

Recognition and response systems save lives



Unrecognised or undertreated acute deterioration leads to serious adverse events such as cardiac arrest and unplanned intensive care unit admission.¹

1. Schein RM, Hazday N, Pena M, et al. 1990. Clinical antecedents to in-hospital cardiopulmonary arrest. *Chest* 98(6): 1388–92.



A key study has shown that **60 percent** of patients had warning signs up to **24 hours** before having a cardiac arrest, unplanned intensive care admission or death.²



2. Kause J, Smith G, Prytherch D, et al. 2004. A comparison of Antecedents to Cardiac Arrests, Deaths and Emergency Intensive care Admissions in Australia and New Zealand, and the United Kingdom; the ACADEMIA study. *Resuscitation* 62(3): 275–82.

40%



A recent Dutch study showed a nationwide recognition and response system reduced cardiac arrests in hospital by **40 percent** and mortality by **20 percent**.³

3. Ludikhuijze J, Brunsvelde-Reinders A, Dijkgraaf M, et al. 2015. Outcomes Associated With the Nationwide Introduction of Rapid Response Systems in The Netherlands. *Critical Care Medicine* 43(12): 2544–51.



Recognise deterioration early and take action

Measuring vital signs is vital. They are used to calculate the New Zealand Early Warning Score (NZEWS):⁴

- respiratory rate
- need for supplemental oxygen
- oxygen saturation
- temperature
- systolic blood pressure
- heart rate
- level of consciousness



NZEWS is based on the UK's national EWS. The NEWS outperformed 33 other early warning scores in predicting patients at risk of cardiac arrest, unplanned ICU admission or death.⁵



It also outperformed the systematic inflammatory response syndrome (SIRS) criteria and quick Sepsis related Organ failure Assessment (qSOFA) in identifying patients with sepsis in emergency departments and hospital wards.⁶



4. Royal College of Physicians. 2012. *National Early Warning Score (NEWS). Standardising the assessment of acute-illness severity in the NHS*. London: Royal College of Physicians.

5. Smith GB, Prytherch DR, Meredith P, et al. 2013. The ability of the National Early Warning Score (NEWS) to discriminate patients at risk of early cardiac arrest, unanticipated intensive care unit admission, and death. *Resuscitation* 84(4): 465–70.

6. Churpek MM, Snyder A, Han X, et al. 2016. qSOFA, SIRS and early warning scores for detecting clinical deterioration in infected patients outside the ICU. *Am J Respir Crit Care Med* [Epub ahead of print]



Communication failure was the most common theme identified in an analysis of clinical deterioration related adverse events reported to the Commission.⁷

7. Health Quality & Safety Commission. 2015. *Learning from adverse events. Adverse events reported to the Health Quality & Safety Commission: 1 July 2014 to 30 June 2015*. Wellington: Health Quality & Safety Commission.



Implementing a nationally consistent approach to recognising and responding to acute deterioration offers benefits to patients, clinicians and the system as a whole by:

- reducing duplication of effort
- managing costs
- addressing unwarranted clinical variation.^{8–11}

8. Green M. 2013. *Between the Flags Program Interim Evaluation Report*. Sydney: Clinical Excellence Commission.

9. Health Quality & Safety Commission. 2016. *The deteriorating adult patient. Current practice and emerging themes*. Wellington: Health Quality & Safety Commission.

10. Moore D and Poynton M. 2015. *Business case for investing in a quality improvement programme to reduce harm caused by clinical deterioration*. Wellington: Sapere Research Group.

11. Health Quality & Safety Commission. 2016. *Deteriorating adult patient evidence summary. What do we know?* Wellington: Health Quality & Safety Commission.