

SE2EOa – PROFESSIONAL DEVELOPMENT

Using the required empirical outcomes (EO) presentation format, provide one example of an improved outcome associated with an evidence-based change in nursing practice that occurred due to a clinical nurse's(s') affiliation with a professional organization.

Problem

According to the American Heart Association (AHA), the hemorrhagic transformation of a stroke is a complication seen in some acute ischemic stroke patients post-mechanical thrombectomy with or without intravenous (IV) thrombolysis, typically tissue plasminogen activator (tPA). Hemorrhagic transformation of a stroke may occur when peripheral blood extravasates cross a disrupted blood brain barrier into the surrounding brain tissue following mechanical thrombectomy with or without administration of IV tPA. Hemorrhagic transformation of stroke is a complication that worsens stroke patient outcomes and increases mortality. As a certified comprehensive stroke center, NewYork-Presbyterian/Columbia University Irving Medical Center (NYP/Columbia) tracks and monitors the percentage (%) of patients developing hemorrhagic transformation (hemorrhagic transformation rate) post mechanical thrombectomy with and without IV tPA.

Pre-Intervention

3Q 2021:

- The organization-wide rate of hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA was 4.54 percent in 3Q 2021.
- Cris Perdomo, MSN-Ed, RN, Program Administrator, Stroke, and Kyra Lizardo, MSN, RN, FNP-BC, stroke nurse practitioner (clinical nurse), reviewed the latest evidence-based scientific statement issued by the American Heart Association, *AHA Care of the Patient with Acute Ischemic Stroke (Endovascular/Intensive Care Unit-Postinterventional Therapy): Update to 2009 Comprehensive Nursing Care Scientific Statement*. They learned about the new evidence-based guidelines outlined in this document through their affiliation with the

AHA/American Stroke Association. Overseeing NYP/Columbia’s stroke program and maintaining its status as a certified comprehensive stroke center required Ms. Perdomo and Ms. Lizardo to maintain close association with and regularly gain information from the AHA/American Stroke Association to improve stroke care and patient outcome. According to AHA’s scientific statement, nurses' timely recognition of changes in patient status and early interdisciplinary care team management plays a crucial role in minimizing acute ischemic stroke complications and enhancing patient outcomes. The AHA statement also recommended specific parameters to be included in the handoff process:

- Presenting symptoms
- National Institutes of Health Stroke Scale (NIHSS) score
- Area of infarct
- Synopsis of the intervention
- tPA dose and time, if applicable
- Thrombolysis In Cerebral Infarction (TICI) score
- Time of hemostasis
- Complications
- Post-procedure monitoring time (i.e., next assessment time)

The existing handoff process primarily involved the anesthesiologist providing a report to the receiving clinical nurse.

- Ms. Perdomo and Ms. Lizardo met with Milagros Soto, MSN, RN, Patient Care Director (nurse manager), IR/INR-Radiology (606209, 250) [INR] Unit, to plan the implementation of the evidence-based nursing handoff to ensure neurological assessment at the recommended interval for patients were occurring during patient transfer from the INR to the Neuro ICU (8GS-605476) [Neuro ICU] and PACU (MB3,4-605325) [PACU] as this helps to identify and treat the neurological symptoms leading to the prevention of hemorrhagic transformation.

Goal Statement

To decrease the organization-wide rate (%) of hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA at NYP/Columbia.

Participants

Name/Credentials	Discipline	Title	Department/Unit
Cris Perdomo, MSN-Ed, RN	Nursing	Program Administrator, Stroke	Administrative Neurology

Kyra Lizardo, MSN, RN, FNP-BC	Nursing	Stroke Nurse Practitioner (Clinical Nurse)	Nursing
Milagros Soto, MSN, RN	Nursing	Patient Care Director (Nurse Manager)	INR
Kay-Ann Wilson-Phipps, MSN, RN	Nursing	Patient Care Director (at the time)	Neuro ICU
Mary Beth Costello, MSN, RN, CAPA, CPAN, FNP-BC, NEA-BC	Nursing	Per Diem Nurse Instructor	PACU
Max Pascua, BSN, RN, CCRN	Nursing	Clinical Nurse	PACU
Ellie Jun, DNP, RN, CCRN	Nursing	Patient Care Director (Nurse Manager)	PACU

Intervention

4Q 2021:

- Ms. Lizardo huddled with the INR clinical nurses to reinforce the importance of performing neurological assessment according to AHA’s scientific statement post-mechanical thrombectomy with and without IV tPA:
 - Peripheral vascular assessment and vital signs every 15 minutes for 2 hours
 - Peripheral vascular assessment and vital signs every 30 minutes for 6 hours
 - Peripheral vascular assessment and vital signs every 1 hour for 16 hours

Ms. Lizardo collaborated with the INR clinical nurses to streamline the every 15-minute assessments, especially during patient transfers, to include the following:

- INR clinical nurses to perform the assessments immediately prior to transfer to allow for transit time and receiving team to get the patient settled.
- Optimize efficiency and automation by employing a 15-minute interval approach. For instance, if the time of hemostasis, marking the start of post-procedure assessment, is 7:03, and although 7:18 would represent the next assessment due and is not incorrect, conducting assessments at 7:15, 7:30, 7:45, etc., would be easier to remember and comply with the guidelines. Early assessment is acceptable, but late assessments are not.

Impact statement: Standardizing the assessments, especially around patient transfer, eliminated the gap in monitoring and enabled the clinical nurses to help identify and treat the neurological symptoms leading to the reduction of hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA.

- Ms. Lizardo and Ms. Perdomo, in collaboration with Ms. Sotto, created the *INR RN Handoff to Next Unit* form. INR clinical nurses reviewed the handoff form and provided feedback. The parameters of the handoff form, as recommended in AHA's scientific statement, included the following:
 - Basic patient information as per NYP Policy 750 Patient Care Handoff communication
 - Time of hemostasis
 - Neurological assessment and vital signs due (At what interval: 15 mins, 30 mins, 60 mins)
 - Surgical site, extremity, and pulse check due (At what interval: 15 mins, 30 mins, 60 mins)

Impact statement: Customizing a handoff form for nurses on receiving units other than the Neuro ICU and PACU provided a simpler iteration of the handoff process without sacrificing the required monitoring to promptly detect neurological symptoms and intervene, and ultimately contributed to the reduction of hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA.

- Ms. Lizardo collaborated with Kay-Ann Wilson-Phipps, MSN, RN, Patient Care Director (at the time), Neuro ICU; Mary Beth Costello, MSN, RN, CAPA, CPAN, FNP-BC, NEA-BC, PACU, per diem nurse instructor; Max Pascua, BSN, RN, CCRN, clinical nurse, PACU; and Ellie Jun, DNP, RN, CCRN, Patient Care Director, PACU; to create the *Guide for the Receiving Unit RN* (Neuro ICU/PACU), which is a handoff form for Neuro ICU and PACU clinical nurses. The parameters of this handoff form, consistent with the AHA's scientific statement, included the following:
 - Basic patient information as per NYP Policy 750 Patient Care Handoff Communication
 - Case details
 - Presenting symptom(s)
 - National Institutes of Health Stroke Scale (NIHSS) score

- Intervention: tPA, mechanical thrombectomy, or both
- Time tPA was given
- Time of hemostasis
- Reperfusion/TICI score
- Complications (if any)
- Blood pressure goals
- Assessment
 - Neuro and vital signs due at intervals: 15 mins, 30 mins, 60 mins
 - Neurological assessment and vital signs due at intervals: 15 mins, 30 mins, 60 mins
 - Surgical site, extremity, and pulse check due at intervals: 15 mins, 30 mins, 60 mins
- Once patient is received in your unit, If any of the answers in this section are marked NO, address with medical doctor and document communication
 - Time arrived in your unit
 - Order set in place: thrombectomy - Yes/No
 - Chart reflects orders on standard monitoring - Yes/No
 - Blood pressure parameter specified in the orders - Yes/No

Impact statement: Creating a comprehensive handoff form for Neuro ICU and PACU nurses ensured monitoring compliance of stroke patients with higher acuity, thus contributing to the decrease in hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA.

- Ms. Lizardo and Ms. Costello conducted in-services on the nursing handoff process, an evidence-based change, in the INR, PACU, and Neuro ICU during huddles.

Impact statement: The in-services provided shared learning experience among clinical nurses and facilitated adaptation to the nursing handoff, an evidence-based change, ultimately contributing to the decrease in hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA.

- Ms. Lizardo communicated the nursing handoff process, an evidence-based change, as well as the final iteration of the handoff forms to INR, PACU, and

Neuro ICU clinical nurses via email and the process was fully implemented by the end of 4Q 2021.

Impact statement: Communication of the new nursing handoff process helped the clinical nurses understand the rationale behind the evidence-based change and made them more likely to comply, ultimately contributing to the decrease in hemorrhagic transformation for stroke patients post-mechanical thrombectomy with and without IV tPA.

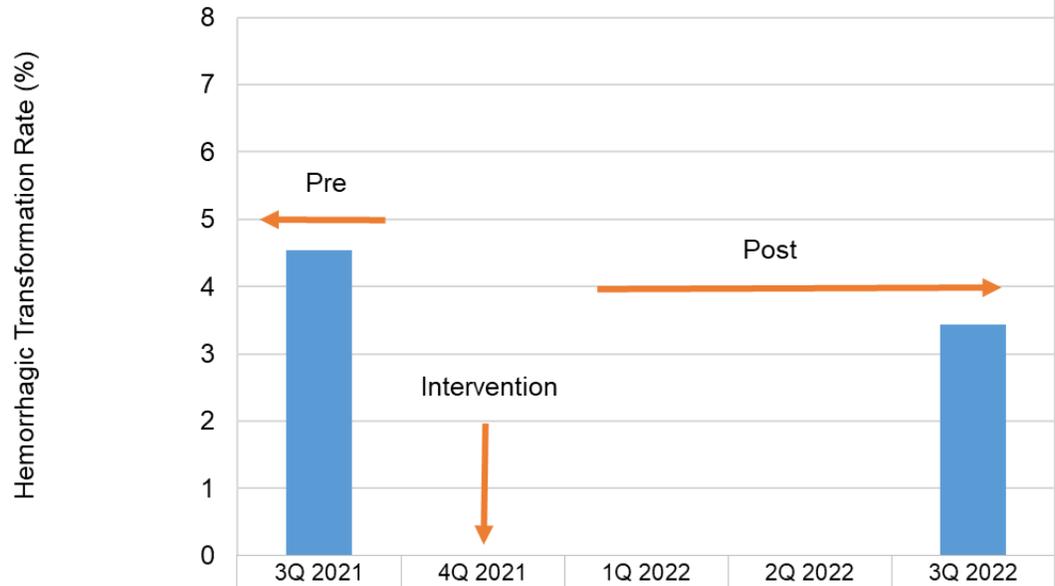
○ **Key references:**

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Outcome

SE2EOa NYP/Columbia Organization-wide Hemorrhagic Transformation Rate (%) for Stroke Patients Post-Mechanical Thrombectomy (MT) with and without IV tPA



NYP/Columbia Org-wide Hemorrhagic Transformation Rate (%) Post-MT with and without IV tPA	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022
	4.54		0.00	0.00	3.44