Time is Brain: Expanding Access to Stroke Care in Rural Georgia Communities

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Thesis
The Georgia Composite Medical Board should require continued stroke education as part of the Georgia emergency physician licensure process, thereby cross-training emergency physicians on the recognition, diagnosis, and treatment of stroke to improve patient survival and recovery outcomes in rural areas.

Background Analysis
Eighty percent of strokes are preventable, yet stroke remains the fifth most common cause of death in the United States.\(^1\) Georgia is in a geographical region known as the “stroke belt,” characterized by 1.3–1.5 times higher stroke mortality rates.\(^2\) Underlying poor health conditions and regional differences in quality and funding of healthcare continue to limit the availability of resources to provide a sufficient standard of stroke care for rural populations.\(^3\) The persistence of these disparities can be seen through four recent Georgia rural hospital closings, excessive spending on stroke and disability, and increased chance of death from stroke in rural areas.\(^4\)

Tissue-plasminogen activator (t-PA), an effective drug therapy treatment for acute ischemic stroke, can only be administered within the initial 3–4.5 hours following a stroke—a time known as the “golden window.”\(^5\) Treatment with t-PA is effective for correctly diagnosed acute ischemic stroke patients; however, administration of t-PA to non-stroke patients can have serious, life-threatening consequences.\(^6\) Due to the ambiguity of stroke symptoms and lack of neurological expertise, t-PA is 10 times less likely to be utilized in rural and underserved hospital settings compared to urban areas.\(^7\)\(^8\)

Presently, 128 of 155 Georgia counties lack any neurological services or personnel.\(^9\) The demand for neurologists in Georgia is already 20 percent over supply, and with a relative peak expected in the next 5 to 15 years, it is imperative that the absence of neurological expertise be addressed immediately for the well-being of rural Georgia communities.\(^10\)

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**KEY FACTS**

- Stroke is the leading cause of serious, long-term disability in the U.S.\(^22\)
- A stroke victim loses 1.9 million neurons for every minute of untreated care, creating increased risk of permanent brain damage or death without immediate treatment.\(^23\)
- Sixty-five percent of physicians reported feeling uncomfortable giving t-PA without a consultation.\(^24\)
- On average, a person in the United States has a stroke every four seconds and a person dies from a stroke every four minutes.\(^25\)
Talking Points

- Strokes require immediate care and treatment due its serious and time-sensitive nature.\(^{11}\)
- There is a lack of access to acute stroke care in rural Georgia, with respect to an absence of neurological expertise and appropriate infrastructure to accurately identify and treat stroke victims.
- Rural emergency physicians responsible for stroke patients lack the expertise in neurological diagnoses to deal with the unpredictability and ambiguity of stroke attacks.\(^{12}\)
- Effective treatment and diagnosis of stroke require high-level communication and collaboration from a complex web of key players, ranging from emergency medical dispatchers to medical service systems.\(^{13}\)

Policy Idea

To improve access to stroke care, a stroke education course should be implemented as part of the continued education hours for emergency physicians. The Georgia Composite Medical Board should require this course as part of the state’s physician licensure process. Stroke education increases physician familiarity with the correct recognition, diagnosis, and treatment of acute ischemic stroke and would improve patient care in rural areas without exacerbating the demand for neurological personnel.

Policy Analysis

Due to the lack of neurological personnel in rural Georgia, emergency physicians without neurological expertise are forced to determine whether potential stroke patients need t-PA therapy treatment within the golden window.\(^{14}\) By incorporating stroke education into the emergency physician licensure requirements, the disproportionate mortality rates and suffering of rural stroke patients should be improved.

The policy solution addressing this issue originates from a study on stroke diagnostic accuracy that implemented a stroke recognition and education protocol for ambulatory services at the Freeman Hospital in Newcastle, UK.\(^{15}\) With appropriate training, ambulance paramedics correctly identified a higher proportion of patients with stroke and facilitated more rapid referral to physicians.\(^{16}\) Furthermore, the introduction of a four-hour seminar on stroke education increased paramedics’ rate of stroke recognition from 61 percent to 91 percent.\(^{17}\) Thus, rural patients presenting with stroke symptoms may be recognized by emergency personnel more quickly and physicians may be able to formulate stroke diagnoses more accurately, meaning stroke patients at rural hospitals may have a better chance of treatment and recovery.

Emergency telemedicine management of stroke (“telestroke”) has become an increasingly popular diagnostic technique utilized for the treatment of stroke victims in distant or rural locations that lack neurological expertise. However, factors such as lack of funding for infrastructure and technology, logistical challenges of outsourcing neurologists, and the uniqueness of emergency care make this policy unfeasible for statewide implementation.\(^{18,19,20}\)
Next Steps

The Georgia Department of Public Health (GDPH) already offers Advanced Stroke Life Support training, a course utilized across the country to teach the emergency assessment and management of acute stroke, at no cost to hospitals participating in the Georgia Coverdell Acute Stroke Registry.21 Thus, the GDPH and the Georgia Composite Medical Board must collaborate to establish this course or a similar one as the standard for stroke emergency physician education across all of Georgia. Then, a bill should be introduced to the Georgia General Assembly mandating annual stroke continued education requirements as part of the licensure process for all Georgia emergency physicians. The American Heart Association and the Georgia Rural Health Association are key allies for lobbying and connecting to the GDPH, as they are dedicated to reducing stroke mortality rates and enhancing

End Notes


