

# Women with stroke disadvantaged in critical treatment time window

14 July 2022



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Despite women with stroke being more likely than men to arrive at the hospital by ambulance, their care is less likely to follow a smooth pathway of care along the way, according to new research published in the *Medical Journal of Australia*.

There was also an age effect, with [ambulance](#) staff more likely to miss a [stroke](#) diagnosis in [women](#) under the age of 70 years than they did in younger men.

Lead author Dr. Xia Wang, research fellow at The George Institute for Global Health, said women typically have worse functional outcomes after stroke and require more supportive care than men, so ensuring they receive best practice care is important.

"Our study suggests that better recognition of stroke symptoms in women by ambulance staff could ensure the right treatment is started as early as possible and give them the best opportunity for recovery," she said.

Stroke is Australia's third most common cause of

death, with 55,000 people likely to suffer one each year. Treatment is changing thanks to developments in medical research in recent years. There are now more proven options leading to better outcomes for people who have experienced a stroke. But the success of these breakthroughs is often very time dependent, so identifying a stroke even before a patient has arrived at the hospital is critical.

Over 200,000 patients (51% women) admitted to NSW hospitals between July 2005 and December 2018 and subsequently diagnosed as having a stroke were included in the study. About half the patients arrived at hospital by ambulance, with women more likely than men to present this way.

The researchers found that women under 70 years old who went on to be diagnosed as having a stroke were more likely than men to be assessed by ambulance staff as having migraine, anxiety, unconsciousness, [high blood pressure](#), nausea, or headache. And they were less likely than men to receive pre-hospital stroke care during their ambulance journey. Yet, there were no differences in the time between the emergency call and emergency department admission.

Senior Research Fellow and Academic Lead of the George Institute's Global Brain Health Initiative, Dr. Cheryl Carcel said that missing stroke diagnosis in women could be due to different symptoms, but there was possible implicit sex bias amongst health care providers.

"When stroke is not recognized early, delays can have serious consequences," she said.

"Procedures for in-ambulance stroke care ensure patients with stroke symptoms are brought to a high-level specialized facility quickly to receive life-saving treatment. While there aren't any studies looking at clinician sex bias in stroke, we have evidence from other countries where it is happening in coronary artery disease. Greater awareness

amongst all [health professionals](#) about differences in symptom presentation between men and women could help address this bias. In the case of stroke, this is particularly important for ambulance staff, so that women are identified early and treatment is commenced even before they reach the hospital."

**More information:** Xia Wang et al, Differences in the pre-hospital management of women and men with stroke by emergency medical services in New South Wales, *Medical Journal of Australia* (2022).  
[DOI: 10.5694/mja2.51652](https://doi.org/10.5694/mja2.51652)

Provided by Imperial College London

APA citation: Women with stroke disadvantaged in critical treatment time window (2022, July 14) retrieved 2 October 2022 from <https://medicalxpress.com/news/2022-07-women-disadvantaged-critical-treatment-window.html>

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