



Mind the Time: A Quality Improvement Project to Increase the Percent of Ischemic Stroke Patients Receiving intravenous Tissue Plasminogen Activator within 60 Minutes after Arrival at the Emergency Department

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Introduction

Stroke is the third leading cause of death and leading cause of long term disability in the USA. Intravenous administration of tissue plasminogen activator (t-PA) is the only FDA approved medical therapy for treatment of patients with acute ischemic stroke. It is recommended by the American Heart Association that earlier treatment with t-PA within 90 minutes of symptoms may result in a more favorable patient outcome. Initiating t-PA for ischemic stroke patients within 60 minutes after Emergency Department (ED) triage is an indicator tracked by the Get With The Guidelines database. The purpose of our project was to increase the number of ischemic stroke patients receiving t-PA within 60 minutes after triage.

Methods

The Six Sigma® process model was applied in order to develop an understanding of variations in the times of triage to initiation of IV t-PA data. We assembled a multidisciplinary team to develop and measure aspects of our current protocols, analyze data, investigate and identify the causes of delays and form action plans to enhance our new process. We tracked the patient flow from first responder contact to thrombolysis time. As a result the team acknowledged that it was imperative to impact the early recognition of ischemic stroke patients in the field. This led to local and regional stroke educational programs. Our neuroscience team of physicians and nurses proceeded to educate over 850 emergency responders.

Results

Initial analysis of the baseline data showed that 56 % (5 of 9) of the ischemic stroke patients received intravenous t-PA within 60 minutes of triage. Once the stroke code process was implemented, 79 % (15 of 19) of ischemic stroke patients received intravenous t-PA within 60 minutes after triage. These results were obtained within 9 months of process implementation. Specific process changes included the use of a standard time clock, shorter CT scan turn around times, dedicated 24/7 ED pharmacists, quicker availability of medication administration pumps and ongoing feedback by all team members on the acute stroke process.

Summary of Conclusions

The stroke team was able to identify barriers, institute process changes and ensure the implementation of change from the pre-hospital community setting to the acute in-hospital care.

