**Submission No 1**

# INQUIRY INTO IMPACT OF AMBULANCE RAMPING AND ACCESS BLOCK ON THE OPERATION OF HOSPITAL EMERGENCY DEPARTMENTS IN NEW SOUTH WALES

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The Hon. Greg Donnelly MLC
Committee Chair, Portfolio Committee No. 2 - Health
Parliament House, Macquarie St
Sydney NSW 2000

August 11, 2022

**Re: Inquiry into the impact of ambulance ramping and access block on the operation of hospital emergency departments in New South Wales**

Dear Committee,

Thank you for the invitation to make a submission to the inquiry. Given this invitation likely relates to our recent research regarding patient-level impacts of ambulance offload delays among patients presenting with acute chest pain,[1] we have limited our submission primarily to discussion surrounding a single point from the Terms of Reference.

**Terms of Reference Addressed:**
*(e) how ambulance ramping and access block impacts on patients, paramedics, emergency department and other hospital staff*

Ambulance offload delays are largely driven by access block and overcrowding in emergency departments (ED's) and hospitals. A large body of evidence has demonstrated adverse system effects related to access block (longer ED and admission times, cancellations of elective admissions and procedures) and ambulance offload delays (poorer ambulance response times) (Figure 1).

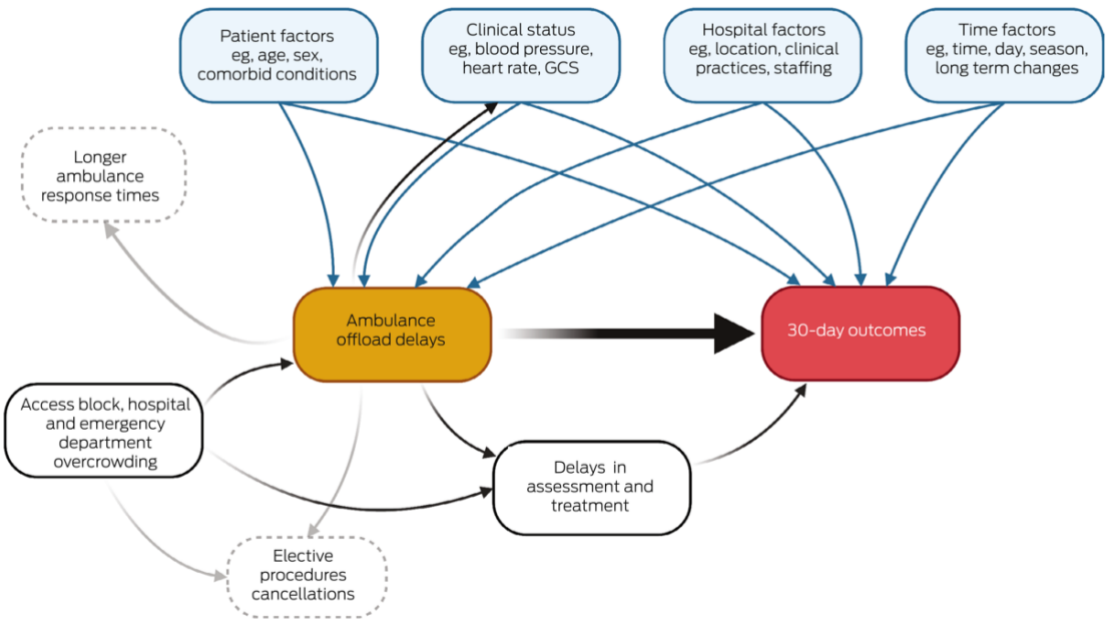


**Figure 1. Influence of ambulance offload delays on 30-day clinical outcomes for patients.** The directed acyclic graph model is based on relationships identified in previous studies between various factors, ambulance offload delays, and 30-day clinical outcomes.[1]

Our recent analysis assessed the influence of ambulance offload delays on 30-day risk of death and re-presentation among 213,544 patients presenting with acute chest pain over a 4.5 year period in Victoria, Australia. In analysis adjusted for patient age, sex, comorbidities, and clinical status, longer ambulance offload times were associated with increased mortality beyond 17 minutes.

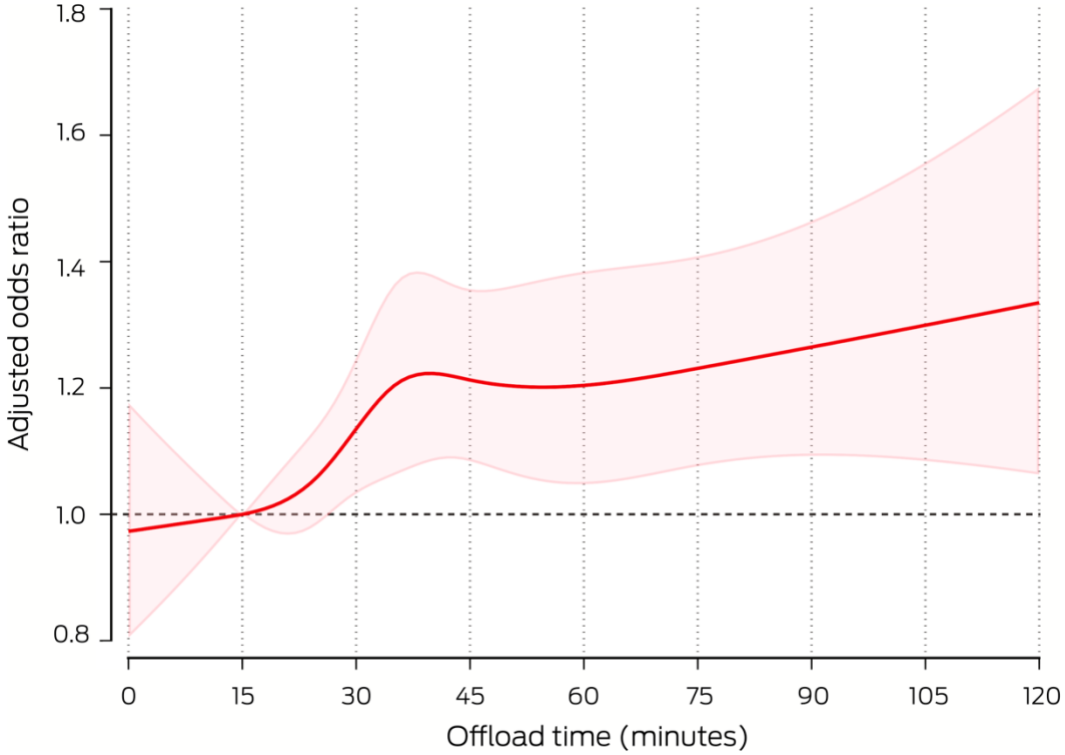


**Figure 2. Relationship between adjusted odds ratio of thirty-day mortality and ambulance offload time among patients presenting with acute chest pain.** Analysis adjusted for age, sex, comorbid conditions, clinical observations, time of presentation and attended hospital, reference 15 minutes.[1]

It is important to note that the 17 minutes beyond which mortality appeared to be increased, is a shorter period than current government key performance indicators in Australia including in both NSW (offload within 30 minutes) and Victoria (offload within 40 minutes). It is also important to note that these findings pre-date COVID-19 (study period 2015-2019) and ambulance offload delays are substantially worse in both Victoria and NSW at present.

Caveats to this analysis are the observational nature of the study, which may be influenced by unmeasured confounders and the observed association between ambulance offload times and mortality are an association which may not necessarily be causal. Similarly, associations between ED overcrowding and mortality have been reported and it is unclear the degree to which higher mortality is attributable to overcrowding rather than offload delays. Nonetheless, improving access block and hospital overcrowding are a fix for both ED overcrowding and offload delays.

Finally, some patient and hospital factors were associated with longer offload times including older age, female sex, daytime or evening presentation, larger hospitals (bed numbers), winter or spring presentation, and presentation to a public hospital.

The main recommendation from this study is that state ambulance offload targets require reconsideration. Ambulance 'ramping' lacks a clear definition and is commonly reported as the percentage of patients that do not meet the state-based offload target time, meaning that selection of an appropriate target time is important. In the United Kingdom guidelines require ambulance offload within 15 minutes (compared to 30 minutes in NSW and 40 minutes in Victoria). Furthermore, given the relationship between ambulance offload times, access block and overcrowding, it is important that solutions are holistic in nature to address the underlying causes of ambulance offload delays.

Further discussion and details regarding this analysis can be found in the full manuscript which accompanies this submission.

Yours sincerely,

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Reference:

[1] Dawson LP, Andrew E, Stephenson M, Nehme Z, Bloom J, Cox S, Anderson D, Lefkovits J, Taylor AJ, Kaye D, Smith K, Stub D. The influence of ambulance offload time on 30-day risks of death and re-presentation for patients with chest pain. Med J Aust. 2022 Jun 23. doi: 10.5694/mja2.51613. Epub ahead of print. PMID: 35738570.