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# Paediatric early warning system (PEWS) – factsheet for senior clinicians and clinical leads

Purpose

This factsheet is for senior clinicians and clinical leads responsible for implementing and improving paediatric early warning systems within Aotearoa New Zealand hospitals.

Background

Serious adverse events, including death, affect paediatric patients in hospital. Some of these events, or their outcomes, are preventable.

While there is limited published evidence of the exact frequency or consequence of failure to recognise or respond to acute deterioration in tamariki in Aotearoa New Zealand hospitals, the use of paediatric early warning tools and a systematic approach to escalation and response to tamariki at risk of deterioration are widely recommended.[[1]](#endnote-2),[[2]](#endnote-3),[[3]](#endnote-4),[[4]](#endnote-5). Available evidence suggests opportunities for improvement in care processes include vital sign recording, escalation to experienced clinicians, timely senior review and documentation and communication around episodes of acute paediatric deterioration.,[[5]](#endnote-6),[[6]](#endnote-7),[[7]](#endnote-8),[[8]](#endnote-9)

A 2017 literature review and environmental scan of hospital inpatient paediatric services in Aotearoa New Zealand recognised that many inpatient paediatric services have paediatric vital signs charts and escalation processes, but not many are the same. This means there is the opportunity to have a national approach to recording and interpreting vital signs. Having a ‘common language’ would be helpful when tamariki travel between locations and when staff move from one place to another to work. It also potentially provides access to a much larger data set for anyone wanting to research ways to improve the recognition of and response to unwell tamariki in Aotearoa New Zealand.

Paediatric vital signs chart use

Clinicians should start one of the four age-based paediatric vital signs charts (PVSCs) for any tamariki who needs their vital signs recorded in a hospital setting. Tamariki have age-based charts because their physiological variables, when well and when responding to an illness or injury, change as they get older.

A PVSC should not be used for tamariki who are receiving intensive, high-dependency or immediate postoperative care, such as in a post-anaesthetic care unit, as these units have their own specific charts. However, before these tamariki are transferred to a paediatric ward, the final vital signs should be charted on an age-appropriate PVSC.

What makes an effective early warning system?

Researchers broadly agree on what components are needed in an effective recognition and response system (or early warning system), and some jurisdictions have included these components in policy.[[9]](#endnote-10) For a system to work well, improve and be sustainable, organisations must have underpinning structures for clinical governance, teamwork, handover and communication, education, measurement and evaluation.

Early warning systems prompt thinking about deterioration, vital sign reference ranges and pathways for getting help from progressively more senior and more skilled responders as a tamariki deteriorates.[[10]](#endnote-11) They prompt early intervention, prevent adverse outcomes and reduce severe morbidities such as a code blue events, admission to an intensive care unit or cardiac arrest.[[11]](#endnote-12) These systems also foster enhanced teamwork, communication and confidence of routinely calling for help when needed.[[12]](#endnote-13)

How you can support successful implementation and improvement

Essential to the success of your organisation’s early warning system will be your expertise:

* on clinical governance groups
* in clinical education programmes
* in developing processes for data collection and analysis
* in leading or participating in projects to develop improvements to address clinical issues the system may highlight.

Clinical leaders with accountability for governance of the system need to consider issues such as resourcing and sustainability, clinical communication and education, measurement and evaluation and quality improvement. Visible, collaborative and ongoing clinical leadership is vital for the success of the system.

Clinicians responding to acute deterioration communicate better and understand their responsibilities more clearly when their clinical leaders understand and role model the escalation process in their local hospital(s). Effectively implementing an early warning system relies on achieving a culture of care where it is routine for nurses and junior clinicians to seek, and receive, timely advice from appropriately skilled responders. Clinical leads provide visible and ongoing leadership to promote and support junior colleagues to escalate care and respond to calls to assess tamariki who are deteriorating.

Senior clinicians, such as nursing clinical managers or paediatricians, who respond constructively to requests for assistance and actively support and promote use of recognition and response processes help to develop a positive culture that rewards teamwork and escalation of concerns. Effective use of the system relies on overcoming barriers associated with intra- and inter-professional hierarchies; responders must be able to work collaboratively with treating teams to determine appropriate management of a tamariki’s deterioration.[[13]](#endnote-14)

Support for project teams

The Health Quality & Safety Commission has developed a package of resources, guidance and support to help project teams improve paediatric early warning systems or implement a system if one is not currently in place.

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9. Australian Commission on Safety and Quality in Health Care. 2012. *National Safety and Quality Health Service Standards (2012).* Sydney: Australian Commission on Safety and Quality in Health Care. [↑](#endnote-ref-10)
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