Campaign Manual

October 2014

TARGET: STROKE℠ PHASE II

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GET WITH THE GUIDELINES® STROKE

TARGET: STROKE℠

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TARGET: STROKE℠ CAMPAIGN OVERVIEW

Target: Stroke℠, a national quality improvement initiative organized by American Heart Association/American Stroke Association, was launched in January 2010 to address shortfalls in providing timely acute stroke care.[1] The primary goal of Target: Stroke Phase I was for participating hospitals to treat at least 50% of their acute ischemic stroke patients with intravenous tissue plasminogen activator (tPA) within 60 minutes or less of hospital arrival. After the initiation of Target: Stroke, there was a substantial improvement in the timeliness of tPA administration with the proportion of patient with DTN times < 60 minutes increasing from 29.6% to 53.3% by the third quarter of 2013.[2] The principle Target: Stroke results also demonstrated improved clinical outcomes, including lower in-hospital mortality, more frequent discharge to a more independent functioning environment, and lower rates of tPA complication including symptomatic intracranial hemorrhage.[2]

Because of the success of Target: Stroke Phase I, the American Heart Association/American Stroke Association is launching Target: Stroke Phase II to continue eliminating treatment delays for people who suffer ischemic strokes by challenging hospitals to provide tPA to eligible patients in an even more timely fashion.

WHY JOIN TARGET: STROKE PHASE II

Target: Stroke focuses on improving care and outcomes among hospitals that provide IV tPA for eligible patients with acute ischemic stroke. The Target: Stroke initiative aims to provide all Get With The Guidelines-Stroke participating hospitals with the best practice strategies, supporting tools and educational resources necessary to achieve door to needle times as rapidly as possible.

All Get With The Guidelines-Stroke hospitals that enroll in Target: Stroke and meet the recognition criteria have the opportunity to receive Target: Stroke Honor Roll Recognition.

TARGET: STROKE PHASE II LAUNCH

Target: Stroke Phase II aims to provide tPA to eligible patients with acute ischemic stroke in a timely fashion.

The national goals of Target: Stroke Phase II are:

- Primary Goal: Achieve Door-to-Needle Times within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV tPA.
- Secondary Goal: Achieve Door-to-Needle times within 45 minutes in 50% or more of acute ischemic stroke patients treated with IV tPA.

Starting in January 2015, your hospital will have an opportunity to keep improving outcomes for stroke patients with the addition of two new Target: Stroke Honor Roll levels. The existing and new Target: Stroke Honor Roll Levels will include:

- Target: Stroke Honor Roll: Time to thrombolytic therapy within 60 minutes in 50% or more of acute ischemic stroke patients treated with IV tPA (same as current Phase I recognition criteria with same volume thresholds).

- New Target: Stroke Honor Roll-Elite: Time to thrombolytic therapy within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV tPA (same volume thresholds).
- New Target: Stroke Honor Roll-Elite Plus: Time to thrombolytic therapy within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV tPA AND time to thrombolytic therapy within 45 minutes in 50% of acute ischemic stroke patients treated with IV tPA (same volume thresholds).

To be eligible for Target: Stroke Honor Roll Awards, the hospital must currently hold Gold, Silver or Bronze performance achievement status in Get With The Guidelines-Stroke and have door-to-needle times meeting the criteria above for consecutive applicable patients (minimum of six patients) for at least one calendar quarter for initial awards and four calendar quarters for renewal. Additionally, the hospital must also complete the Target: Stroke Phase II survey.

AN OPPORTUNITY TO IMPROVE STROKE CARE

Despite the clinical trial evidence for better functional outcomes with early treatment with IV tPA, guideline recommendations, and recent improvements as a result of Target: Stroke there remain additional opportunities to improve the timeliness of treatment. Certain hospitals within GWTG-Stroke have been able to provide tPA within 60 minutes for the majority of their ischemic stroke patients and some are achieving door-to-needle times of 45 minutes or less.[2] As such, the goals for Target: Stroke Phase II are achievable benchmarks which can be reached though concerted and targeted efforts by participating hospitals.

CURRENT AMERICAN HEART ASSOCIATION/AMERICAN STROKE ASSOCIATION GUIDELINE RECOMMENDATIONS

Intravenous tPA for acute ischemic stroke represents one of the few therapies demonstrated to improve clinical outcomes. The current evidenced-based guideline-recommend use of intravenous tPA is as follows[3]:

1. Intravenous tPA (0.9 mg/kg, maximum dose 90 mg) is recommended for selected patients who may be treated within 3 hours of onset of ischemic stroke. (Class I: Level of Evidence A)
2. In patients eligible for intravenous tPA, benefit of therapy is time dependent, and treatments should be initiated as quickly as possible. The door-to-needle time (time of bolus administration) should be within 60 minutes from hospital arrival. (Class I: Level of Evidence A)
3. Intravenous tPA (0.9 mg/kg, maximum dose 90 mg) is recommended for administration of eligible patients who can be treated in the time period of 3 to 4.5 hours after stroke onset (Class I: Level of Evidence B). The eligibility criteria for treatment in this time period are similar to those for people treated at earlier time periods within 3 hours, with the following additional exclusion criteria: patients >80 years old, those taking oral anticoagulants regardless of INR, those with a baseline NIHSS score >25, those with imaging evidence of ischemic injury involving more than one third of the MCA territory, or those with a history of both stroke and diabetes mellitus. (Revised from the 2009 intravenous tPA Science Advisory)
4. Intravenous tPA is reasonable in patients whose blood pressure can be lowered safely (to below 185/110 mmHg) with antihypertensive agents, with the physician assessing the stability of the blood pressure before starting intravenous tPA (Class I: Level of Evidence B)

BENEFITS OF TIMELY REPERFUSION IN ISCHEMIC STROKE

The NINDS tPA Stroke Study demonstrated among 624 patients with ischemic stroke treated with placebo or tPA (0.9 mg/kg IV, maximum 90 mg) within 3 hours of symptom onset that favorable outcomes were achieved in 31% to 50% of patients treated with tPA, as compared with 20% to 38% of patients given placebo at 3 months. The benefit was similar 1 year after stroke.[4]

Prior studies demonstrate that time to treatment with IV tPA is an important determinant of clinical outcomes in acute ischemic stroke. Pooled data from 6 randomized placebo-controlled trials of IV rt-PA were analyzed.[5] Treatment was started within 360 minutes of onset of stroke in 2775 patients randomly allocated to tPA or placebo. The odds of a favorable 3-month outcome increased as onset to treatment decreased (p=0.005). Odds were 2.8 (95% CI 1.8-4.5) for 0-90 min, 1.6 (1.1-2.2) for 91-180 min, 1.4 (1.1-1.9) for 181-270 min, and 1.2 (0.9-1.5) for 271-360 min in favor of the tPA group. This study demonstrates that the sooner that IV tPA is given to stroke patients, the greater the benefit, especially if started within 90 minutes of symptom onset.

Data from GWTG-Stroke demonstrated that shorter door-to-needle times were associated with better clinical outcomes.[6] A cross sectional analysis of 25,504 ischemic stroke patients treated with tPA found lower in-hospital mortality (odds ratio 0.78, 95% CI 0.69-0.90) and less frequent symptomatic intracranial hemorrhage for patients with door-to-needle times ≤60 minutes compared to patients with door-to-needle times >60 minutes.[6] Findings from Target: Stroke Phase I suggest that significant declines in door-to-needle times along with acceleration in the percentage of patients meeting the guideline recommended door-to-needle times within 60 minutes were associated with substantial improvement in short-term clinical outcomes.

TARGET: STROKE PHASE II BEST PRACTICE STRATEGIES

Target: Stroke advocates the adoption of the following 11 best practice strategies for reducing door-to-needle times for IV tPA in acute ischemic stroke. Recent studies show that hospitals who adopt the best practice strategies could save 1.3 minutes on average for each strategy implemented. This represents a potential to reduce door to needle time by 14 minutes or more if all strategies were used.[7]

Target: Stroke 11 best practice strategies:

1. **EMS Pre-Notification**: Emergency Medical Service (EMS) providers should provide early pre-notification to the receiving hospital when stroke is recognized in the field. EMS pre-notification of hospitals can significantly shorten time to brain imaging, reduce door-to-needle times with IV tPA, and enhancing the number of eligible patients treated.
2. **Stroke Tools**: A Stroke Toolkit containing rapid triage protocol, clinical decision support, stroke-specific order sets, guidelines, hospital specific algorithms, critical pathways, NIH Stroke Scale, and other stroke tools should be available and utilized for each patient.
3. **Rapid Triage Protocol and Stroke Team Notification**: Acute triage protocols facilitate the timely recognition of stroke and reduce time to treatment. Acute stroke teams enhance stroke care and should be activated as soon as there is hospital pre-notification from EMS personnel of a stroke patient or the stroke patient is identified in the emergency department. Rapid neurologic evaluation

should be performed as soon as possible in ED or on the CT/MRI table.

4. **Single Call Activation System**: A single call should activate the entire stroke team. A single-call activation system for the stroke team is defined here as a system in which the emergency department calls a central page operator, who then simultaneously pages the entire stroke team, including notification to ensure rapid availability of the scanner for stroke protocol brain imaging.
5. **Transfer Directly to CT/MRI Scanner**: Guided by pre-specified protocols, eligible stroke patients can, if appropriate, be transported from the ED triage area directly to the CT/MRI scanner for initial neurologic examination and brain imaging to determine tPA eligibility, bypassing the ED bed. The stroke patient, treating physician and nurse, and tPA go to the CT/MRI scanner with the patient or meet the patient there, the neurologic exam is performed on the CT/MRI table, and once the CT/MRI is read by the treating physician as non-hemorrhagic, the initial bolus tPA is delivered while the patient is still on the CT/MRI table. Appropriate written protocols with explicit inclusion/exclusion criteria should be in place to ensure that patients requiring emergency medical assessment or stabilization are not directly triaged to CT/MRI. Alternatively, rapid assessment by the ED physician while the patient remains on the EMS transport gurney can be preformed to ensure hemodynamic/respiratory stability and to evaluate for other emergency diagnoses followed by transport to the CT/MRI scanner.
6. **Rapid Acquisition and Interpretation of Brain Imaging**: It is essential to initiate a brain CT scan (or MRI) as soon a possible after patient arrival. Consider initial CT interpretation by stroke neurologist and reserving advanced imaging for unclear cases only. At the minimum, the CT scan should be performed within 25 minutes of arrival and complete interpretation of the CT scan within 45 minutes of arrival to exclude intracranial hemorrhage prior to administration of intravenous tPA.
7. **Rapid Laboratory Testing (Including point of Care Testing if indicated)**: When indicated, laboratories such as glucose and for patients in whom coagulation parameters should be assessed because of suspicion of coagulopathy or warfarin treatment, INR (PT)/PTT results should be available as quickly as possible and no later than 30 minutes after ED arrival. If standard STAT laboratory turnaround times cannot meet this target, point-of-care testing in the ED can provide the data in the needed timeframe. Glucose testing by EMS in field or prior to arrival should be performed.
8. **Mix tPA Ahead of Time**: A useful strategy is to mix drug and set up the bolus dose and one-hour infusion pump as soon as a patient is recognized as a possible tPA candidate, even before brain imaging. Early preparation allows tPA infusion to begin as soon as the medical decision to treat is made. It is the policy of the drug manufacturer to replace, free of charge, medication that are mixed but not used in time-critical emergency situations like this. Check with your hospital pharmacy for the proper procedures that will allow you to use this strategy to shorten time to treatment without financial risk.
9. **Rapid Access and Administration of Intravenous tPA**: Once eligibility has been determined and intracranial hemorrhage has been excluded, intravenous tPA should be promptly administered without delay. The tPA should be readily available in the emergency department or CT scanner (if CT scanner is not located in the ED) and can be retrieved and dispensed directly by the ED and stroke neurology team. The initial tPA bolus should be administered while the patient is on the CT table. Dosing charts and standardized order sets can also facilitate timely administration and minimize dosing errors.
10. **Team-Based Approach**: The team approach based on standardized stroke pathways and protocols has proven to be effective in enhancing the number of eligible patients treated and reducing time to treatment in stroke. An interdisciplinary collaborative team is also essential for successful stroke performance improvement efforts. The team should frequently meet to review your hospital's processes, care quality, patient safety parameters, and clinical outcomes, as well as make recom-

mendations for improvement.

11. **Prompt Data Feedback**: Accurately measuring and tracking your hospital's door-to-needle times, IV tPA treatment rates in eligible patients, other time intervals, and performance on other stroke performance/quality measures equip the stroke team to identify areas for improvement and take appropriate action. A data monitoring and feedback system includes the use of the Get With The Guidelines-Stroke Patient Management Tool (PMT) and creating a process for providing timely feedback and recommendations for improvement on a case-by-case basis and in hospital aggregate. This system helps identify specific delays, devise strategies to overcome them, set targets, and monitor progress on a case-by-case basis.

The hospital administration should provide the resources and financial support to implement and maintain these strategies. Hospitals without local stroke expertise available 24x7 should explore building relationships with stroke centers to facilitate more timely evaluation, decision-making and treatment. Many hospitals have found telehealth solutions for image interpretation or clinical evaluation critical to building successful acute stroke teams.

KEY TIME INTERVALS

Given the narrow therapeutic windows for treatment of acute ischemic stroke, timely evaluation and diagnosis of ischemic stroke are paramount.

The time interval goals are:

Action	Time
Door to physician	≤10 minutes
Door to stroke team	≤15 minutes
Door to CT/MRI initiation	≤25 minutes
Door to CT/MRI interpretation	≤45 minutes
Door to needle time	≤60 minutes

For those hospitals targeting the 45 minute goal, targeting door to CT/MRI initiation of 20 minutes, door to CT/MRI interpretation of 35 minutes, and door to needle times within 45 minutes may be considered.

STEPS TO FACILITATE CHANGE

1. Organize stroke team with focused goal to improve portion of eligible ischemic stroke patients receiving IV tPA in a timely fashion (DTN ≤ 60 minutes)
2. Implement Target: Stroke Best Practice Strategies
3. Utilize Get With The Guidelines-Stroke clinical decision support tools and evidence based strategies for IV tPA
4. Participate in the Target: Stroke community of hospitals
5. Track progress to goal using Get With The Guidelines-Stroke PMT quality measures
6. Provide timely feedback on performance to entire stroke team and EMS

TARGET: STROKE RESOURCES

- Target: Stroke Best Practice Strategies
- Customizable implementation tools, strategies and systems
- Guideline based algorithms, order sets, dosing charts
- Educational programs via webinar series
- Get With The Guidelines-Stroke community of hospitals
- Get With The Guidelines-Stroke/Target: Stroke clinical tools library

EXPECTATIONS FOR TARGET: STROKE HOSPITALS

The expectations for hospital participating in Target: Stroke include the following:

- Complete Target: Stroke Survey 2.0
- Active participation to achieve the Target: Stroke goal
- Assemble dedicated Target: Stroke Improvement Team
- Implement Target: Stroke Improvement Best Practices
- Utilize Target: Stroke tools
- Track progress to achieving the Target: Stroke Goal using the Get With The Guidelines-Stroke PMT reporting functions
- Share insights, experiences and success

BENEFITS TO TARGET: STROKE PARTICIPANTS

There are a number of potential benefits for participating in Target: Stroke:

- Access to world-class experts and a curriculum on timely and effective acute stroke care
- Access to best practice strategies and successful efforts to improve acute stroke care and meet goals
- Customizable strategies and tools
- Recognition for your hospital's stroke care

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