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No time to wait: Implementing a “Code Stroke” protocol within a community hospital

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Introduction: Stroke is the fourth leading cause of death in the United States, but even more devastating, it is the number one cause of adult disability, with approximately 800,000 occurrences annually. The only treatment available to decrease morbidity and mortality is extremely time-sensitive and is contingent on Last Known Well Time (LKWT). Current research shows patients with door-to-treatment times less than 60 minutes have the most optimal outcomes and opportunity to resume an independent lifestyle. Baylor Scott & White Medical Center – Hillcrest (Hillcrest), located in Waco, Texas, cares for approximately 500 stroke patients annually. Eighteen months of averaged acute ischemic stroke patients (AIS) patient care data showed door-to-doctor time 18 minutes; door-to-Cat Scan (CT) 32 minutes; door-to-CT results 56 minutes; door-to-lab results 48 minutes; and door-to-needle (time to treatment) 86 minutes. Changing the care process is imperative for Hillcrest to treat AIS patients in a timelier manner to improve patient outcomes.

PICO Question: Does a “Code Stroke” protocol improve patient outcomes and timeliness of care of acute stroke patients (AIS) within a community hospital setting?

Literature Review: Multiple literature sources reveal that decreasing door-to-needle time is critical in the achievement of optimal AIS patient outcomes. Given that brain imaging is required and treatment is time-sensitive, the need for timely diagnosis and treatment is a necessity; demanding coordinated care, including early identification by emergency medical services (EMS) and rapid in-hospital processes.

Practice Change: The only treatment available to decrease morbidity and mortality is extremely time-sensitive based on LKWT. This best practice is an organized systematic approach to AIS patients. To accomplish this evidence-based intervention, Hillcrest implemented a “Code Stroke” protocol to include pre-notification by EMS of AIS patients and multidisciplinary rapid stroke team notification via a single call activation system. Guided by pre-specified protocols, eligible stroke patients were, if medically appropriate, transported from the emergency department (ED) triage area directly to the CT scanner, bypassing the ED bed, for initial brain imaging to determine tissue plasminogen activator (t-PA) eligibility, enabling rapid interpretation of CT results. Rapid laboratory testing including blood glucose level and coagulopathy studies took place as soon as the patient was placed in an ED bed. Prompt access to and the administration of t-PA was delivered as soon as the patient was deemed eligible.

Evaluation Data: After the “Code Stroke” practice was implemented, door-to-treatment times decreased to an average of 46 minutes. Ultimately, 73% of eligible AIS patients treated within 60 minutes were discharged from the acute care setting home with no therapy indicated. This shows a significant increase from the initial 32% discharged home prior to the practice change.

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