Reduction of Door-to-Needle Times in Acute Ischemic Strokes

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Clinical Problem:
Our Emergency Department (ED) aims to exceed the goals of the American Heart Association (AHA) and American Stroke Association (ASA) national quality improvement initiatives to improve acute ischemic stroke care. Our ED recognized that there was an opportunity to improve the ED “Code Stroke” process in order to reduce door-to-needle times.

Description of Evidence-Based Protocol (EBP):
The national standards established by the AHA/ASA state that patient outcomes improve when seen by a physician within 10 minutes, door-to-CT scans read within 45 minutes, and door-to-needle (tPA administration) within 60 minutes.

 Implementation of EBP:
Background: Data was analyzed for four months prior to implementation, showing an average door-to-needle time of 63 minutes
Design: Performance/Process Improvement project with staff education
Setting: Suburban Medical Center, Level II Trauma Center, Magnet Designated, Integrated Comprehensive Stroke Center
Participants: ED Care Team (120 staff)
Subjects: Acute Ischemic Stroke patients who received tPA from May 2017–June 2018 (42 cases)

Outcomes:
At three months post-implementation, the average time for door-to-needle was reduced to 43 minutes. Continuous ongoing measurement after 12 months shows a further reduction to 34 minutes.

Conclusions:
With the implementation of the new “Code Stroke” process and multidisciplinary education, the ED care team successfully reduced door-to-needle times by 38% over the initial one year period.

Implications for Emergency Nursing Practice:
The team utilized a collaborative approach with a robust process improvement initiatives in order to reduce brain cell death and length of stay to improve patient outcomes.

Further studies should include a correlation between the impact of lower door-to-needle times on functional patient outcomes 1 year post IV thrombolytics.

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