

A Closer Look at Stroke Epidemiology in the State of Maine Using Hospital Discharge Data 2010-2014

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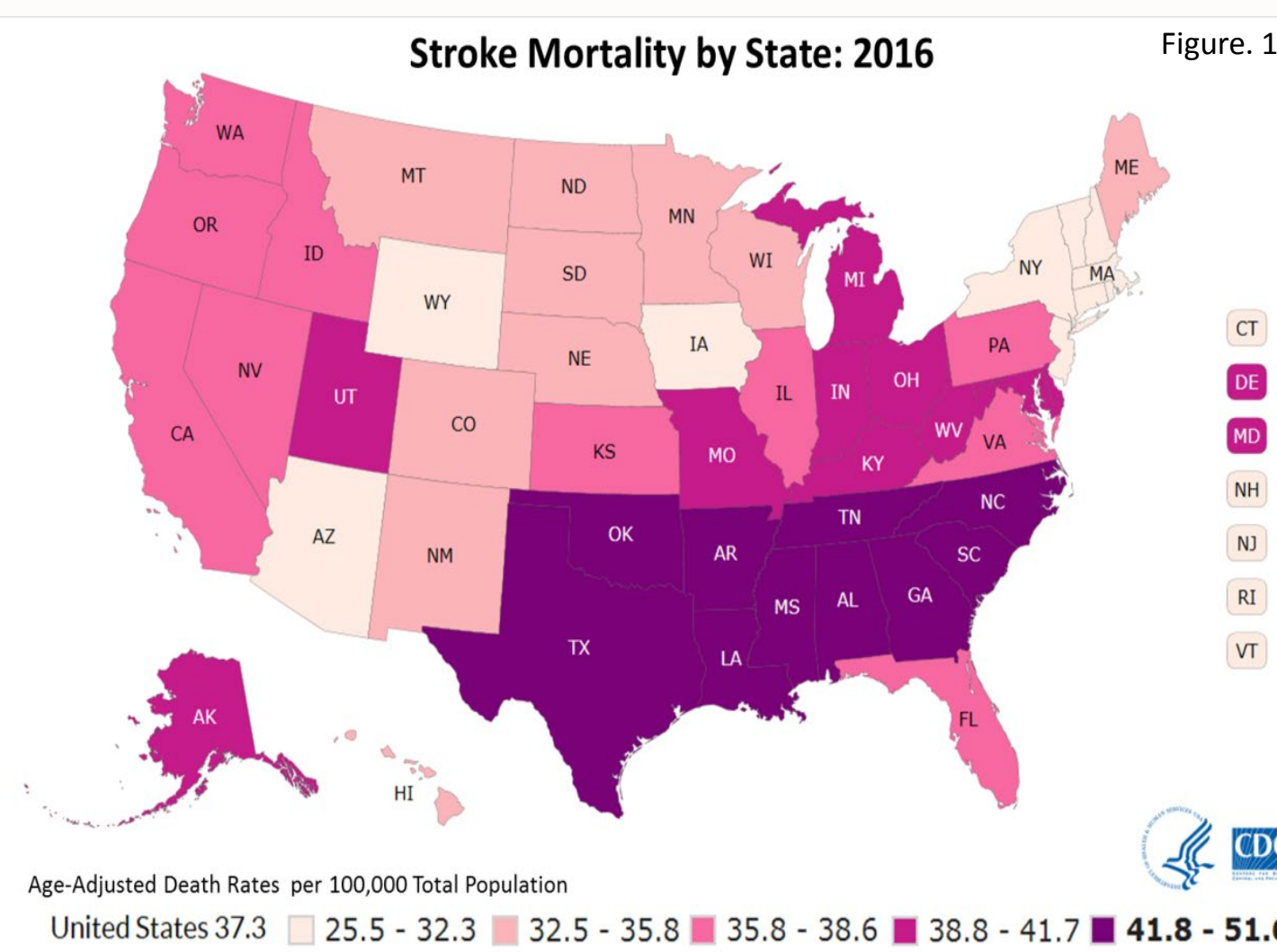
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BACKGROUND

Maine's stroke prevalence/ mortality is highest of New England states.^{1,2} Maine is known as the New England's "stroke cap". US Mortality rates are in decline overall, yet Maine has a lower trend decline in stroke mortality.³ Clusters of high stroke mortality could be due to local determinants.^{4,6} We hypothesized that the epidemiology of stroke in Maine has unique characteristics to explain the disparity, including geography, aging and non-traditional factors such as polysubstance abuse or cancer.⁷⁻¹¹



OBJECTIVE

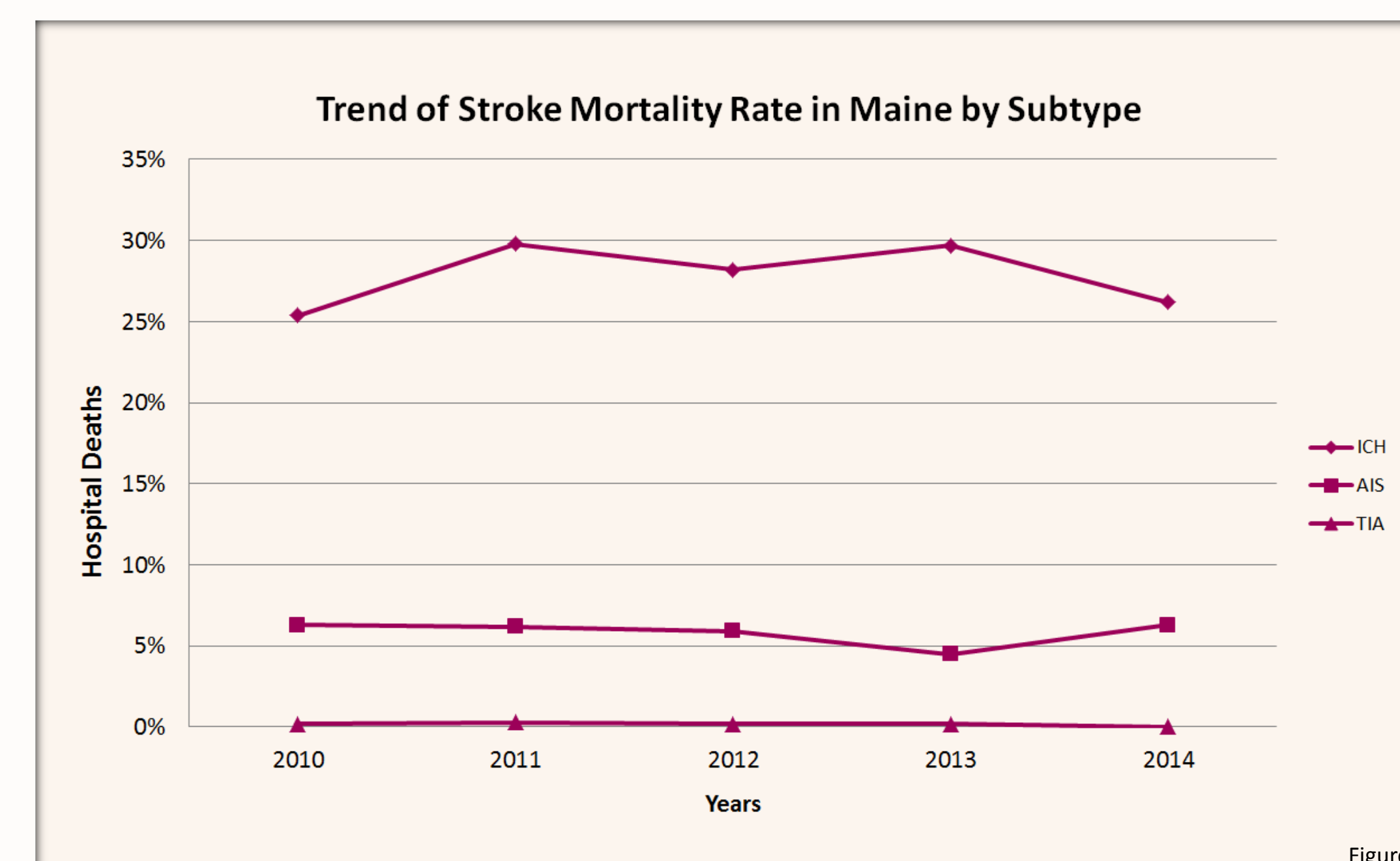
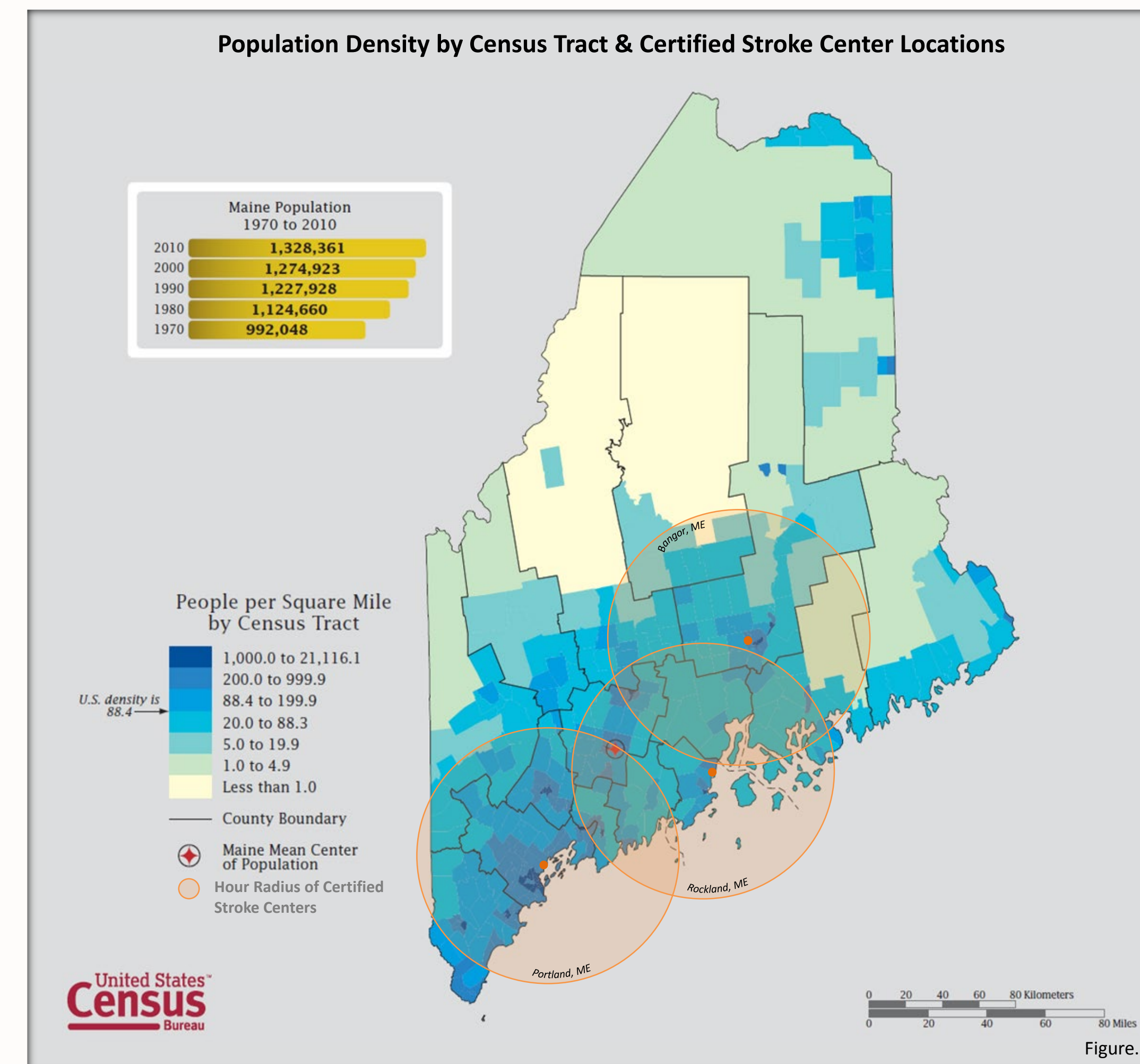
This study aims to identify stroke risk factors in Maine, and local determinants for in hospital mortality.

METHODOLOGY

As a descriptive study using all Maine inpatient stroke related discharge data: demographics, diagnosis, procedure codes and disposition from Maine Health Data Organization (MHDO), stroke was classified as ischemic, hemorrhagic, and Transient Cerebral Ischemia. Traditional risk factors for stroke in the Framingham study were: age, sex, hypertension, diabetes mellitus, tobacco use, atrial fibrillation, left ventricular hypertrophy and dyslipidemia.^{12,13} Clinical factors included nontraditional risk factors: sleep apnea, neoplasm, mental disorders and polysubstance and alcohol abuse.^{9,14} Zip codes were used to determine driving distance of one hour or more from one of the three certified stroke centers in Maine.

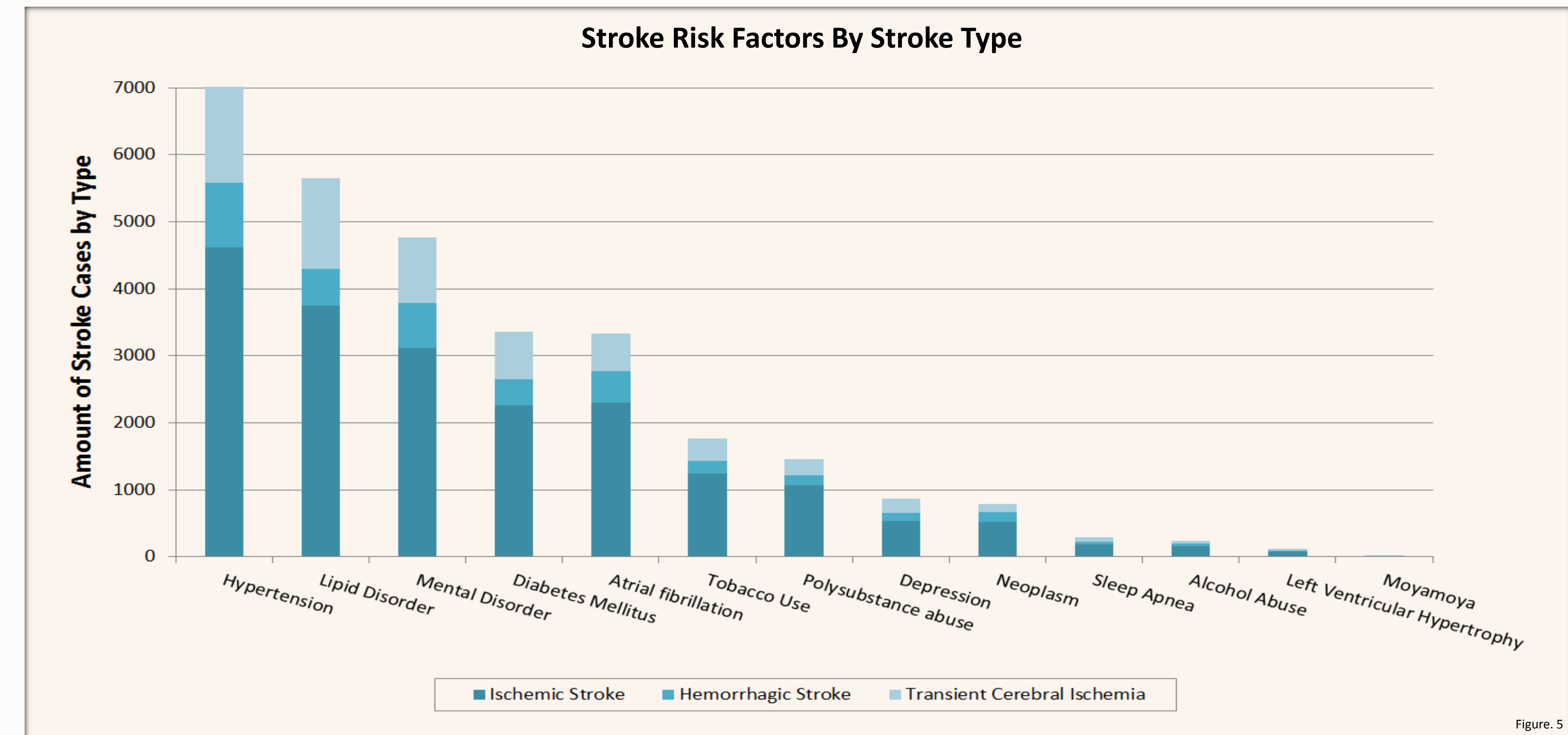
STATISTICAL ANALYSIS

Cases with complete data were included. Excluded were diagnostic codes for pregnancy, childbirth, puerperium, preeclampsia, eclampsia or traumatic brain injury; cases of ICD-9-CM codes for epidural and subdural hematoma; and ill-defined cerebrovascular disease or late effects of cerebrovascular disease. Descriptive statistics identified stroke characteristic. Multiple linear regression analyses identified associations between in hospital mortality due to stroke and age, gender, clinical factors, and driving distances to identify the independent predictors. Analyses were done using SPSS software version 21.

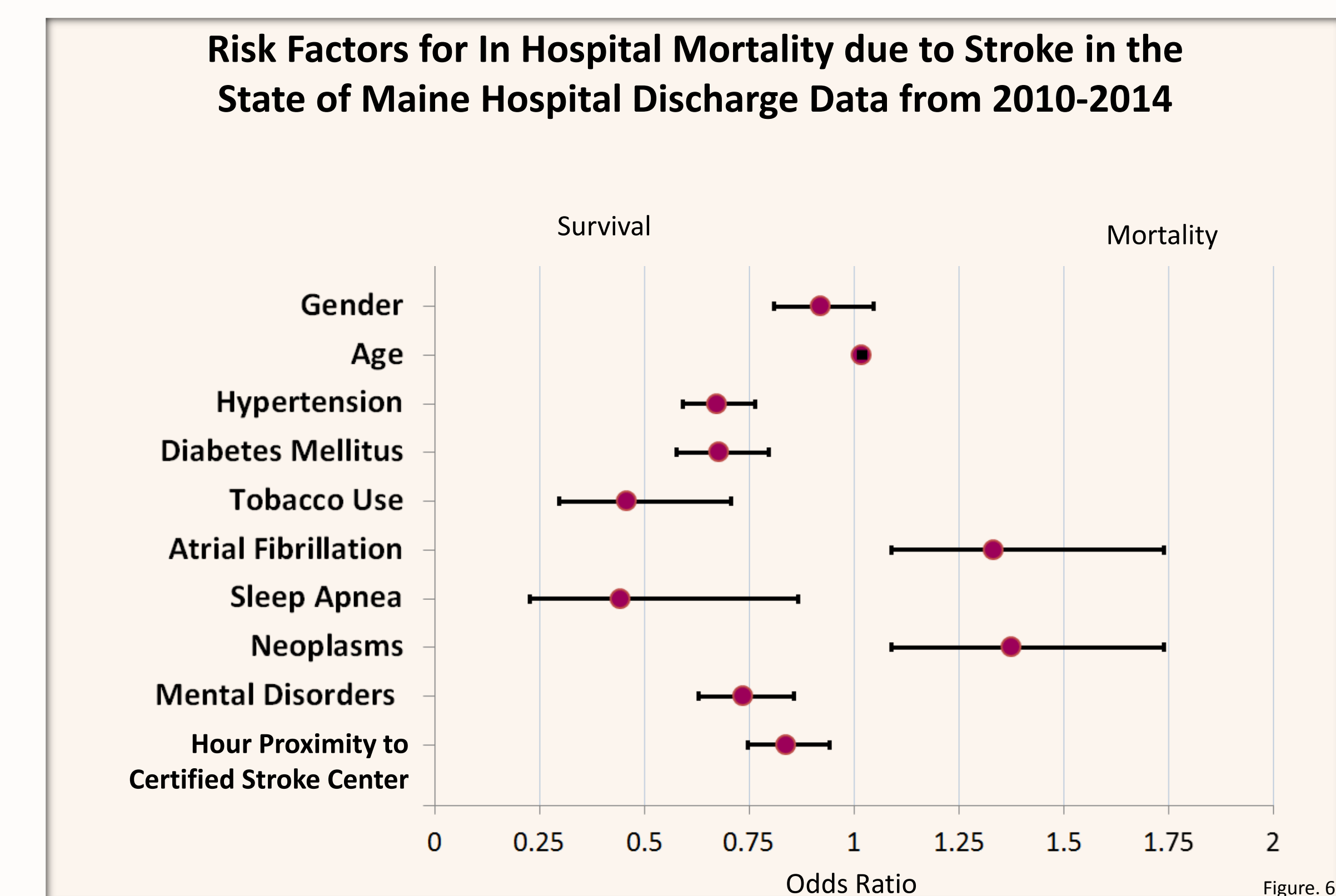


	Ischemic Stroke in Maine 2010-2014	Ischemic Stroke Nationally 2010
N	9174	274988
Age (Mean, SD)	73.19 (13.97)	71.6 (14.3)
Gender (%F)	51.3	53.4
In Hospital Mortality n (%)	536 (5.8%)	15143 (5.5%)
RISK FACTORS:		
Tobacco Use	13.6%	17.11%
Diabetes Mellitus	24%	29.92%
Atrial Fibrillation	25.1%	18.15%
Lipid Disorder	40.9%	35.2%
Hypertension	50.3%	73.99%

RESULTS



- From 2010-2014, 13,857 hospital stroke diagnoses represented 2% of all Maine discharges.
- Overall, ischemic strokes accounted for 66% of all stroke discharges followed by TIA (19%) and hemorrhagic (15%).
- There were no statistically significant changes in mortality rate during the five year period.



CONCLUSION

- The risk factors for Stroke in Maine, include non-traditional factors, such as, mental disorders, polysubstance abuse and neoplasms.
- Risk factors for in-hospital mortality due to Stroke include:
 - Limited access to a certified stroke center
 - Age
 - Atrial fibrillation
 - Neoplasm
- While the national stroke mortality rate has declined, the Stroke Mortality Rate in Maine is unchanged.
- Additional studies will be needed to explore these new findings.

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