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AMBULANCE RAMPING ASSOCIATED WITH INCREASED 30-DAY RISK OF DEATH

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LONGER ambulance offload times are associated with greater 30-day risks of death and ambulance re-attendance, according to Victorian research published today by the *Medical Journal of Australia*.

Researchers from Ambulance Victoria, Monash University, Royal Melbourne Hospital, Alfred Health, and the Baker Heart Research Institute analysed data from adults with non-traumatic chest pain transported by ambulance to Victorian emergency departments (EDs), 1 January 2015 – 30 June 2019. Patients with ST elevation myocardial infarction (on pre-hospital electrocardiography) and those who were transferred between hospitals or not transported to hospital (eg, cardiac arrest or death prior to transport) were excluded from the study.

"We included 213 544 people with chest pain transported by ambulance to EDs," the authors, led by Dr Luke Dawson, a cardiologist at Alfred Health and Monash University, reported .

"The median offload time increased from 21 minutes in 2015 to 24 minutes during the first half of 2019.

"Three offload time tertiles were defined to include approximately equal patient numbers: tertile 1 (0–17 minutes), tertile 2 (18–28 minutes), and tertile 3 (more than 28 minutes).

"Thirty-day risk of death was greater for patients in tertile 3 than those in tertile 1 (adjusted rates, 1.57% v 1.29%), as was that of a second ambulance attendance with chest pain (adjusted rates, 9.03% v 8.15%).

"Our major findings are that the median offload time increased during 2015–19, that the risks of death and ambulance re-attendance with chest pain within 30 days of initial ED presentation were higher when the offload time exceeded 17 minutes, and that longer offload times were associated with presentations by people over 65 or women, at hospitals with larger total bed numbers, and presentation between 8 am and midnight, on weekdays, or during winter or spring," Dawson and colleagues wrote.

Ambulance offload delays ("ramping") have been associated with "prolonged ambulance response times, longer ED and hospital admission times, and cancellations of elective admissions and procedures that are probably caused by ED overcrowding and access block".

"The impact of delays on patient outcomes is less clear; longer assessment and length of stay times have been reported, but discussion of their influence on clinical endpoints such as death has largely been limited to anecdotal reports in the mass media," wrote Dawson and colleagues.

"Our findings should alert clinicians and health policymakers to the need for innovative strategies that reduce ambulance offload times. A key performance indicator for hospital performance in Victoria is the proportion of patients transferred from ambulance to ED within 40 minutes.

"As we found that mortality increased with times beyond 17 minutes, this target may be less appropriate than aiming to complete transfers within 15–20 minutes.

"Such a change to guidelines would be consistent with other jurisdictions, such as the United Kingdom, where the National Health Service requires handover of patients within 15 minutes of an ambulance arriving at an ED.

"Improving the speed of ambulance-to-ED transfers is urgently required," Dawson and colleagues concluded."

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