

*When Nurses Lead Change-- Improving Door to Alteplase Times for Stroke Alert Patients*

## **Author(s)**

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## **Abstract**

### **Did you receive Institution Review Board (IRB) approval for this project?**

Not Applicable

### **Educational Track**

Clinical

### **Purpose:**

The American Heart Association Target: Stroke Phase II states that goals for alteplase administration should be set at 75% of cases within 60 minutes, and 50% within 45 minutes. The Stroke Champion Program was created to engage bedside nurses in identifying barriers and redesigning the stroke alert workflow.

### **Design:**

This process improvement project was designed to be led by bedside RNs. High performing ED RNs were identified by ED leadership and invited to participate. The ED CNL and Stroke Coordinators used LEAN processes to facilitate RN identification of barriers and develop future state workflows.

### **Setting:**

This project took place at a suburban Level II Trauma, STEMI, and Primary Stroke Center with Neurointerventional capabilities. The ED has 34 licensed beds and sees more than 80,000 patients annually.

### **Participants/Subjects:**

Twelve ED RNs served as Stroke Champions. The revised process was implemented with all patients presenting within 6 hours of stroke symptom onset. All ED staff and ED physicians were trained prior to implementation, as were ancillary partners in lab and diagnostic imaging.

### **Methods:**

The ED Clinical Nurse Leader and Stroke Coordinator received approval from the Chief Nurse Executive to recruit 12 Champions and provide paid time. Participating staff were given three options to attend a 2 hour meeting with their peers. These meetings followed LEAN methodologies, allowing mapping of current state, barriers, and ideal future state. Feedback was summarized and Champions approved new process. The Stroke Checklist was redesigned, outlining specific roles, timeline of events (such as what occurs before and after CT), and what to communicate post CT. "Grab and GO" IV start kits were created and staged. ED Providers, staff, and ancillary departments received electronic and in person education. During implementation, Stroke Champions were available to assist other staff during stroke activation. ED and Stroke Team Leadership also responded to alerts. Charts were reviewed retrospectively.

### **Results/Outcomes:**

The process was revised twice based on staff feedback. Initial response moved from the ambulance bay to the critical care bay due to issues with lighting and congestion. A Mayo stand for CT to make IV starts in CT easier. Multiple data points were measured pre- and postimplementation. Pertinent metrics include Door to CT, Door to alteplase < 60 min, Door to alteplase < 45 min, and Median door to alteplase time. Door to CT dropped from 15.3 to 14.3 minutes, a 6.5% change. Median Door to Alteplase time dropped from 58 to 47 minutes, an 18.97% change. Alteplase administered < 60 minutes rose from 52 to 71.2%, a 19.2% increase. Alteplase administered < 45 minutes rose from 17 to 47.9%, a 30.9% increase.

### **Implications:**

Staff engagement is critical in development of efficient, effective processes. Not only can they speak to barriers that leadership is unaware of, but they assist staff with process ownership and acceptance. It is important to adequately prepare staff for and support staff during process go live. Involving and educating core department staff and ancillary staff ensures for a smooth process. Support during go live helps to reinforce expectations and rapidly identify and address unexpected issues.

## References

### 1. Reference 1

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Fonarow, G.C., Smith, E.E., Saver, J.L., Reeves, M.J., Hernandez, A.F., Peterson, E.D., ...Schwamm, L.H. (2011). Improving door-to-needle times in acute ischemic stroke: The design and rationale for the American Heart Association/American Stroke Association's Target: Stroke Initiative. *Stroke*, 42, 2983-2989. doi: 10.1161/STROKEAHA.111.621342.

### 3. Reference 3

Marquis, B. L., & Huston, C. J. (2015). *Leadership roles and management functions in nursing: Theory and application* (8th ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.

### 4. Reference 4

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