

A Case Report: Enabling a Process Change one Nurse's Experience

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1. Introduction

Caring for acute stroke patients can be a truly difficult endeavor for nurses in all aspects of care at every level of practice. Care protocols established by Get with the Guidelines (GWTG), a quality improvement program developed to stimulate adherence to stroke guidelines, was developed by the American Stroke Association (ASA)¹. Hospitals undergo rigorous evaluations to gain the disease-specific care designation either as a Primary or Comprehensive Stroke Center. These hospitals follow care protocols either developed by individual states Department of Health and Human Services or GWTG/ASA. Improvements in outcomes are evident in greater percentages when hospital staff accepts and adheres to guidelines, which provides improvement of care for the acute stroke patient². Because of the heightened importance of stroke care in the US, CDC included sixteen objectives in Healthy People 2010 that were dedicated to stroke care³. But what must be done to assure the staff understand the protocols for care and carry them out appropriately?

As a health care professional for over 40-years, I wanted to advance my education as many nurses do. I began my career as an associate degree Registered Nurse. After several years, I obtained my Bachelor of Science in Nursing and my Master of Science in Nursing degrees while working at the bedside caring for patients. The final academic path was to obtain my Doctorate in Nursing. During my bedside nursing career of 16+ years, I had extensive experience caring for stroke, cardiac and various medical surgical patients. Being employed in healthcare settings may also lead nurses to various areas of care. Once such area was to develop a stroke program in 2006. This facility did not have any documentation, policies or protocols established to help me manage this process.

At this time, there was a group of health care professionals in New Jersey developing a specialized organization that would enable nurses like me to manage these processes. Hence the birth of the New Jersey Stroke Coordinator Consortium (NJSCC). Being a founding member of this organization allowed me to discuss issues I had found while developing the stroke program with other stroke nurses, program managers and advance practice nurses. I had noted that other stroke health care professionals in my state were needing similar direction to develop a program, and to manage any issues that a program manager may identify. NJSCC is a professional nursing organization representing stroke healthcare professionals from hospitals, rehabilitation facilities, and the American Heart Association/ASA within the state of New Jersey (to this day, NJSCC is still effectively overseeing the care of acute stroke patients in New Jersey).

As a member of NJSCC, I understood the need to standardize care to enable positive outcomes for acute stroke patients. However, I am not an Advanced Practice Nurse and could not prescribe so I was at a loss if the care was not performed according to the guidelines recommended by the American Stroke Association (ASA) or Brain Attack Coalition (BAC), such as writing orders within a specific time frame or ordering specific items for care such as CT scan or neurologic checks. As a Registered Nurse with many years' experiences caring for stroke patients and managing several stroke programs, this led me to contemplate research on this topic which was used as my Doctoral Dissertation in 2010. During my review of literature, imagine my surprise to find no literature investigating stroke care in New Jersey to compare my outcomes and only 1 article describing an evaluation of stroke care in the Stroke Belt

of the United States⁴. I decided to use this information as my “landmark article”, however, my research looked at specifics of care in greater detail to determine if what was currently being done, in 2010, was effective for our patients.

My study received IRB approval prior to pilot testing of a self-developed questionnaire was conducted. Pilot testing was completed by three members of the Association of Neurovascular Nurses for content validity to strengthen the survey and determine the appropriateness of the questions⁵. I had been a member of this organization for many years and obtained my Neurovascular Certification in 2010. As a certified Neurovascular Nurse, I investigated all hospitals within New Jersey in 2010 regarding their compliance with acute stroke practices. This was my dissertation for my Doctor of Nursing Practice degree which was published in the Journal of Neuroscience Nursing⁶.

As a member of NJSCC, I obtained consent to present my questionnaire to the membership which was used as a convenience sample. The NJSCC members (n=79) who participated in my study, consisted of nurses (stroke coordinators) and other healthcare professionals such as nurse educators; performance improvement/quality improvement coordinators; advance practice nurses (APNs); and managers, directors, and/or administrators of stroke programs. Both Primary and Comprehensive Stroke Centers as well as those with no designation in New Jersey but following protocols for care were invited to participate in my study. I obtained a list of

New Jersey hospitals from the American Hospital Association (n = 74). Each hospital was sent an introduction letter as an invitation to participate in the study evaluating the care being provided to acute stroke patients (all data was aggregate and collected by members of NJSCC).

This study yielded 55 completed questionnaires, a 70% response rate. I identified multiple issues as affecting outcomes of stroke care. Hospitals surveyed, both certified and non-certified as stroke centers, followed appropriate and recommended care for acute stroke only 87% of the time (**Table 1 & Table 2**). Remember, if the guideline is not followed, the patient outcome may be affected. I identified lack of documentation as the main issue that led facilities non-compliance with care protocols. Lack of documentation reflects missed core measures. If the measure was not completed or someone forgot to document the process, the same outcome for data collection. Missing documentation for whatever reason is considered a “missed core measure” according to best care practices. In nursing, a well-known statement is “if it is not documented, it is not done”. My research findings were presented at a NJSCC meeting, allowing all stroke health care professionals to identify their “missing link”. A recommendation was made to all hospitals to implement processes to address their individual deficiencies in stroke guideline compliance. Process changes may enable improved compliance on these core measures, which may improve stroke outcomes of care across the state.

Table 1: Guideline compliance: First 10 minutes of Acute Stroke Care.

	Certified centers (n = 32)		Non certified centers (n=2)	
	Yes	No	Yes	No
Assess ABCs (airway, breathing, circulation) and vital signs	100.0%	0.0%	100.0%	0.0%
Provide oxygen if hypoxemic	100.0%	0.0%	100.0%	0.0%
Obtain intravenous access and blood specimens	81.3%*	18.8%*	100.0%	0.0%
Check glucose; treat if indicated	87.5%*	12.5%*	100.0%	0.0%
Perform neurologic screening assessment	100.0%	0.0%	100.0%	0.0%
Activate stroke team	100.0%	0.0%	50.0%	50.0%
Order emergent computed tomography scan of brain	93.8%	6.3%	100.0%	0.0%
Obtain 12-lead electrocardiogram	62.5%*	37.5%*	100.0%	0.0%

*Significant at 0.05 level; **Significant at 0.01 level

Table 2: Stroke performance measure guideline compliance 2010.

	Quadra Med/Nuance Benchmark	Certified Centers	Noncertified Centers		
Stroke performance measure	1Q2010	(n=32)	(n=2)	Pearson Correlation	P Value
Deep vein thrombosis prophylaxis	79%	87.64%	95.0%		
Discharge on antithrombotic	96%	93.00%	83.5%	0.891*	0.000
Patients with atrial fibrillation receiving anticoagulation	91%	92.00%	50%	0.664*	0.005
Antithrombotic before the end of day 2	91%	91.71%	100%	0.914*	0.000
Lipid panel by the end of day 2 and stain if low-density lipoprotein is greater than 100	88%	86.36%	75%	0.869*	0.000
Screen for dysphagia before oral intake	a	78.79%	75%	0.498*	0.050
Stroke prevention education provided	72%	89.36%	100%	0.978*	0.000
A plan for rehabilitation considered	92%	91.71%	100%	0.907*	0.000

^aNot abstracted for the joint commission data analysis

*Significant at 0.05 level; **Significant at 0.01 level

My study findings were presented during Grand Rounds at another stroke center I was managing in 2010. In attendance was nursing administrators, the Medical Department heads as well

as several nursing unit managers and my Doctoral Defense team from my university. The outcomes empowered administration to recognize that more education was needed, not only for nursing

staff, but physician staff as well. This allowed me to recommend the following process changes which lead to better compliance with stroke guidelines for hospital's patients during my tenure as stroke program manager.

- Education for both APN's at that hospital brought them to the forefront of stroke care.
- During development of the EHR (Electronic Health Record) allowed me to work with the Information Technology Department. to formulate a new stroke order set and nursing documentation which allowed all staff caring for stroke patients to follow guidelines and protocols with ease.
- Restructuring the documentation process, either on paper (which was used in some areas) or electronic documentation.
- Education processes for new staff was developed which consisted of a CE booklet for nursing staff and an education booklet for unlicensed staff which I assisted in the development along with other NJSCC members- this was a requirement as this facility had recently gained Primary Stroke Center designation and annual education was a requirement for all staff caring for the acute stroke patient.

For stroke patients, APNs may be the initial contact for stroke care. APNs can expedite as well as determine the accurate course of treatment. APNs are identified as front-line staff in most acute care hospitals with prescribing capabilities. APNs may function as an expert and as an educator for a new hire or another team member to ensure the same quality of care is provided. Having a provider on the front line in the Emergency Rooms or as hospital staff, enables the stroke core measures to be instituted at the first sign of stroke or on arrival to the emergency department.

I realized that being a stroke health care professional without prescriptive privileges (myself being a masters prepared RN working on her doctorate but my nursing education was not in Advance Practice Nursing), I was not able to initiate stroke protocols without a provider's order. At times, a provider may not be available. For stroke patients, "time is brain" I needed to change the process that was currently being followed to help manage the care of this patient population and improve outcomes of care. I worked closely with Nursing Administration and the Medical Department to identify two of the APNs at this hospital that would be "front line staff for stroke patients". This would allow them to gain a perspective on the requirements for care of acute stroke patients. Utilizing APNs to assist with protocol documentation, in some institutions, may increase guideline compliance. Physician and APN education was recommended to address this issue. Utilizing APNs as front-line staff and educating them on the requirements of care would address two issues many sites were lacking.

I was hoping to continue my research with a longitudinal study utilizing the same convenience sample; however, as I was no longer in this field of practice (I was now in academia teaching nursing students), it was difficult for me to gain access to the convenience sample and hospital data to complete a follow up study. It would be wonderful to determine if any facilities, Comprehensive or Primary stroke centers changed their practices to improve compliance with guidelines of care of the acute stroke patient.

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