

Establishing a Comprehensive Stroke System of Care increases the acute ischemic stroke volume and intravenous recombinant tissue plasminogen activator (IV r-tPA) usage.

HCA North Texas



TEXAS STROKE INSTITUTE

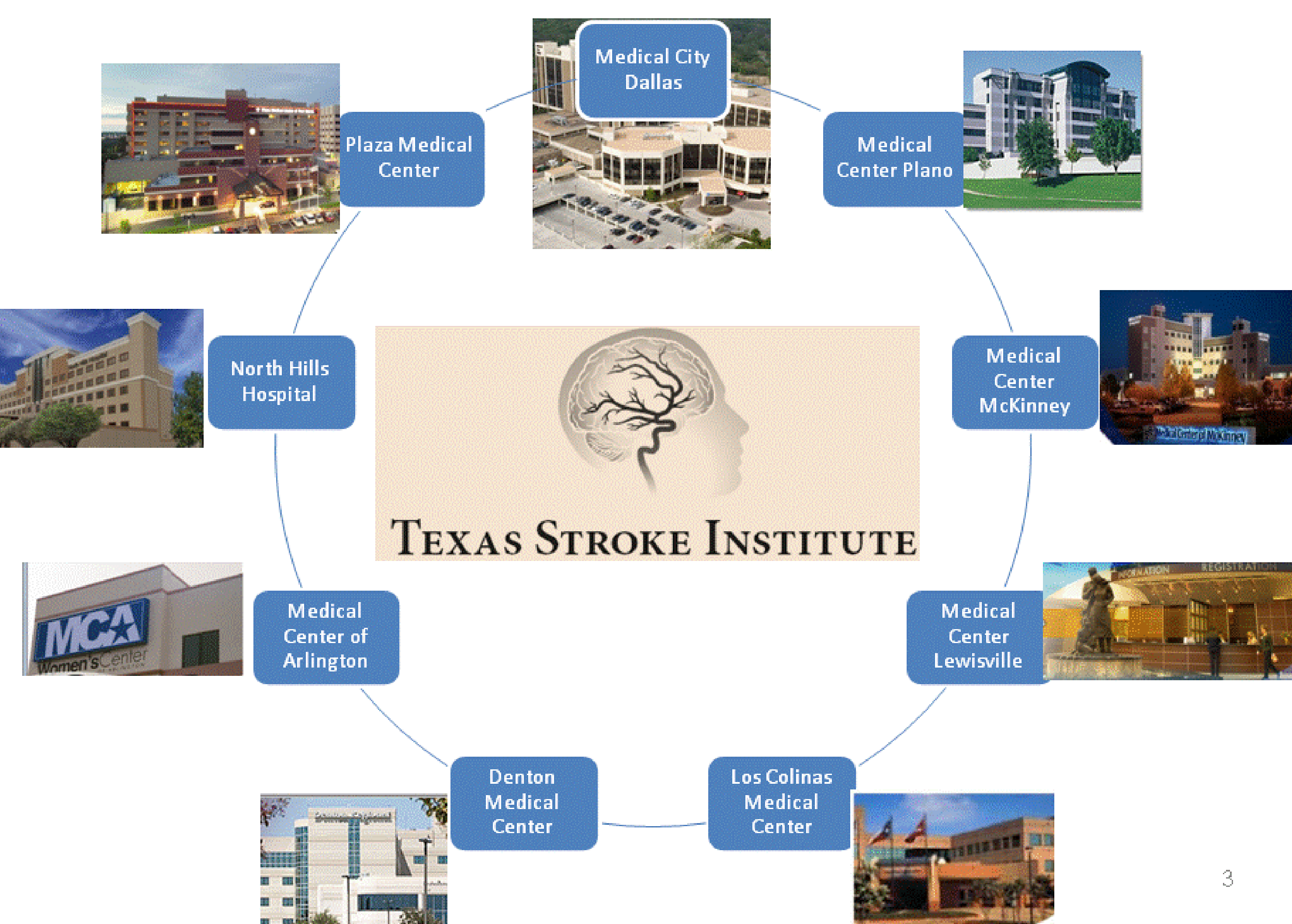
Ryan Gianatasio, MD; Debbie Roper, RN MSN; Alexander Venizelos, MD; Abhi Pandhi, MBBS
 Scott Robbins, MD; Anita Guthmann, RN BS; Jeff Coulson, RN; Mark Whitley, MHA; Vallabh
 Janardhan, MD

Texas Stroke Institute, HCA North Texas Division, Dallas-Fort Worth Metroplex, Texas

INTRODUCTION

Comprehensive Stroke Systems of Care are needed across the country to better care for acute stroke patients. However, there is limited information on the growth of acute ischemic stroke volumes within hospitals in a regional stroke network and the associated IV r-tPA rate.

HCA North Texas Division

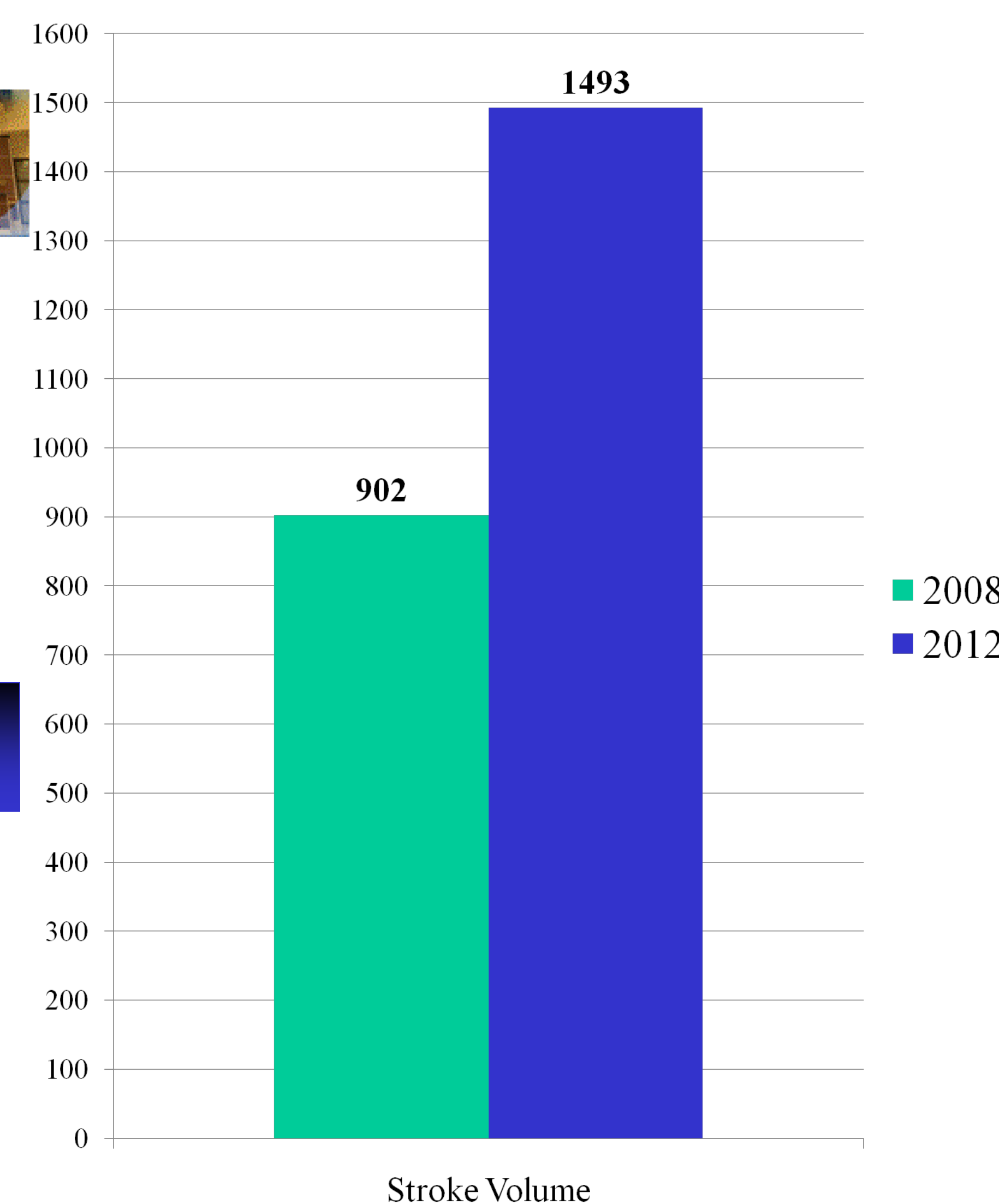


METHODS

A Comprehensive Stroke System of Care was developed in 2010 and included 5 hospitals that were certified primary stroke centers. Acute ischemic stroke volume was identified based on inpatient hospital discharges (ICD-9 codes) from 2008 to 2012. IV r-tPA usage was identified based on procedure codes for intravenous thrombolytic administration and data collected by hospital stroke coordinators.

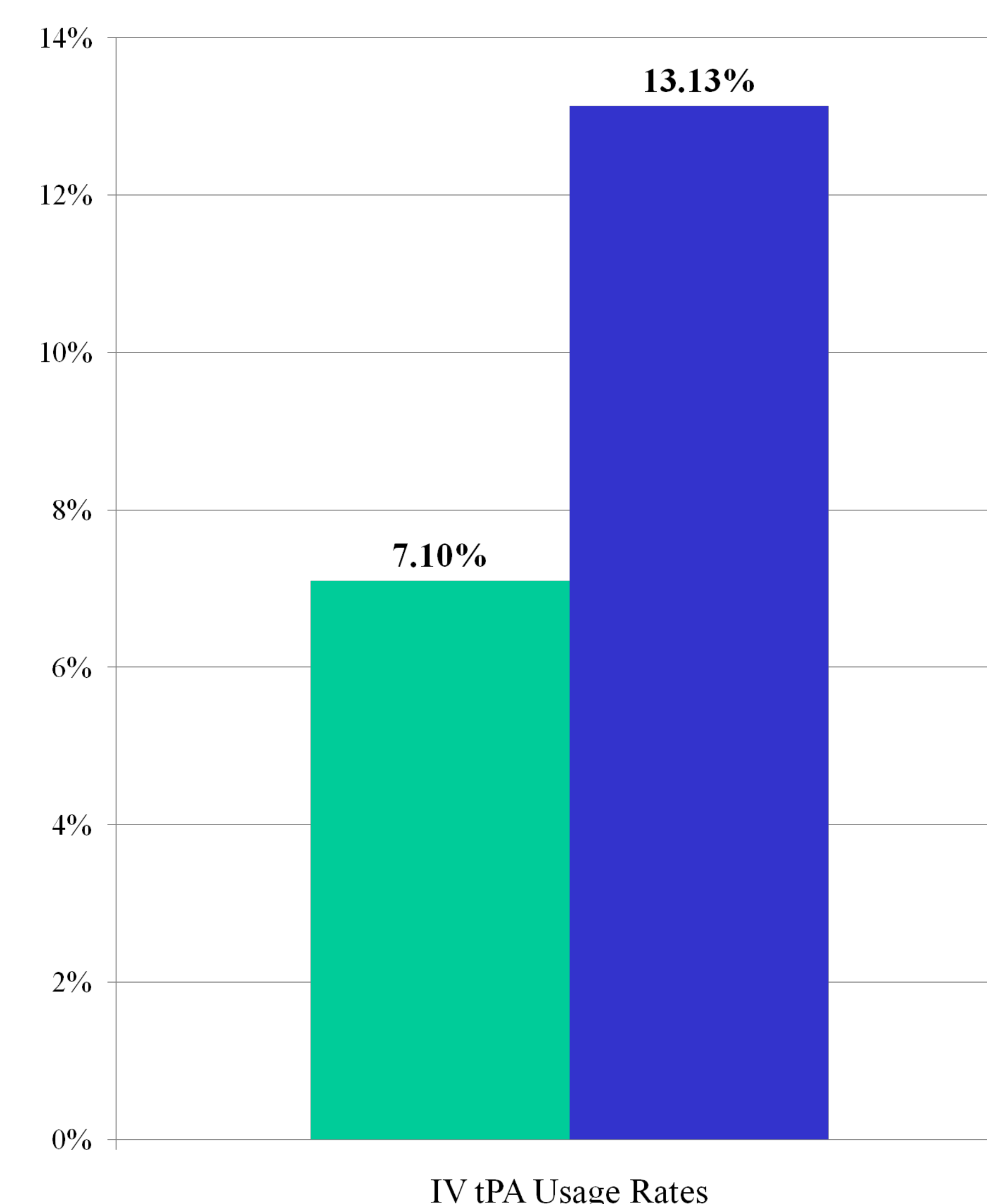
RESULTS

A total of 6,311 patients were hospitalized with acute ischemic stroke over a 5-year period in one of the five stroke centers which make up the HCA North Texas division in 2008. Acute ischemic stroke volumes grew from 902 in 2008 to 1493 in 2012 with a growth rate of 65.5%. The IV r-tPA usage rates increased from 7.10% in 2008 to 13.13% in 2012, an increase of 6.03%.



Included Populations: ICD-9-CM Principal Diagnosis code for ischemic stroke

ICD-9 Code	Diagnosis
433.01	OCL BSLR ART W INFRCT
433.1	CAROTID ARTERY OCCLUSION
433.11	OCL CRTD ART W INFRCT
433.21	OCL VRTB ART W INFRCT
433.81	OCL SPCF ART W INFRCT
433.91	OCL ART NOS W INFRCT
434	CEREBRAL THROMBOSIS
434.01	CRBL THRMBS W INFRCT
434.1	CEREBRAL EMBOLISM
434.91	CRBL ART OCL NOS W INFRCT
436	CVA



DISCUSSION

- tPA is significantly underutilized
- Specific efforts are needed to encourage appropriate implementation of the stroke treatment guidelines to optimize the use of this important therapy
- By creating a Comprehensive Stroke Network (tele-stroke network, system-wide treatment algorithms and catheter based therapies) we have seen increased volumes throughout the network and increased treatment with IV tPA for acute ischemic stroke

Conclusion

Comprehensive Stroke System of Care positively impacts stroke volumes in all the hospitals within the regional stroke network and is associated with increased IV r-tPA use for acute ischemic stroke.

References

Texas Stroke Institute Stroke Dashboard and Registry(2008-2012)

Meretoja A, Roine RO, Kaste M, Linna M, Roine S, Juntunen M, Eirilä T, Hillbom M, Marttila R, Rissan A, Sivenius J, Häkkinen U. Effectiveness of primary and comprehensive stroke centers: PERFECT stroke: a nationwide observational study from Finland . Stroke. 2010;41:1102–1107.

Alberts MJ, Latchaw RE, Selman WR, Shephard T, Hadley MN, Brass LM, Koroshetz W, Marler JR, Booss J, Zorowitz RD, Croft JB, Magnis E, Mulligan D, Jagoda A, O'Connor R, Cawley CM, Connors JJ, Rose-DeRenzy JA, Emr M, Warren M, Walker MD; Brain Attack Coalition. Recommendations for comprehensive stroke centers: a consensus statement from the Brain Attack Coalition. Stroke.2005;36:1597–1616.

Cramer SC, Stradling D, Brown DM, CarrilloNunez IM, Ciabarra A, Cummings M, Dauben R, Lombardi DL, Patel N, Traynor EN, Waldman S, Miller K, Stratton SJ. Organization of a United States county system for comprehensive acute stroke care. Stroke. 2012;43:1089–1093