

# Swedish Cherry Hill Stroke-Care Simulation Dramatically Reduces Door-to-Needle Times

## Background and Challenge

Swedish Cherry Hill in Seattle, Washington, is a Certified Comprehensive Stroke Center per DNV-GL, whose accreditation requires a coordinated system to urgently evaluate and treat stroke patients. Already consistently maintaining Door-to-Needle (DTN) times well within the national standard, Swedish believed they could further eliminate delays across the entire stroke process and significantly reduce DTN times. Swedish Cherry Hill aimed to:

- Leverage caregiver concerns, expertise, and suggestions to improve processes
- Implement and test a new workflow that would eliminate process delays
- Decrease DTN times to less than 30 minutes

### Stroke: At a Glance

Someone in the United States has a stroke every 40 seconds. Every 4 minutes, someone dies of stroke.<sup>1</sup>

Every year, more than 795,000 people in the United States have a stroke. About 610,000 of these are first or new strokes.<sup>1</sup>

<sup>1</sup>Centers for Disease Control

## Results

**42% decrease**

in typical DTN time

**32 minutes**

faster than national target DTN time

**2 days**

to exceed DTN goals via Macro-Simulation

## Solution

Swedish engaged Tegria, seeking to apply our proven Macro-Simulation™ methodology for optimizing care delivery via simulation. In doing so, the care teams would get to evaluate, practice and improve upon key roles and tasks that are crucial to ensuring timely and efficient interventions for stroke patients.

Engagement from the entire team was essential for any changes to be effective. Tegria worked with a multidisciplinary group of physicians, nurses, and technicians to critique policies, identify process gaps and solutions, and embed new roles and workflows. This was achieved through gap analysis, process improvement, role delineation, tool development, communication practice, team building, and real-time solution testing.

The Tegria team ran logistics, documented critical information, and captured key decision points while also facilitating feedback so the team could more effectively solve problems in real time. Through our combined efforts we ultimately designed a new pathway that eliminated delays across the entire workflow, adjusting everything from the location of triage to rooming, communication, equipment, order placement, and administration of high-impact medications.

## Outcomes

The team implemented a multidisciplinary “safety pause” and a formal checklist to document assessment, diagnosis, treatment decisions, contraindications, and agreement before administering medications—as is typically done before a surgery or an intubation. Adding this safety pause was one of the most important wins. Since implementation of the new process, there have been no avoidable patient safety events—even amid significant process changes. The required pause, the new documentation tools, and the hardwired safety checks now ensure safety is not sacrificed for the sake of speed.



Increased caregiver confidence, buy-in, and engagement across all impacted departments



Changed process to administer alteplase in CT for increased safety and efficiency



Clarification of team roles and clear delineation of tasks



Implemented multidisciplinary safety pause and formal checklist to document assessment, diagnosis and treatment decisions, contraindications, and agreement before administration of alteplase



Implemented swarm (concurrent group triage and evaluation) in ED with increased sense of urgency for Code Stroke patients



If you're trying to roll out any process change with potential impact on patient safety and outcomes, simulation is the way to go. I think many times we come from above as health care leaders with a “do this” message, but it doesn't always take hold.

—Lisa Teeter, RN, Stroke Program Coordinator, Swedish Cherry Hill Emergency Department