# One-third of Americans do not have access to stroke center within 1 hour

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One-third of the US population does not have access to a primary stroke center within one hour by ambulance, and even under optimal conditions, a large proportion of the US would be unable to access a stroke center within this window, according to a new study published in the March 4, 2015, online issue of *Neurology*, the medical journal of the American Academy of Neurology. Stroke is a leading cause of death and disability in the country.

"Research has shown that specialized stroke care has the potential to reduce death and disability," said study author Michael T. Mullen, MD, with the Perelman School of Medicine at the University of Pennsylvania in Philadelphia and a member of the American Academy of Neurology. "Stroke is a time-critical disease. Each second after a stroke begins, brain cells die, so it is critically important that specialized stroke care be rapidly accessible to the population."

Certification of hospitals as stroke centers includes primary stroke centers and comprehensive stroke centers, which is the highest level. Certification of comprehensive stroke centers began in 2012. The study examined data from 2010, when there were 811 primary stroke centers and no comprehensive stroke centers in the United States.

Mullen and his colleagues created models to estimate what proportion of the population would have access to a comprehensive stroke center within an hour under optimal circumstances.

The study found that converting up to 20 optimally located primary stroke centers per state into comprehensive stroke centers would result in 63 percent of the population living within a one-hour drive and an additional 23 percent within a one-hour flight of a center. There was however substantial variability in access, with some states lagging behind the national average.

"Even under optimal conditions, many people may not have rapid access to comprehensive stroke centers, and without oversight and population level planning, actual systems of care are likely to be substantially worse than these optimized models," said Mullen. He also noted that access to care in the models was lowest in the southeastern United States, an area often referred to as the "Stroke Belt."

"There are geographic differences in stroke incidence, especially in rural areas and in the Stroke Belt," Mullen said. "Reduced access to specialized stroke care in these areas has the potential to worsen these disparities. This emphasizes the need for oversight of developing systems of care."

Mullen said he is hopeful that optimization modeling studies, such as this one, could help policy makers and health planners identify areas of need, with the ultimate goal of ensuring that specialized stroke care is accessible throughout the US.

Provided by American Academy of Neurology