their existing stroke program through the Solo™ platform. The straightforward system gives MUSC stroke specialists critical time when alerted to a suspected stroke. Within a matter of minutes of an alert, the specialists can gain direct video access to a patient's room and have access to care for the patient. If needed, they can also review scans as soon as they get pushed.

### Stroke facts<sup>2</sup>

**5<sup>th</sup>**

LEADING CAUSE OF DEATH IN NORTH AMERICA

**1/3**

OF AMERICANS DO NOT HAVE ACCESS TO A STROKE CENTER WITHIN 1 HOUR

**\$71.6-\$184B**

PROJECTED TOTAL DIRECT MEDICAL STROKE-RELATED COSTS

## Comprehensive solutions to increase access to care

Relying on Teladoc Health's advanced technology, MUSC developed a comprehensive solution to meet the needs of patients who had previously been out of range from stroke care.

### Telestroke

Allows neurologists to assess patients who may be having a stroke. By relying on virtual care technology, such as interactive video conferencing through a device, specialists can evaluate a patient and provide guidance and recommended care treatment to on-site clinicians.

### Teleneurology

Provides scheduled, or non-urgent inpatient neurology consultations to complement the stroke program with follow-up care. This offers patients high-quality neurological care in their communities and close to their caregivers.

### Tele-EMS

Provides rapid assessment to quickly determine if a patient is a candidate for acute therapy.

- EMS alerts that they have a suspected stroke patient via the Solo app
- Engagement begins while patient is in the EMS truck before they arrive at ER
- Exam and patient history are conducted via three-way audio and video exchange in the EMS truck
- Upon arrival at ER, patient can go directly to the scanner



Stroke is really nurse-driven, because a stroke patient needs to be identified quickly. Nurses are empowered to call a specialist for any suspected stroke patient to avoid delay.

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SC Health Medical Director  
Comprehensive Stroke Program  
& Teleneuroscience

### Tele-EMS results<sup>1</sup>

**2017**

**One county**

**Five EMS units available 8AM-5PM only**

**Determination of bleed: 33 minutes**

**2024**

**Six counties**

**36 EMS units available 24/7**

**Determination of bleed: 13 minutes**

**Door-to-needle time halved**

## Creating lasting change for rural communities

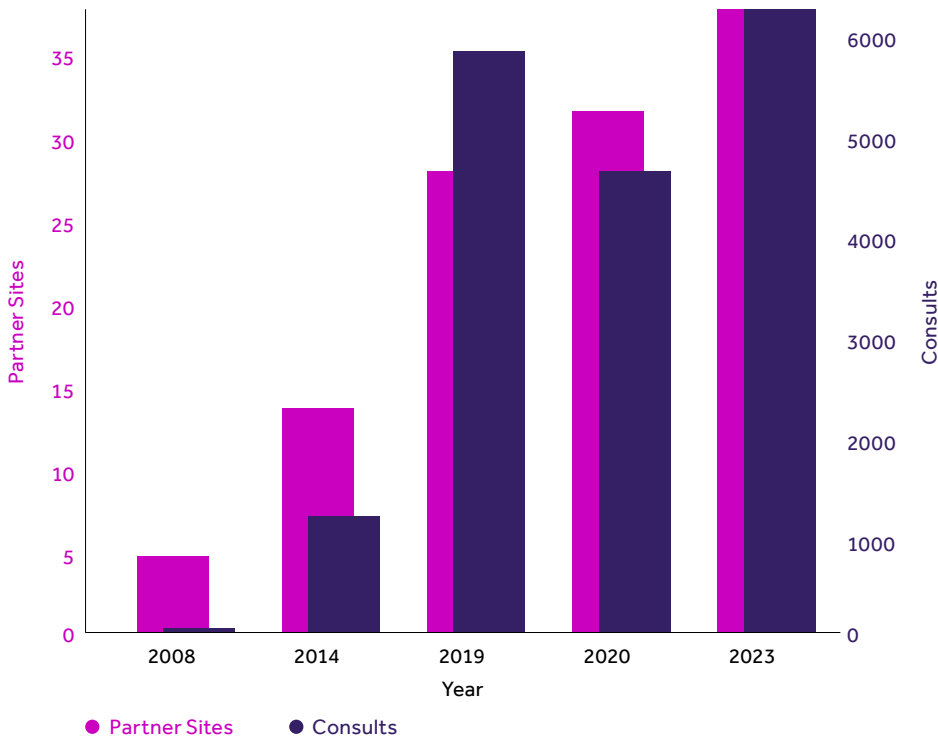
As a result of the partnership between MUSC and Teladoc Health, access to stroke care has been greatly expanded to the people of South Carolina. With MUSC partner sites across the state, along with collaborating systems, nearly the entire state and every hospital is connected to one of the comprehensive stroke centers in South Carolina.

In 2005, every South Carolinian was within a 60-minute drive to an expert stroke doctor. Today, nearly every community in the state is within a 30-minute drive to an expert stroke doctor. Plus, stroke has dropped from the third to the fifth or sixth leading cause of death in South Carolina.<sup>1</sup>

## Expanding into the future

MUSC maintains an ongoing, open dialogue with Teladoc Health to review data and address issues as needed. Looking to the future, MUSC aims to expand access to additional partner sites and continue to improve their metrics.

## Growth timeline<sup>1</sup>



## Program results

People living in an area with the MUSC telestroke network are:

**24.2%**

MORE LIKELY TO RECEIVE TPA<sup>1</sup>

**25%**

MORE LIKELY TO RECEIVE THROMBECTOMY<sup>1</sup>

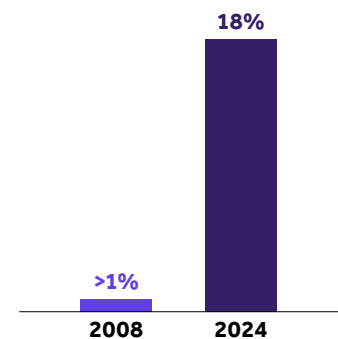
**10%**

MORE LIKELY TO GO HOME TO REHAB VERSUS A SKILLED NURSING FACILITY<sup>1</sup>

**~8%**

LESS LIKELY TO DIE FROM A STROKE<sup>1</sup>

## Acute stroke patients receiving tPA<sup>1</sup>



<sup>1</sup>Client provided data

<sup>2</sup>Mozaffarian, Dariush, et al. "Heart Disease and Stroke Statistics—2016 Update." *Circulation*, vol. 133, no. 4, 2016, doi:10.1161/cir.0000000000000350

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