



STROKE ALERT! FAST HELP FOR STROKE VICTIMS AT BROOKINGS HEALTH SYSTEM



QI TOOLKIT CASE STUDY:

- **About Brookings Health System**
- **About the interviewees - Sandra Ruesch and Karen Weber**
- **What is the focus of this QI initiative?**
- **What challenge or problem does this QI initiative address? How did you know this problem existed?**
- **Why was this a priority for your facility/organization?**
- **What was the role of leadership in supporting this work?**
- **How did you implement this QI initiative?**
- **How did you communicate your results?**
- **When implementing this approach, what went well?**
- **What were some of the challenges?**
- **What did you learn along the way? What changes, if any, did you have to make to your approach?**
- **What were the outcomes of this QI initiative? Is this process still in place? If so, how did you make that happen?**
- **How did QI help you and your team make your changes?**
- **What advice do you have for others who are considering starting the QI process?**

Thank you to Sandra Ruesch and Karen Weber of Brookings Health System for sharing this case study.

About Brookings Health System

Brookings Health System, located in Brookings, South Dakota, includes a 49-bed hospital, the 79-bed The Neighborhoods at Brookview nursing home, Brookhaven Estates senior living apartments, Yorkshire Eye Clinic, and medical clinics in Arlington, White and Volga, South Dakota. It is a non-profit, city-owned facility that offers the community a full range of inpatient, outpatient, emergency and extended care services. In 2019, Brookings Health System was named a Top 20 Rural Community Hospital from the National Rural Health Association. This was the second time in three years that the organization has received this prestigious award. The mission at Brookings Health System is to provide high quality, compassionate, personalized health care.

About the Interviewees – Sandra Ruesch and Karen Weber

Sandra Ruesch, MSN, RN, CEN, CPEN, SANE-A is the Quality Director, and Karen Weber, ADN, RN is the Medical Surgical & ED (Emergency Department) Director at Brookings Health System.

What is the focus of this QI initiative?

- We have been collecting internal stroke data since 2015. Our team was interested in implementing a stroke alert response.
- The QI team included members from our hospital-based ambulance, radiology, ED providers, ED nursing, registration, and quality.

- The EMS (emergency medical services) team uses the FAST (Facial drooping, Arm weakness, Speech difficulties, & Time to call 9-1-1) exam in the field during pre-hospital care. When a patient screens positive during the FAST exam, EMS initiates the stroke alert. This verbiage is used during radio report back to our ED. EMS also calls the ED receptionist via cell phone to provide patient demographic data to expedite the registration process.
- The FAST exam was created by the American Stroke Association. Our ED and EMS Directors learned about the stroke alert at a regional conference. The decision was made to implement the process at our facility.
- We used a defined pathway based on resources available from the American Stroke Association’s best practice guidelines.

What challenge or problem does this QI initiative address? How did you know this problem existed?

- Centers for Medicare and Medicaid Services (CMS) core measures have looked closely at stroke care. We have been tracking door to CT (computed tomography) times less than 20 minutes, door to CT result times less than 45 minutes, and door to alteplase (tPA) administration times less than 60 minutes. These goals have been set forth by the American Stroke Association as best practice.
- Internally, we have also been tracking our documentation for last known well time, as well as if the stroke alert was activated. Over time, our team has noted inconsistencies with our performance. We wanted to assure that each one of our stroke patients received treatments within the outlined timeframes.

Why was this a priority for your facility/organization?

- Being a rural hospital, we have a small volume of patients that fall into the CMS stroke measures. One missed opportunity may mean that we fall well below state and national benchmarks.
- Around the same time, a nurse’s husband had a stroke. This hit a personal chord with our team and became an internal inspiration for implementing the stroke alert.
- We realized the biggest opportunity would be receiving the CT results in a timelier fashion. With EMS calling ahead, our radiology team is ready to receive the patient in their department directly from the ambulance bay in order to obtain a head CT. While en route, EMS ensures every patient has a blood glucose and EKG (electrocardiogram) prior to arrival at the hospital in order to rule out other potential causes for the patient’s neurologic symptoms.

What was the role of leadership in supporting this work?

- Because this became a CMS measure, it became a priority from a performance standpoint.
- Data was shared at department meetings, all-staff email updates, and with the Board of Trustees.
- Leadership also supported this project because it is an issue that is viewed as a priority for the communities we serve. Stroke is the second-leading cause of death in the world and a leading cause of adult disability.

How did you implement this QI initiative?

- We used a combination of Evidence-Based Practice and the Plan, Do, Study, Act framework for process improvement.
- A PICO question was developed: “Will implementing an evidence-based stroke alert protocol improve our timeline metrics (Door to CT, Door to CT results, and Door to tPA) for patients experiencing symptoms of a stroke?”
- We studied the evidence from the National Stroke Association, American Stroke Association, CMS, and National Institutes of Health.
- Baseline data was collected:
 - Retrospective convenience sample chart review
 - Interviewed staff to identify opportunities in workflow
- Our team created a policy and made edits to our electronic medical record.

The PICO Model is a format to help develop a clinical question.

Problem or Population

Intervention

Comparison

Outcome

- Our pharmacy team developed a stroke medication box, which included the fibrinolytic medication, dosing calculator, and supplies.
- Nurses obtained their certification for the National Institutes of Health Stroke Scale.

How did you communicate your results?

- The team discussed the data at quarterly measurement meetings.
- The ED committee and EMS director hold regular meetings.
- We created a poster and put it in the ED to remind our team of the best practice guidelines.
- Our marketing department created a patient video testimonial and newspaper ad. This was posted on our webpage and social media pages.

When implementing this approach, what went well?

- Buy-in: Key players from all departments were excited about the idea and willing to try implementation of the plan. We were fortunate in that we did not have any challenges with staff engagement throughout this project. We are lucky to have a team with so many invested members.
- We had efforts in place before our process was formalized. Staff knew how to take care of stroke patients; the knowledge-base was already established. We just needed to create a protocol and formalize it.
- We now have the integration of the EMR with a stroke alert order set.

What were some of the challenges?

- We needed a system to securely transfer the virtual images to the radiologist to be read. The hurdle was getting patient information entered into the system to transmit the images. At times, this was the delay in care. We changed the process so EMS now has a cell phone with a protected phone line to transmit the patient demographic information so they can pre-register a patient.
- To prioritize the CT scan for prompt reading, the radiology technician puts a header on top of the requisition for the radiologist that this is a “stroke alert” patient. The images are then tagged for a 15-minute turnaround.
- We also had to set up the documentation process in the electronic medical record so we could clearly identify our timeline.

What did you learn along the way? What changes, if any, did you have to make to your approach?

- We realized documentation was critical to our success. This included the clear documentation of our timeline metrics and a stroke alert order set. It needed to be automated to make it as simple as possible to initiate.
- The CMS inclusion criteria is different than our internal data, but we made a decision to be more inclusive with a longer last known well time to better support our rural community. The neurointerventionist at our stroke referral center suggested this process change. He provided continuing education to our physicians, midlevels, and nursing staff.

What were the outcomes of this QI initiative? Is this process still in place? If so, how did you make that happen?

- This is still in progress. Due to our small patient population, we are continuing to work on improving our process using rapid cycle improvement strategies. Every missed metric is seen as a learning opportunity.
- We are adapting the process for situations when a patient comes in by private vehicle or if the stroke occurs while in the hospital.
- We are taking the opportunity to provide community education about stroke, such as the FAST exam. Time is brain, and it is our hope that the general public is able to identify the symptoms of a stroke so they do not delay essential medical care.

- We are also looking at other opportunities for improvement such as our ST-Elevation Myocardial Infarction (STEMI) and sepsis response.

How did QI help you and your team make your changes?

- Completing a chart review was very helpful to better understand our existing process. Because we have a small population, we can look at every case.
- We looked for root causes when things did not go as expected. The findings from the review assisted us in tweaking our response plan.
- Having defined process improvement steps provided us with structure.

What advice do you have for others who are considering starting the QI process?

- Be sure all key players/stakeholders are getting the results – know what the problems are and involve them in creating the solution.
- When communicating with the various stakeholders, make sure you provide the appropriate level of information for each audience. Each audience has a different role in the process and a different “why” (e.g. CMS measures vs. patient outcome/experience).
- Stay focused on the patient versus the regulation side when making the case.