

teleNeurology Providing Timely Stroke Care, Improved Treatment And A Financial Return On Investment

Guthrie is a not-for-profit, integrated health care system with five hospitals throughout southern New York and North Central Pennsylvania, complemented by 32 regional clinic centers, a research center, numerous fellowships and residencies. All told, Guthrie supports over 1.2 million patient encounters per year.

When its flagship hospital, Guthrie Robert Packer Hospital (RPH), added teleNeurology services from SOC Telemed to its Emergency Department (ED), Guthrie saw relief for emergent stroke consultation across its entire health system.

"By identifying and responding to gaps in care, we create a more consistent and healthy population. With stroke care, we knew we had transfers leaving the system; we weren't an accredited stroke center. We recognized this critical gap, and as a leader in our community we needed to provide a solution"

*David Hall
Associate Vice President of
Operations & Virtual Care,
Guthrie Medical Group*

The Challenge

In 2014, leadership at RPH modernized their strategy to better respond to patients presenting with acute ischemic strokes in conjunction with the expanding target: Stroke quality improvement initiative from the American Heart Association/American Stroke Association.

"By identifying and responding to gaps in care, we create a more consistent and healthy population. With stroke care, we knew we had transfers leaving the system; we weren't an accredited stroke center. We recognized this critical gap, and as a leader in our community we needed to provide a solution," says David Hall, Associate Vice President, Operations and Virtual Care for Guthrie Medical Group.

Guthrie knew that closing those care gaps would allow them to improve their stroke care program by increasing utilization and administration of an IV thrombolytic agent (Alteplase) to eligible patients presenting to their ED.

When stroke patients present with symptoms of an acute ischemic stroke, seconds matter. Based on American Stroke Association guidelines, the clot-busting drug Alteplase can only be administered within 4.5 hours from the time last known well (TLKW). Hospitals record the time that a patient was last known to be normal, the patient's arrival time, and minute-by-minute progress through the hospital to ensure Alteplase administration is following these guidelines.

Case Study:

Guthrie Robert Packer Hospital

While Guthrie RPH staffs neurologists onsite, it also serves as the hub hospital in a hub-and-spoke model health system that serves over a million patients each year. Without timely expert support at the point of an emergent stroke—wherever it may present throughout the health system—Guthrie could not confidently deliver expert consultations on Alteplase administration quickly enough in every individual case.

The Solution

For Guthrie, the answer was a partnership with SOC Telemed.

"The main reason we began working with SOC Telemed was to improve upon the administration of Alteplase in the ED. We needed to have providers on call who could respond promptly, as time is of the essence with stroke care," says Allison Caccia, Registered Nurse at Guthrie RPH.

The hospital system rolled out the SOC Telemed platform for emergent stroke care at Guthrie RPH in 2014, tapping expert neurologists from around the country to provide emergent stroke assessment and to make Alteplase administration decisions. The program was an immediate success.

Guthrie RPH is now a Primary Stroke Center certified by The Joint Commission. The support from SOC has led to a decrease in transfers and a dramatic increase in Alteplase administrations.

"SOC Telemed directly influences not only the number of Alteplase administrations but also the timeliness of the administration," says Caccia.

Strokes are on the rise – 317 total stroke alerts were issued in the Guthrie RPH ED in 2018 – and Guthrie collaborated with SOC Telemed on all ischemic stroke alert patients to determine Alteplase eligibility. Among those eligible stroke patients, Alteplase administration grew substantially.

When calculating an alteplase administration rate, the method used was the number of patients who received Alteplase divided by the number of Alteplase eligible patients. Alteplase eligible stroke cases are emergent consults that have a TLKW of 4.5 hours or less. Based on this calculation method, Guthrie went from a rate of 17 percent in 2016 to 51 percent in 2019. The recommended Alteplase administration time of within sixty minutes of arrival improved from a rate of 33% in 2014 to 78.9% in 2019.

"The main reason we began working with SOC Telemed was to improve upon the administration of Alteplase in the ED. We needed to have providers on call who could respond promptly, as time is of the essence with stroke care"

*Allison Caccia
RN, Guthrie RPH*



Case Study:

Guthrie Robert Packer Hospital

The administration of Alteplase within 45 minutes of arrival was nonexistent at 0% in 2014, and it has increased to 36.4% in 2019.**

These numbers showcase the impact of a world class teleNeurology program. Thanks in part to the success of the stroke care program, SOC Teledem now provides all emergent adult neurological care—beyond just stroke care—for Guthrie RPH. Additionally, they have expanded telemedicine service to one of Guthrie's spokes at Guthrie Corning Hospital, a New York designated Stroke Center, for all emergent and routine neurological consults.

Beyond improving patient care, the Guthrie and SOC Teledem partnership has yielded tangible clinical and financial improvements as outlined below:

The Benefits of Emergent Stroke Care with SOC Teledem for Guthrie Robert Packer Hospital:

- A 31% increase in number of stroke patients seen.
- An almost three fold increase in Alteplase administration, resulting in 51% of all eligible patients receiving the drug.
- 98% return on financial investment in the teleNeurology program. This calculation was based on average reimbursement for stroke patients, multiplied by the incremental increase in stroke volume and Alteplase administration seen by RPH.

"This type of partnership is so drastically needed in such a time-sensitive environment. Overall, the program has been successful"

*David Hall
Associate Vice President of
Operations & Virtual Care,
Guthrie Medical Group*



SOC Teledem is the first provider of acute clinical telemedicine services to earn The Joint Commission's Gold Seal of Approval.

***Alteplase administration timing data was provided from the RPH Stroke database*