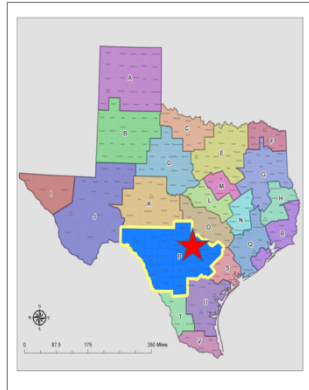


Closing the Gap - Development of a Regional Stroke System

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Background

In 2009, the 7th largest populated city in the United States, had no certified Primary Stroke Centers, or organized approach to care for stroke patients.



Purpose

To describe how in one year, a large geographic region progressed from no system of stroke care to an organized system of 10 Certified Primary Stroke Centers and numerous EMS agencies.

References:

Adams, H., Zoppo, G., Alberts, M., Bhatt, D., Brass, L., Furlan, A., Grubb, R., Higashida, R., Jauch, E., Kidwell, C., Lyden, P., Morgenstern, L., Qureshi, R., Rosenwasser, H., Scott, P., & Wijlicks, E. (2007). Guidelines for the early management of adults with ischemic stroke. *Stroke*, 38, 1655-1711.

Schwamm, L.H., Pancoli, A., Acker, J. E. III, Goldstein, L.B., Zorowitz, R.D., Shepard, T.J., Moyer, P., Gorman, M., Johnston, S.C., Duncan, P.W., Gorelick, P., Frank, J., Stranne, S.K., Smith, R., Federspiel, W., Horton, K.B., Magnis, E. & Adams, R.J. (2005). Recommendations for the establishment of stroke systems of care: recommendations from the American Stroke Association's task force on the development of stroke systems. *Stroke*, 36, 690-703. doi: 10.1161/01.STR.000158165.42884.4F

Methods

Hospital leaders were compelled to create stroke programs in their facilities in response to intense community pressure following a patient who had a poor outcome secondary to no access to a stroke center in San Antonio.

The Southwest Texas Regional Advisory Council (STRAC) Stroke Committee, comprised of hospital, physician and EMS leaders, developed a Stroke Letter of Attestation signed by participating hospitals and EMS agencies. This letter defined an interim process for performance and pre-hospital stroke alert criteria while hospitals developed programs and became certified as stroke centers. The agreement established a commitment to maintain rapid response teams, a central one-call transfer process, and process improvement. Transfer tracking sheets were developed to monitor hospital responses to transfer requests and patient acceptance.

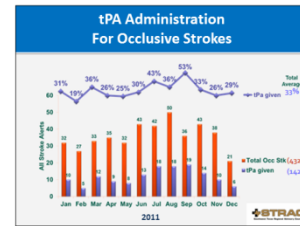
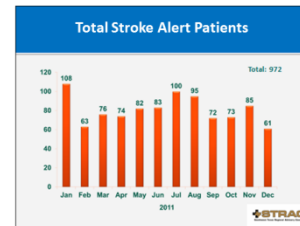
Despite a competitive environment, Stroke Coordinators met monthly to discuss data and develop regional reports for review in the Stroke Committee. In addition, stroke algorithms were distributed to rural facilities to assist with care prior to transfer to a stroke center.

Stroke Alert Criteria

- One or more findings on Cincinnati stroke scale:
 - A. Facial Droop – Abnormal
 - B. Arm Drift – Abnormal
 - C. Speech – Abnormal
 --And--
- Less than 8 hours from onset of symptoms
 --And--
- Blood sugar between 60mg and 600mg

Stroke Algorithm

- RECOGNITION**
 - Stroke Warning Signs:** Sudden onset of any of the following:
 - Numbness/weakness on one side of the face or body
 - Difficulty speaking or understanding speech
 - Blurred vision
 - Loss of balance/coordination
 - Spontaneous or unexplained headache
 - ACT FAST:**
 - ✓ A: Face Droop
 - ✓ F: Arm Drift
 - ✓ S: Speech
 - ✓ T: Time
- EVALUATION**
 - Target Times:**
 - Door to MD < 15 min
 - Door to CT scan < 25 min
 - Door to CT read < 45 min
 - Door to Lab results < 45 min
 - Door to TX < 60 min.
- MANAGEMENT**
 - CT scan normal, NO evidence of hemorrhage
 - CT scan normal, no evidence of hemorrhage if patient is on the following patient may be a candidate for tPA:
 - Yes: No Age 18 or older and functional/independent before this acute on chronic presentation
 - Yes: No Clinical judgment of the stroke causing a pre-stroke neurological deficit in the stroke scale (must be included to central stroke) if the CT scan indicates hemorrhage or recent infarct
 - Yes: No 180 to 210 minutes (3 hours) from the onset of stroke symptoms
 - Contact Certified Stroke Center for Transfer: **Methodist Health System**
 Toll Free - 1-877-238-1718
 Local - 210-797-3471
 - Contact Certified Stroke Center for Neurology/Neuroemergency Consult: **University Hospital, Transfer Center**
 Toll Free - 1-877-575-2388
 Local - 210-375-ADMI
 University Hospital, Transfer Center
 210-558-2500
 - CT abnormal, evidence of hemorrhage



Stroke Data Collection Sheet

THIS IS NOT A TRANSFER REQUEST FORM

Please submit ALL stroke transfers from your hospital ED to the Stroke-PT Extension.

Transfer Date: _____ Time of Transfer: _____
 Transfer Facility: _____ Phone: _____

Transfer to: _____
 Transfer Reason: _____
 Transfer to Stroke Center: _____ (If not applicable)
 Transfer to Other Facility: _____ (If not applicable)

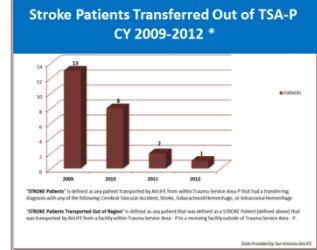
Please check all that apply to the stroke patient: **210-233-5821**

A new case of acute MI/Infarction
 A new case of angina/PT/MI
 A new case of stroke/PT/MI
 A new case of stroke/PT/MI
 A new case of stroke/PT/MI
 A new case of stroke/PT/MI

Comments/Signatures by Stroke Regional Stroke Committee

Results

By coordinating a system of care with first responders, no longer diverting patients out of the service area, and data sharing, a large region progressed from having no stroke system to an organized system of 10 Certified Primary Stroke Centers, which provide the region access to quality care. The STRAC Stroke/Performance Improvement Committee and Coordinator Committee continue monthly meetings.



Conclusions

This process successfully closed the gap in stroke care. The STRAC Stroke Committee continues to improve data collection, provide feedback to EMS, set goals for public education, and engage hospitals and EMS agencies in the commitment to quality stroke care.