Effect of Primary Stroke Center Certification of an Acute Care Facility on Efficiency and Utilization in the Emergency Department.

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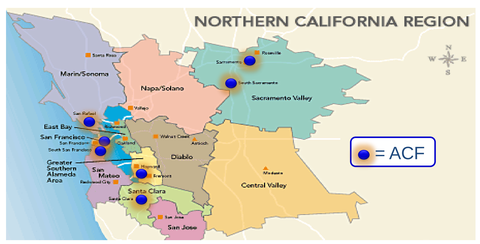
Background

The primary stroke center (PSC) model has the potential to improve care of stroke patients, however, there is little evidence to date that the establishment of these stroke centers results in measurably improved care processes or outcomes.

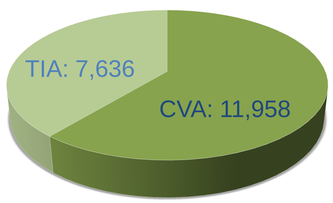
Objectives

To compare Emergency Department (ED) care of patients diagnosed with cerebro-vascular accident (CVA) or transient ischemic attack (TIA) before and after 7 acute care facilities within an integrated delivery system were certified as Primary Stroke Centers.

Acute Care Facilities (ACF)

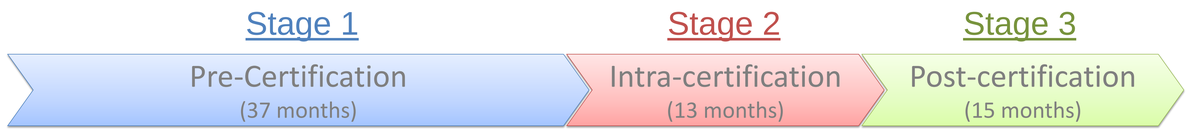


Study Population



Methods

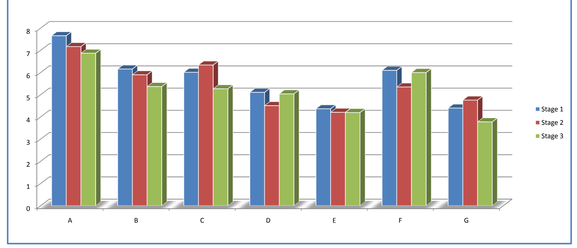
We examined all patient records with ED diagnosis of CVA or TIA at 7 ACFs from January, 2003 through June, 2008. We compared the following data from individual facilities over three discrete time periods (pre-certification, intra-certification, and post-certification): admission rates and time to admission from the ED within 24 hours and imaging rates and time to imaging within 24 hours.



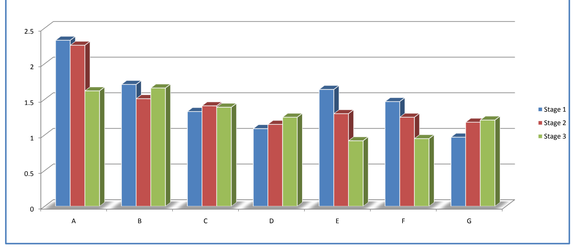
% Hospitalized s/p TIA (in 24 hrs)

% Cranial duplex s/p TIA (in 48 hrs)

Time to hospitalization s/p CVA (hrs)



Time to CT head s/p CVA (hrs)



Results

Our study cohort included 19,594 ED patients (11,958 with CVA and 7,636 with TIA). All ACFs studied, achieved PSC status between 2004 and 2008. Hospitalization rates increased significantly ($p<0.05$) across the stroke certification process (CVA: 7/7 ACFs, TIA: 4/7 ACFs) and mean time to hospitalization decreased significantly at some centers (CVA: 5/7 ACFs and TIA 2/7 ACFs). Rates of imaging increased and time to imaging decreased significantly for both CVA and TIA at four out of seven ACFs.

Conclusions

We found significant increases in rates and timeliness of imaging and hospitalization among stroke patients at many ACFs undergoing stroke center certification.

Future Study

Further study is needed to adjust for clinical and health plan covariates and changes in care patterns over time and also to determine whether utilization and disposition changes correlate with improved patient outcomes.

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