Differences in the pre-hospital management of women and men with stroke by emergency medical services in New South Wales

To the Editor: We read the article by Wang and colleagues[1] with great interest. In their study, they used linked administrative datasets from 2005 to 2018 to investigate sex differences in pre-hospital management of patients with stroke from a single jurisdiction. Among their findings, they observed that a greater proportion of women (52.4%) than men (47.9%) arrived at hospital by ambulance.

We seek to draw attention to a similar, nationally representative study on the factors associated with the use of ambulances and access to evidence-based care among patients with stroke.[2] Our study included patients with first-ever strokes from the Australian Stroke Clinical Registry (2010–2013) linked with administrative data (emergency, hospital admissions),[2] as part of the Stroke123 study[3] (including 39 hospitals from New South Wales, Queensland, Victoria and Western Australia). We found that among the 6262 patients with first-ever stroke, 4737 (76%) arrived by ambulance.[2] Interestingly, we also found sex differences in arrival by ambulance before adjustment for other covariates (women, 78.8% *v* men, 72.9%).[2]

In the Stroke123 study, we adjusted for factors associated with ambulance arrival.[2,3] Some of the factors most strongly associated with ambulance arrival were age, frailty and markers of stroke severity. We found that patients who were older, frailer and had more severe strokes were more likely to arrive by ambulance. Following adjustments for age and stroke severity, the sex differences were no longer statistically significant.[2] In other research undertaken by our group using linked ambulance, hospital and Australian Stroke Clinical Registry data, other important factors associated with arrival by ambulance included call-taker or paramedic identification of stroke, which was less often identified in women.[4]

In the investigations on sex differences by Wang and colleagues, there was no adjustment for markers of stroke severity. We are curious as to why no adjustment for Glasgow Coma Scale was made, particularly when looking at assessment for stroke by paramedics. It is possible that the sex differences observed would not be as marked after adjusting for stroke severity.

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Acknowledgements: Monique Kilkenny receives Future Leadership Fellowship support from the National Heart Foundation of Australia (105737).

Open access: Open access publishing facilitated by Monash University, as part of the Wiley - Monash University agreement via the Council of Australian University Librarians.

Competing interests: No relevant disclosures. ■

doi: 10.5694/mja2.51810

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2 Eliakundu AL, Cadilhac DA, Kim J, et al. Factors associated with arrival by ambulance for patients with stroke: a multicentre, national data linkage study. *Australas Emerg Care* 2021; 24: 167-173.

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4 Eliakundu AL, Cadilhac DA, Kim J, et al. Determining the sensitivity of emergency dispatcher and paramedic diagnosis of stroke: statewide registry linkage study. *J Am Coll Emerg Physicians Open* 2022; 3: e12750. ■