

BMJ Article SUMMARY: [Real-world feasibility study to investigate the use of a multidisciplinary app \(Pulsara®\) to improve prehospital communication and timelines for acute stroke/STEMI care](#)

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BACKGROUND: Cardiovascular disease, including stroke and STEMI, is the leading cause of death and disability in Australia. A key element to achieving better outcomes is rapid patient assessment and treatment.

PROBLEM: Interdisciplinary prehospital communication is often fragmented, with clinicians dispersed across health services and reliant on multiple separate communication systems, such as radio, phone, and paging systems. This disjointed system leads to miscommunication, inefficiencies, and subsequent treatment delays.

PROPOSED SOLUTION: Pulsara is a scalable communication and logistics platform that runs on smartphones and tablets to unite distributed teams and fragmented technologies as dynamic events evolve. Streamlining communication with Pulsara has been shown to reduce treatment times by up to 68% in a previous Australian case study.

STUDY DETAILS:

METHODS: Authors recorded assessment and treatment times of 604 patients with suspected acute stroke and 247 suspected STEMI across 25 Ambulance Victoria branches and 2 hospitals in regional Victoria, Australia.

RESULTS:

For stroke patients, the following significant results were achieved with the use of Pulsara:

- The time between patient ambulance loaded and hospital arrival for stroke was 5 minutes faster ($p < 0.0009$)
- Patients were off the ambulance stretcher 8 minutes faster ($p = 0.0001$)
- Paramedics departed the hospitals 5 minutes faster ($p = 0.0001$)
- On arrival at the hospital, 92% of strokes with Pulsara were triaged as emergency (categories 1 and 2), compared with 47% without Pulsara ($p = 0.000$)
- Time between hospital arrival and triage improved by 4 minutes ($p = 0.0001$)
- ED door-to-first medical review was 17 minutes faster ($p = 0.0001$)
- Door-to-CT times were 44 minutes faster ($p = 0.0001$)

For STEMI patients, the following significant results were achieved with the use of Pulsara:

- Patients were offloaded from the ambulance stretcher 5 minutes faster ($p = 0.014$)
- The time between hospital arrival and triage improved by 3 minutes ($p = 0.004$)
- The time between patient loaded in the ambulance and hospital arrival was 23 minutes faster ($p < 0.006$)

CONCLUSIONS:

Using Pulsara led to shorter timelines in caring for patients with suspected stroke and STEMI, and strong uptake suggests the clinical utility of such a communication system. Immediate and accurate sharing of patient clinical and treatment information with the receiving hospital is essential. A single communication system such as Pulsara that covers both the prehospital and within-hospital settings further supports the integration of treatment advances that span both community and medical settings.