Stroke, the fourth leading cause of death in Tennessee, has remained consistently more prevalent in our state than the US average, despite its decline over the past decade. The Tennessee Stroke Registry (TSR) is a partnership between the TN Department of Health (TDHD), the American Heart/Stroke Association (AHA), and East Tennessee State University’s College of Public Health that was initiated to help address stroke outcomes in our state. Each year the registry produces a report on stroke systems of care as well as outcomes within TN. Data for this report is generated through volunteer reporting from hospitals participating in AHA’s Get With The Guidelines (GWTG) surveillance package. The information presented here were obtained from hospital reporting stroke outcomes to the TSR for 2013. Descriptive analyses were conducted to determine stroke diagnosis, insurance status, transportation type and duration to primary stroke centers (PSC). Geographic Information Systems (GIS) was used to determine the proportion of Tennessee’s who live more than 50 miles from a PSC. In 2013, 5,308 stroke cases were reported to the TSR. In this sample, ischemic strokes accounted for roughly 60% of cases, with the majority of patients receiving Medicare or Medicaid (50%). Only 40% of patients arrived to a PSC as emergency medical services (EMS), which is the fastest mode of transport on average for stroke patients. Roughly 30% of Tennessee lives in counties with a primary stroke center at least 30 miles outside any PSC. While these data represent only the stroke cases in care and mortality reported to the TSR from participating hospitals, analysis of this data indicates a potential effect of distance to PSC on the arrival times of individuals experiencing a stroke.

www.strokeassociation.org/STROKEORG/WarningSigns/WarningSigns.html

Get With the Guidelines®-Stroke is an in-hospital program for improving stroke care by promoting consistent adherence to the latest scientific treatment guidelines. Since its initiation in 2003, 1,656 hospitals have entered more than two million patient records into the Get With The Guidelines-Stroke database. Numerous published studies demonstrate the program’s success in achieving measurable patient outcome improvements.3,4

The table to the right displays adherence rates for the hospitals reporting Get With The Guidelines performance measures to the Tennessee Stroke Registry in 2013. The results indicate 88% to 96% adherence to the 10 consensus measures, grouped by acute, quality, and discharge data.

Primary Stroke Centers
The Joint Commission certifies hospitals as Advanced Primary Stroke Centers and Advanced Comprehensive Stroke Centers. This designation indicates the ability of hospitals to diagnose and care for stroke patients through adequate staffing and equipment. Approximately 20% of TN residents live in counties that lie either partially or entirely outside a 50 mile radius from a certified stroke center.

Conclusions
Our summary of the registry data indicates a potential effect of distance to primary stroke center on the arrival times of individuals experiencing a stroke. We recommend a thorough analysis of the statewide data including hospital type. Prompt administration of tissue plasminogen activator (tPA) in ischemic stroke can directly blockage and restore blood flow. Catheterization can also be beneficial.

Non-Modifiable Risk Factors
• Age: Leading risk factor for stroke. Beginning with 55 years of age, the risk of stroke doubles every decade. This is true for both men and women.
• Sex: Stroke incidence is 1.25 times higher in men than in women. However, more women than men die of stroke, a fact attributed to the longer life expectancy of women.
• Race/Ethnicity: African Americans are over twice as likely to die from stroke than are Caucasians. That disparity increases to four times for the 45-54 year age range.
• Family History: Both genetics and common exposures increase the risk of stroke.

Modifyable Risk Factors
• High Blood Pressure: As blood pressure increases so does risk of stroke.
• High Blood Cholesterol: Risk of stroke can be reduced by as much as 30% by reducing blood cholesterol level by 20%.5
• Cigarette Smoking: Risk of stroke is 50% higher for smokers. Additionally, there exists a dose-response relationship between number of cigarettes smoked and risk of stroke.6
• Diabetes: Studies have shown an increased risk of ischemic stroke ranging from 3.8 to 5.0 times higher for individuals with Diabetes Mellitus.1
• Physical Inactivity: Studies suggest that walking briskly for 30 min. 5 times a week can significantly reduce stroke risk.30
• Overweight and Obesity: While obesity contributes to higher blood pressure and diabetes prevalence, it has also been shown to be independently associated with increased risk of stroke.3

What is Stroke?
• Failure of blood vessel blockage or hemorrhagic rupture causing interruption of blood supply to the brain
• The loss of oxygen to affected areas causes loss of function and may lead to death
• Ischemic stroke is the most common stroke type and results from a blocked vessel which prevents proper blood flow to the brain. The second most common type is hemorrhagic stroke which results from a blood vessel rupture and consequent bleeding in the brain.
• Transient Ischemic Stroke (TIA) or "mini-stroke" are temporarily decreased blood flow and typically pre-cursors to actual strokes.

Stroke Warning Signs
• Sudden numbness or weakness of the face and/or limbs, often only on one side of the body
• Sudden confusion or trouble speaking words or understanding what others are saying
• Sudden dimness in vision in one or both eyes
• Sudden headache with no obvious cause

Treatment
• Immediately when a patient arrives at a hospital it is crucial that stroke is properly diagnosed as ischemic or hemorrhagic type. Prompt administration of tissue plasminogen activator (tPA) in ischemic stroke can directly blockage and restore blood flow. Catheterization can also be beneficial.
• Hemorrhagic strokes often require surgery to repair damage done to ruptured vessels.
• Patients that receive treatment within 4.5 hours of symptom onset have a greatly reduced risk of permanent disability.