

SE1EOb

Using the required EO presentation format, provide an example, from an ambulatory care setting, of an improved patient outcome associated with the participation of clinical nurse(s) serving as a member(s) of an organization-level interprofessional decision-making group.

Example b: Code Stroke 2.0 – Improving Door-to-Needle time for Code Stroke Patients

Problem

WakeMed's Code Stroke Team sought to improve the median door-to-needle time in the Raleigh Campus Adult Emergency Department (AED). The Joint Commission gave a challenge and recommendation for healthcare organizations to improve the median door-to-needle time.

Pre-Intervention

A Kaizen event was organized to engage an interprofessional team in improving the timeliness of care required for patients arriving from Emergency Mobile Services (EMS) to a WakeMed ED as a Code Stroke. The Code Stroke Team organized an interprofessional, organization-wide team that included Clinical Nurses Kacey Faulkner, BSN, RN, Clinical Nurse IV, North ED, and Wyatt Holley, BSN, RN, Clinical Nurse IV, Raleigh AED. This was named "Code Stroke 2.0" to address The Joint Commission challenge. Code Stroke Program Chair Larissa Hill, MS, Administrative Executive Director Neurosciences, reviewed the literature, and the Code Stroke 2.0 team decided to use the American Heart Association's "Target: Stroke Phase III" guidelines as a framework for their strategies.

The Kaizen event participants identified several factors contributing to the delays in treatment. These included not having a defined space for EMS arrivals or alteplase administration, lack of defined roles, no post-CT call from the nurse to the Sevaro Telestroke providers, and delays in mixing alteplase. In addition, several travel nurses working in the Raleigh AED shared best practices they had experienced at other facilities, which led to further investigation in the literature. The systemwide goals and associated strategies were trialed in the Raleigh Campus AED. Each Plan, Do, Study, Act (PDSA) process was carefully organized, with leadership and clinical staff engagement and an emphasis on the importance of shared decision-making.

During the Kaizen event, a PDSA implementing a new hallway location outside the CT suite for initial assessment of EMS code stroke arrivals was conducted in the Raleigh AED. This was led by Holley; Christie Hatch, MSN, RN, CEN, NE-BC, Director, Emergency Services/1A Clinical Evaluation Unit; Julie Turkel, BSN, RN, CCRN, Clinical Nurse IV, RRT/Code Blue/CV Response Team; and Ryan Cooper, MD, Wake Emergency Physicians, in conjunction with the Wake County EMS staff. The Wake County EMS staff's collaboration with this group included the suggestion to rename the new location from "parking lot" to "Launchpad" to align with the verbiage used by other EDs county-wide. Turkel, Holley, Hatch, and Cooper worked together to find the

appropriate location in the AED for the Launchpad. Clinical Nurses Holley and Turkel collaborated to refine this process with the many staff members required to respond during a Code Stroke so they could practice a Code Stroke response in the new Launchpad space prior to implementation.

Also, during the Kaizen event, Cooper, Hatch, Holley, Chandi Kalaria, MD, Stroke Program Medical Director, Raleigh Neurology Associates, and Dustin Allen, CT Radiology Supervisor, conducted an additional PDSA to create a dedicated space, called Telestroke Evaluation “PLASE,” in the CT area to conduct the Telestroke evaluation and, if appropriate, alteplase administration.

The following updated the stroke algorithms to include the new workflow: Hatch; Kalaria; Faulkner; Amy Short, MSN, RN, NEA-BC, Director, Emergency Services, Cary Emergency Services; Alyse Arnold, BSN, RN, CEN, Nurse Manager Cary ED; Benita Smith, BSN, RN, CPEN, Nurse Manager, Brier Creek ED; LeighAnn Perry, BSN, RN, CEN, Clinical Educator/Supervisor, Emergency Department; and Stroke Coordinators Sarah O’Neal, BSN, RN, CCRN and Kathy Nadeski, BSN, RN, SCRNP. The updated stroke algorithms were sent for approval to all ED nursing directors, managers and supervisors/educators systemwide. Once approved, they were sent to Marketing for printing, posted on the nursing units, and incorporated into all stroke education for clinical staff.

The median door-to-needle time in the Raleigh AED was 49.5 minutes in February 2023. This is calculated by listing the door-to-needle times in order from shortest to longest and using the middle number as calculated by Excel.

Goal Statement

Decrease the median door-to-needle time for Code Stroke patients arriving by EMS to the Raleigh Campus AED.

Participants

Code Stroke 2.0 Team			
Name/Credentials	Discipline	Title/Role	Department
Kelly Davis, BSN, RN, CEN	Nursing	Supervisor/Educator	Cary ED
Kacey Faulkner, BSN, RN	Nursing	Clinical Nurse IV	North ED
Wyatt Holley, BSN, RN	Nursing	Clinical Nurse IV	Raleigh ED
Kathy Nadeski, BSN, RN, SCRNP	Nursing	Stroke Coordinator	Stroke Program
Michelle Gerolemon, BSN, RN, CRRN	Nursing	Stroke Navigator	Stroke Program

Julie Turkel, BSN, RN, CCRN	Nursing	Clinical Nurse IV	RRT/Code Blue/CV Response Team
Christie Hatch, MSN, RN, CEN, NE-BC	Nursing	Director, Emergency Services/1A Clinical Evaluation Unit	Emergency Department
Ruchir Shah, MD	Physician	Telehealth Provider	Sevaro
Amanda Gorman, PharmD, BCPS, BCCCP	Pharmacist	Supervisor ED	Pharmacy
Dustin Allen, BS, RT(R)(CT)	Radiology	Supervisor	CT scan, Radiology
Sarah O'Neal, BSN, RN, CCRN	Nursing	Stroke Coordinator	Stroke Program
Ryan Cooper, MD	Physician	Stroke Program Co-Chair	Wake Emergency Physicians
Larissa Hill, MS	Administration	Executive Director	Neurosciences
Leighann Perry, BSN, RN, CEN	Nursing	Clinical Supervisor/Educator	Emergency Department
Amy Short, MSN, RN, NEA-BC	Nursing	Director	Cary Emergency Services, 1East Clinical Eval Unit, HVU, Cath Lab
Alyse Arnold, BSN, RN, CEN	Nursing	Manager	Cary ED
Benita Smith, BSN, RN, CPEN	Nursing	Manager	Briar Creek ED
Chandni Kalaria, MD	Physician	Stroke Program Medical Director	Raleigh Neurology Associates
Swati Coon, MD	Physician	Telehealth Provider	Sevaro

Description of the Intervention

March 2023

- Nadareski, O'Neal, Kalaria, and Cooper spearheaded the creation of in-service education and an online learning module that was then delivered systemwide to all ED providers, ED nurses, ED staff, EMS staff, Sevaro Telehealth providers, Imaging staff, and RN rounding staff.

April 2023

- Kelly Davis, BSN, RN, CEN, Clinical Supervisor/Educator Cary ED, collaborated with Amanda Gorman, PharmD, BCPS, BCCCP, Supervisor, Pharmacy, to enhance the Alteplase Order Panel to make it more nursing-friendly, increase its usability, and decrease variability and time delays. Davis submitted requests to the Epic Optimization Team to preselect specified orders in the order panel, such as a 24-hour CT and Nicardipine as the blood pressure medication choice, and

tracked these requests to completion. Davis provided education to the clinical nurses during staff meetings.

- Clinical Nurses Faulkner and Holley determined that the appropriate equipment for the Launchpad space was not available. They worked with Hatch to obtain the equipment for the space, including a workstation on wheels and Dinamap, glucometer, and supplies.
- Clinical Nurses Faulkner and Holley advocated and collaborated with Hatch to work with AED clinical nurses to perform mock drills to continuously improve the efficiency of this space.
- Cooper and Kalaria implemented a PDSA with ED providers using a new seven-step standardized report for the first call to Sevaro, which would be made in the designated Launchpad space. Obtaining the time that the last dose of coagulate medication was given and then being able to call directly to a neurological physician would cut down on precious time.

The participation of WakeMed ED Clinical Nurses Holley and Faulkner, in collaboration with Stroke Coordinators Nadeski and O'Neal, serving as members of the organization-level, interprofessional Code Stroke 2.0 Team, contributed to the success of the evidence-based Launchpad in decreasing the median door-to-needle time for stroke patients at the Raleigh AED.

References:

Ashcraft, S., Wilson, S. E., Nyström, K. V., Dusenbury, W., Wira, C. R., & Burrus, T. M. (2021). Care of the patient with acute ischemic stroke (prehospital and acute phase of care): Update to the 2009 comprehensive nursing care scientific statement: A scientific statement from the American Heart Association. *Stroke*, 52(5). <https://doi.org/10.1161/str.0000000000000356>

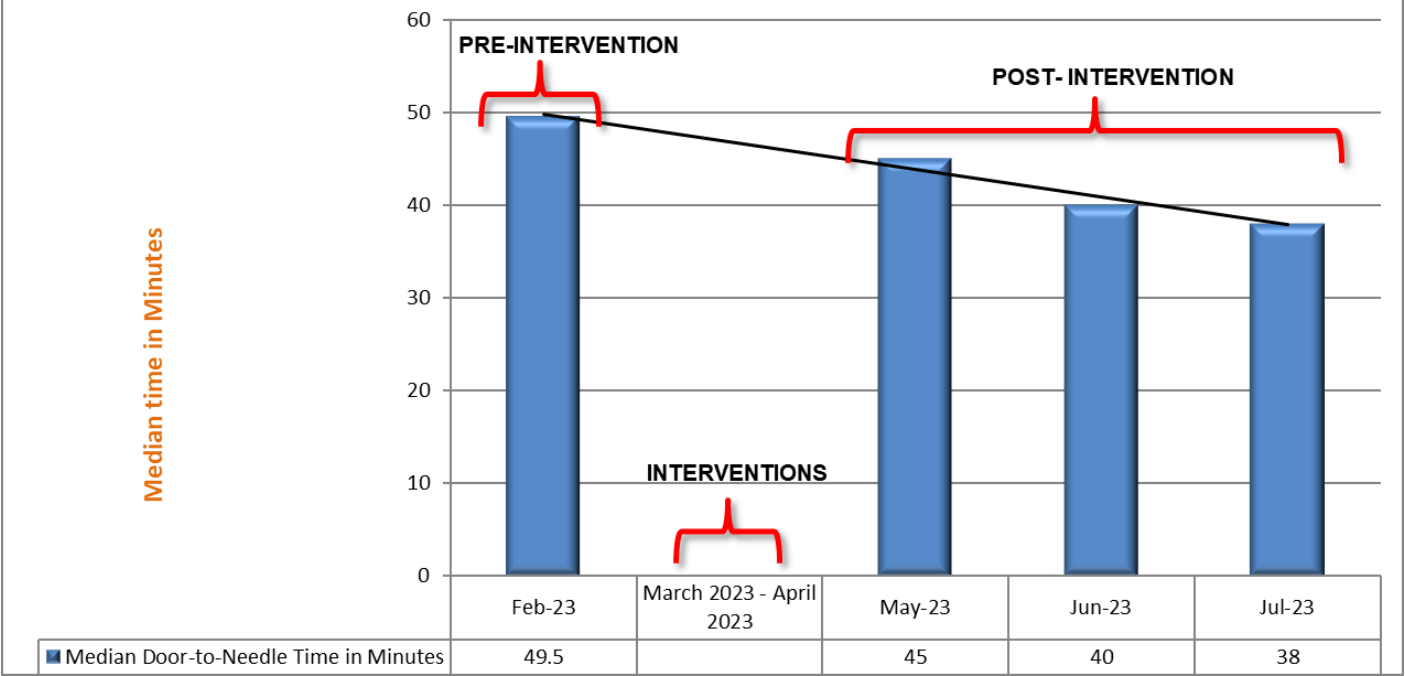
Powers, W. J., Rabinstein, A. A., Ackerson, T., Adeoye, O. M., Bambakidis, N. C., Becker, K., Biller, J., Brown, M., Demaerschalk, B. M., Hoh, B., Jauch, E. C., et al., (2019). Guidelines for the early management of patients with acute ischemic stroke: 2019 update to the 2018 guidelines for the early management of acute ischemic stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, 50(12). <https://doi.org/10.1161/str.0000000000000211>

Target: Stroke Phase III. (n.d.). Wwww.heart.org. Retrieved May 1, 2024, from <https://www.heart.org/en/professional/quality-improvement/target-stroke/introducing-target-stroke-phase-iii#:~:text=Target%3A%20Stroke%20has%20helped%20hospitals%20nationwide%20achieve%20improved>

Outcome

SE1EOb-1

Median Door-to-Needle Time in Minutes for Code Stroke Patients
WakeMed Raleigh Campus Adult Emergency Department



(Evidence SE1EOb-1, Median Door-to-Needle Time in Minutes for Code Stroke Patients
WakeMed Raleigh Campus Adult Emergency Department)