

When you have a stroke may determine if you survive

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New research from the University of Georgia found that stroke patients admitted to rural hospitals over the weekend may be at higher risk of death.

The study examined the influence of the "weekend effect" on [stroke](#)

outcomes in U.S. hospitals.

"The weekend effect is the phenomenon where the risk of bad or adverse outcomes, such as mortality in our study, increases for those who are admitted to the hospital over the weekend as opposed to a weekday," said lead author Biroom Mekonnen, who conducted the study as a graduate student at UGA's College of Public Health.

There are many ideas about why this effect exists, he said, and some smaller studies have pointed to reduced hospital staffing over weekends and limitations in overall hospital resources.

The research begins

To better understand the dynamics of the weekend effect, Mekonnen and his co-authors wanted to investigate patient outcomes for different types of strokes admitted to hospitals over the weekend nationwide.

Using a 2016 sample of inpatient hospital data, the team looked at the hospital deaths connected to ischemic and hemorrhagic strokes in rural and urban facilities across the U.S.

They found evidence to support the weekend effect in both urban and [rural hospitals](#), but the outcomes were especially bad for rural patients who suffered from hemorrhagic strokes.

But the day of the week may just be one factor in a larger trend of unfavorable [stroke outcomes](#) for rural patients, said co-author Donglan "Stacy" Zhang, an assistant professor of health policy and management in [public health](#).

Dealing with fewer resources

Hospitals in [rural areas](#) tend to operate with fewer resources, including fewer if any stroke specialists or the equipment to handle particularly severe cases. They also serve a wider geographic area, she said. In most [rural communities](#), it's not uncommon to drive over an hour to reach the nearest hospital.

That's why the authors wanted to look at both location and type of stroke.

"Ischemic strokes are more common, but hemorrhagic strokes are more severe," said Mekonnen. "You tend to see higher mortality rates with hemorrhagic strokes. Timely care is critical."

The good news is that more rural facilities are joining telestroke care networks, where providers in rural hospitals can connect with stroke specialists and collaborate on treatment when a patient arrives with signs of stroke.

Telemedicine can help

So, what can be done to protect patients, especially rural ones, from the [weekend effect](#)? The authors recommend further investment in [telemedicine](#).

And one silver lining of the current coronavirus pandemic is that it has triggered a wider adoption of telemedicine among health insurers, providers and patients.

While a patient still needs hands-on treatment for stroke, said Zhang, medical providers may be able to diagnose the type of stroke using telemedicine, which speeds up treatment once the patient arrives at the hospital. She urges more policies favoring telemedicine, including payment reimbursement.

Mekonnen encourages individuals who are at risk for stroke or other major health events to look into the telemedicine options available to them. "This may be the new norm," he said.

The study, "Weekend Effect on in-Hospital Mortality for Ischemic and Hemorrhagic Stroke in US Rural and Urban Hospitals," was published in the *Journal of Stroke & Cerebrovascular Diseases* in October.

More information: Birook Mekonnen et al. Weekend Effect on in-Hospital Mortality for Ischemic and Hemorrhagic Stroke in US Rural and Urban Hospitals, *Journal of Stroke and Cerebrovascular Diseases* (2020). [DOI: 10.1016/j.jstrokecerebrovasdis.2020.105106](https://doi.org/10.1016/j.jstrokecerebrovasdis.2020.105106)

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