A Rural Hospital's Journey to Becoming a Certified Acute Stroke–Ready Hospital

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Problem: For many stroke patients, rural emergency departments are the first point of medical care to stop brain cell death. We identified a need to meet standards to improve outcomes for stroke care.

Methods: An interdisciplinary Stroke Continuous Process Improvement Committee was formed. We conducted a gap analysis to address current stroke care processes. Chart audits were performed, and strategies to meet the requirements for recognition as an Acute Stroke Ready Hospital (ASRH) were implemented. The ASRH guidelines guided our certification journey.

Results: ASRH certification was achieved. In addition, stroke care outcomes such as door-to-computed tomography results, door-to-international normalized ratio results, door teleneurology consultation, and door-to-needle time have improved.

Implications for Practice: Achieving certification makes a strong statement to the community about a hospital's efforts to provide the highest quality in stroke care services. Becoming a certified ASRH promotes quality of patient care by reducing variation in clinical processes.

Key words: Stroke; Acute ischemic stroke; Hemorrhagic stroke; Teleneurology; Stroke certification; Alteplase

Stroke is a national health problem, affecting 7 million people in the United States and leading to 795,000 hospitalizations.[1] According to the American Heart Association/American Stroke Association, stroke is the leading cause of disability in the US. Estimates indicate that every 40 seconds someone sustains a stroke and every 4 minutes someone dies from a stroke.[2] Stroke follows heart disease and cancer as the third leading cause of death, with an estimated 750,000 Americans experiencing a new or recurrent stroke event each year, contributing to 160,000 deaths annually.[1] Every 4 out of 5 families in the US will be affected by a stroke. Thirty percent of the population younger than 65 years has a 30% chance of having a stroke in their lifetime. In the US, approximately $30 million is spent annually for medical expenses and lost wages.[1]

At least 50% of the population in the US does not live within 60 minutes travel time of a primary stroke center. Fewer than 5% of patients with an acute ischemic stroke who are eligible for acute treatment receive intravenous thrombolytic drugs.[3] We believed that becoming certified as an Acute Stroke Ready Hospital (ASRH) would enhance the delivery of stroke care and improve patient outcomes by minimizing neurologic deficits. The ASRH certification would ensure that surrounding Emergency Medical Services (EMS) would recognize that we, as a rural hospital, are prepared to meet the initial needs of stroke patients. Our rural hospital collaborated with the Primary Stroke Center (PSC) located in Greensboro, NC, as we progressed toward ASRH certification.

The purpose of this article is to share our journey as we became the first rural hospital in North Carolina to be awarded the Joint Commission ASRH certification. We discuss the local problem, significance to our community, methods used to become certified, outcomes, limitations, and implications for nurses.

Local Problem

Rockingham County, NC, is located within the 11-state region of the US called the Stroke Belt,[4] which includes the states of Alabama, Arkansas, Georgia, Kentucky, Indiana, Louisiana, Mississippi, North Carolina, South Carolina,

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Tennessee, and Virginia. The risk of stroke is 34% higher in this region than any other areas in the country.[5] Rockingham County, NC, has more than 91,000 residents; 78% are white, 19% are African American, and 6% are Hispanic.[6] Eighteen percent smoke, 64.3% are overweight or obese, and 16% are uninsured.[4] The leading causes of death are cancer (23.5%), heart disease (21.4%), diabetes mellitus (4.7%), and cerebrovascular diseases (4.5%).[6]

Our rural hospital is located 23 miles south of our health care organization's PSC. Large rural areas surrounding our hospital to the north, east, and west offer limited or no availability of care for emergent stroke care needs. Our hospital has 110 licensed beds and a 23-bed emergency department. The emergency department provides care for more than 36,000 patients a year. In 2015, the emergency department provided care for 195 stroke patients.

A recent report of the county's health care needs stated that access to care is a top priority for our county.[6] Our rural emergency department provides care for 6443 uninsured patients annually. The community has a continuous need for stroke education and for residents to activate EMS once stroke-like symptoms are identified.

Significance

Acute Stroke Ready certification would provide our community with the assurance that hospital personnel will deliver quality, standardized emergent care for patients experiencing stroke-like symptoms. Health care has become competitive, and ASRH certification demonstrates to consumers that they will receive the best care in the most efficient and timely manner possible.

In most rural settings, EMS transports patients to community hospitals. It is important that EMS personnel recognize stroke symptoms and transport patients to the most appropriate facility that can initiate initial stroke care and stabilize the patient's condition quickly. Researchers have found that patients are more likely to be diagnosed and treated sooner with tissue plasminogen activator (tPA) when they call 911 and activate EMS response.[7] EMS should transport suspected stroke patients to the nearest ASRH unless there is a primary or comprehensive stroke center within 15 to 20 minutes transport time.[8]

Residents in rural areas are at higher risk for poor outcomes and disability resulting from a stroke because of the distance that must be traveled and timely access to emergent medical care.[9] The national rate of tPA administration is 5% to 7% for qualifying patients. This number decreases to 2% to 4% for rural communities.[9] Factors affecting this percentage include lack of training for EMS and nursing personnel on acute stroke units, inadequate hospital protocols, challenges in diagnosis, and transportation issues.

Intended Improvements

The 4 clinical practice outcomes that needed improvement were door-to-needle time, door-to-computed tomography (CT) results, door-to-international normalized ratio (INR) results, and teleneurology consultation time. As we formed an interdisciplinary Continuous Process Improvement (CPI) team for stroke measures, we also worked to standardize practices and ensure that best practices were embedded in the daily work of nurses as they cared for stroke patients.

Methods

THE OVERALL JOURNEY

Our journey began when our President and Vice President of Nursing approached the Quality Team to discuss their desire for our hospital to be recognized as an ASRH. Nursing administration wanted our hospital be a leader in providing approved evidence-based standards of care to our stroke patients and to be recognized by our community and EMS as a hospital equipped to provide the initial care for stroke patients. ASRH certification provides recognition by select insurers and other third parties to be eligible for insurance reimbursements or participation in managed care plans and contract bidding.

The quality team conducted a gap analysis to examine our current stroke care processes and to identify areas that needed to be improved. An interdisciplinary team was formed to initiate our stroke program; this team later became our stroke Continuous Process Improvement team (CPI; Figure 1). Our ED medical director agreed to be our Acute Stroke Ready Stroke Program director. We obtained a letter of support from hospital administrators before any further steps were taken to become certified.

The ASRH certification requires basic training in stroke care and 4 hours of stroke education annually. Our emergency department and medical-surgical clinical nurse specialists (CNSs) developed separate computer-based learning modules on basic care of the stroke patient and the acute stroke care process for ED nurses, ED technicians, secretaries, registration staff, inpatient nurses, and ED physicians. All nurses in the emergency department, medical-surgical units, and intensive care unit are required to complete the National Institute of Health Stroke Scale module yearly. Our neurologic CNS provided stroke classes