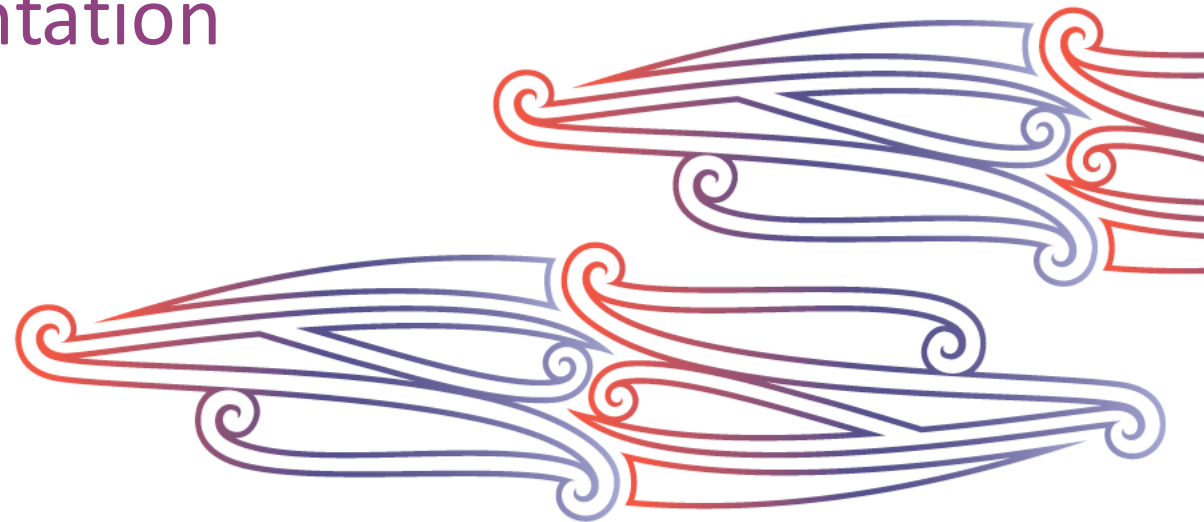




HEALTH QUALITY & SAFETY  
COMMISSION NEW ZEALAND  
*Kupu Taurangi Hauora o Aotearoa*

# National paediatric early warning system

Education for  
implementation

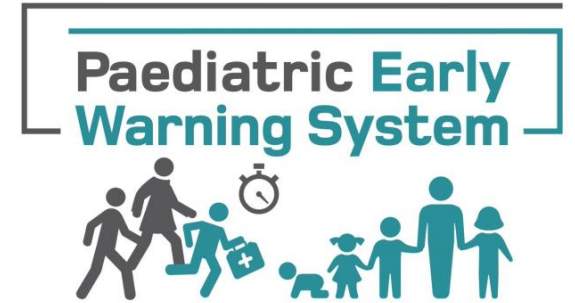


October 2022

# Learning outcomes

By the end of the session staff will be able to:

- describe the components of a paediatric early warning system
- distinguish between the four paediatric vital sign charts (PVSC) and the individual components making up each chart
- use the national tools on the back of the PVSC to assess vital signs
- describe steps within the escalation pathway in relation to the deteriorating tamariki
- modify vital sign parameters in the modifications section (medical staff)
- apply changes made in the modifications section of the PVSC



# Abbreviations

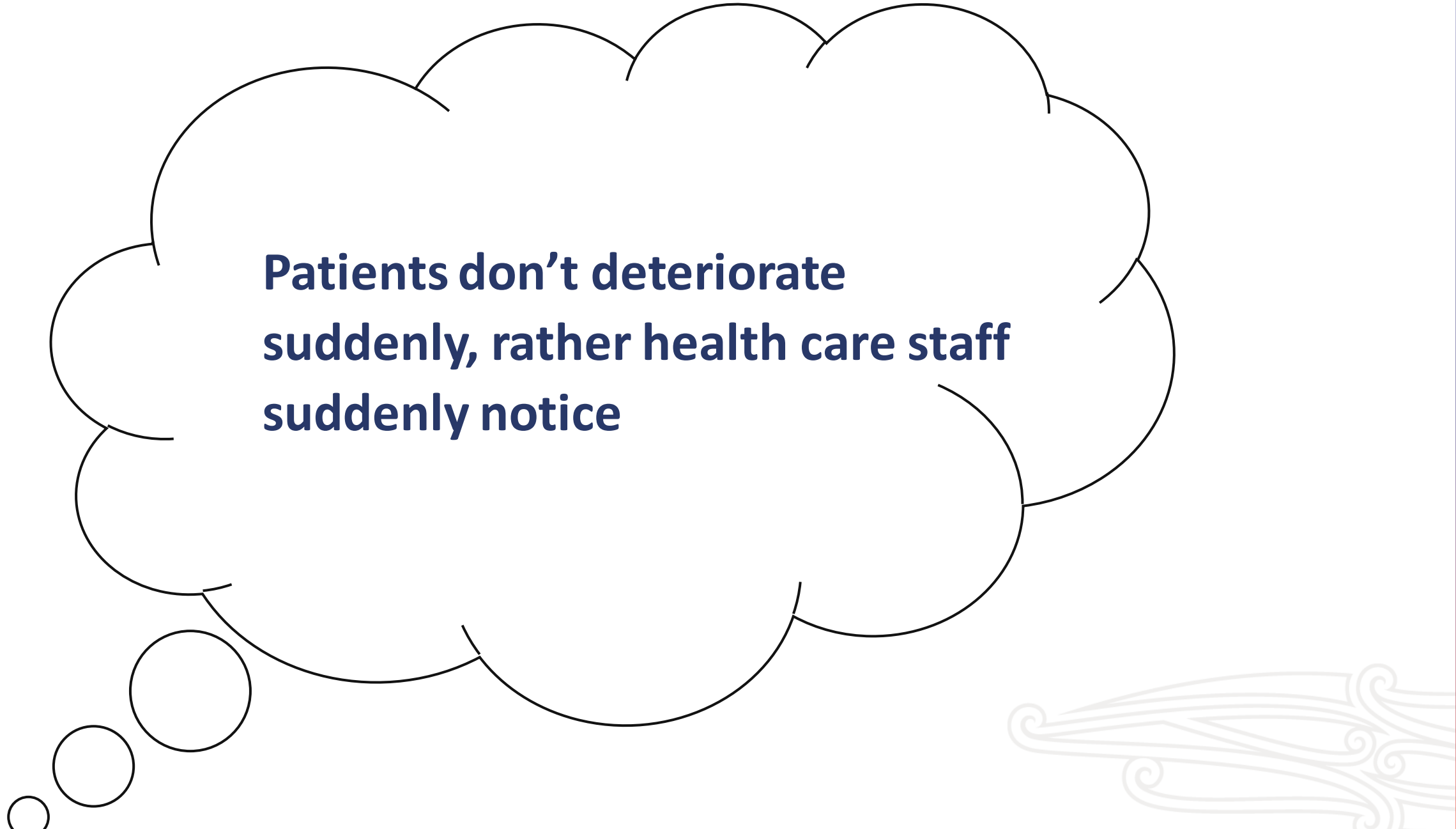
- PEWS – paediatric early warning system
- PEW score – paediatric early warning score
- PVSC – paediatric vital signs chart



## Why we need a PEWS

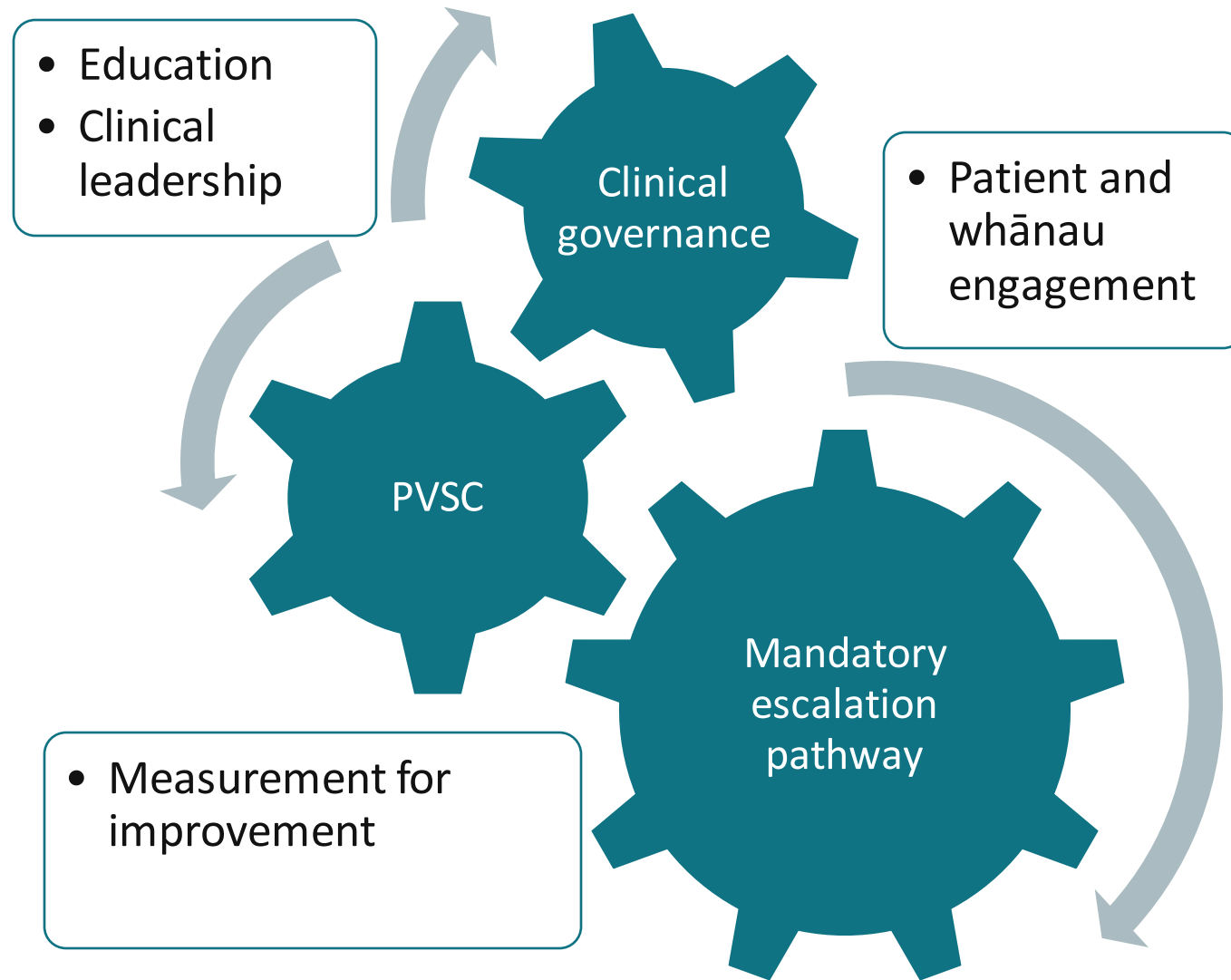
The aim of the **system** is to improve the early recognition of and response to acutely deteriorating tamariki in hospital





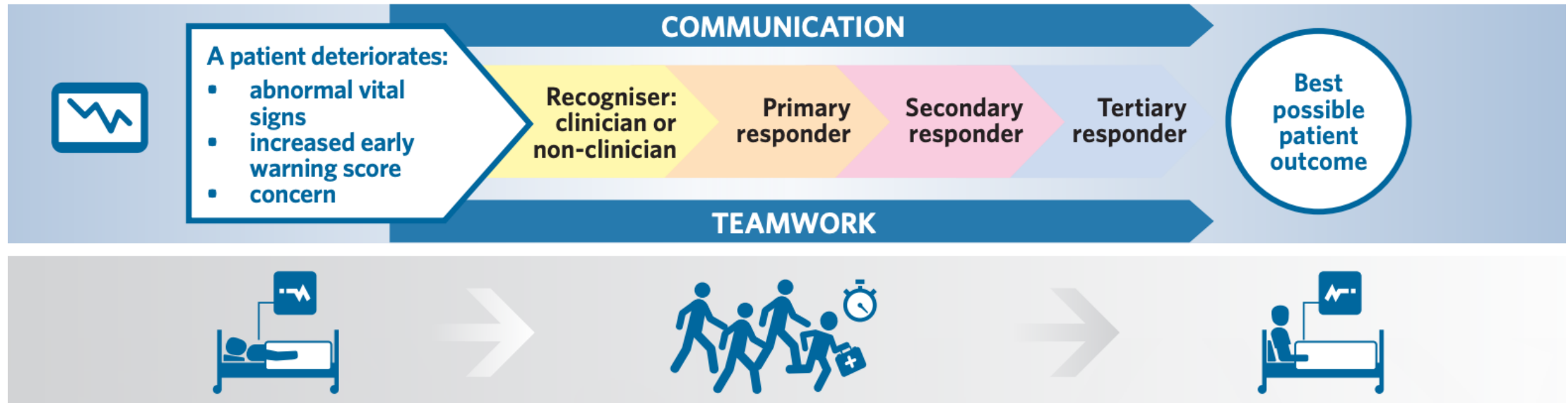
**Patients don't deteriorate  
suddenly, rather health care staff  
suddenly notice**

# Components of PEWS



# Recognition and response systems can save lives

Measure vital signs, escalate care and work together to provide a timely and appropriate clinical response



# Background

Suriname: ..... NHI: .....  
 First Names: .....  
 Date of Birth: ..... / ..... / ..... SEX: .....

PLACE PATIENT ID HERE

| Maternity Vital Signs   | Date               |  | MEWS | Date                       |  |
|---|--------------------|--|------|----------------------------|--|
|   | Time (24 hour)     |  |      | Time (24 hour)             |  |
| <b>Respiratory Rate</b><br>(breaths/min)                              | ≥ 31               |  | RET  | ≥ 31                       |  |
|   | 26-30              |  | 3    | 26-30                      |  |
|   | 21-25              |  | 2    | 21-25                      |  |
|   | 10-20              |  | 0    | 10-20                      |  |
|   | write RR value     |  |      |                            |  |
| <b>Oxygen</b><br>(L/min) value  | Room air x         |  | 0    | Room air x                 |  |
|   | Supplement (L/min) |  | 2    | Supplement (L/min)         |  |
| <b>Oxygen Saturation (%)</b><br>write SpO <sub>2</sub> value          | > 95               |  | 0    | > 95                       |  |
|   | 92-94              |  | 2    | 92-94                      |  |
| <b>Heart Rate</b><br>(bpm)  | ≥ 140s             |  | RET  | ≥ 140s                     |  |
|   | 130s               |  | 3    | 130s                       |  |
|   | 120s               |  | 2    | 120s                       |  |
|   | 110s               |  | 1    | 110s                       |  |
|   | 100s               |  | 0    | 100s                       |  |
|   | 90s                |  | 0    | 90s                        |  |
|   | 80s                |  | 0    | 80s                        |  |
|   | 70s                |  | 0    | 70s                        |  |
|   | 60s                |  | 1    | 60s                        |  |
|   | 50s                |  | 1    | 50s                        |  |
| <b>Systolic Blood Pressure</b><br>(mmHg)                              | ≥ 200s             |  | RET  | ≥ 200s                     |  |
|   | 190s               |  | 3    | 190s                       |  |
|   | 180s               |  | 3    | 180s                       |  |
|   | 170s               |  | 3    | 170s                       |  |
|   | 160s               |  | 3    | 160s                       |  |
|   | 150s               |  | 2    | 150s                       |  |
|   | 140s               |  | 2    | 140s                       |  |
|   | 130s               |  | 0    | 130s                       |  |
|   | 120s               |  | 0    | 120s                       |  |
|   | 110s               |  | 0    | 110s                       |  |
| <b>Diastolic Blood Pressure</b><br>(mmHg)                             | ≥ 110s             |  | 3    | ≥ 110s                     |  |
|   | 100s               |  | 3    | 100s                       |  |
|   | 90s                |  | 2    | 90s                        |  |
|   | 80s                |  | 0    | 80s                        |  |
|   | 70s                |  | 0    | 70s                        |  |
|   | 60s                |  | 0    | 60s                        |  |
|   | 50s                |  | RET  | ≤ 50s                      |  |
|   | ≤ 40s              |  | 3    | ≤ 40s                      |  |
|   | ≥ 39s              |  | 3    | ≥ 39s                      |  |
|   | 38s                |  | 1    | 38s                        |  |
| <b>Temperature</b><br>(°C)  | 37s                |  | 0    | 37s                        |  |
|   | 36s                |  | 0    | 36s                        |  |
|   | 35s                |  | 1    | 35s                        |  |
|   | ≤ 34s              |  | 3    | ≤ 34s                      |  |
|   | Normal             |  | 0    | Normal                     |  |
| <b>Level of Consciousness</b><br>mark LOC with X                      | Abnormal           |  | 3    | Abnormal                   |  |
|   | Normal             |  | 0    | Normal                     |  |
| <b>MATERNITY EARLY WARNING SCORE TOTAL</b><br>or apply exemption (EX) |                    |  |      | <b>MEWS TOTAL</b><br>or EX |  |
| <b>Pain score</b><br>(0-10)   | Rest               |  |      | Rest                       |  |
|   | Movement           |  |      | Movement                   |  |
| <b>Initials</b>   |                    |  |      |                            |  |

Insert organisational logo or identifier here

Surname: ..... NHI: .....  
 First Names: .....  
 Date of Birth: ..... / ..... / ..... SEX: .....

PLACE PATIENT ID HERE

MATERINITY VITAL SIGNS CHART SIDE 1

THIS CHART IS FOR PREGNANT OR RECENTLY PREGNANT WOMEN ONLY (WITHIN 42 DAYS)

ESCALATE CARE FOR:

- ANY WOMAN YOU, THEY OR THEIR FAMILY ARE WORRIED ABOUT, REGARDLESS OF VITAL SIGNS OR EARLY WARNING SCORE
- ACUTE FETAL CONCERN

| Mandatory escalation pathway - maternity  |   |
|---|---|
| Maternity Early Warning Score (MEWS)  | Action                                    |
| <b>MEWS 1-4</b>   |   |
| <b>MEWS 5-7</b>   | Acute illness or unstable chronic disease |
| <b>MEWS 8-9</b><br>or <u>any</u> vital sign in pink zone<br>Likely to deteriorate rapidly                 |   |
| <b>MEWS 10+</b><br>or <u>any</u> vital sign in blue zone<br>Immediately life threatening critical illness |   |

A full set of vital signs with corresponding MEWS must be taken and calculated each time at the frequency stated in policy. If there is no timely response to your request for review, escalate to the next coloured zone.

**Modification to Maternity Early Warning Score (MEWS) Triggers**

The MEWS can be changed to prevent inappropriate escalation. All modifications should be made in line with local policy and regularly reviewed by the responsible clinician.

Query any modification that is not signed and dated.

| Vital sign (use abbreviation) | Accepted values and modified MEWS | Date and time | Duration (hours) | Name and contact details |
|-------------------------------|-----------------------------------|---------------|------------------|--------------------------|
| Reason:                       |                                   | / /           | :                |                          |
| Reason:                       |                                   | / /           | :                |                          |
| Reason:                       |                                   | / /           | :                |                          |

USE THIS CHART FOR PREGNANT/POSTNATAL WOMEN WHO REQUIRE REPEATED OBSERVATIONS. NOT FOR ROUTINE INTRAPARTUM USE

- EWS
- MEWS
- NOC/NEWS
- Paediatric Society of New Zealand
- Health Quality & Safety Commission





# Why we need a national PEWS

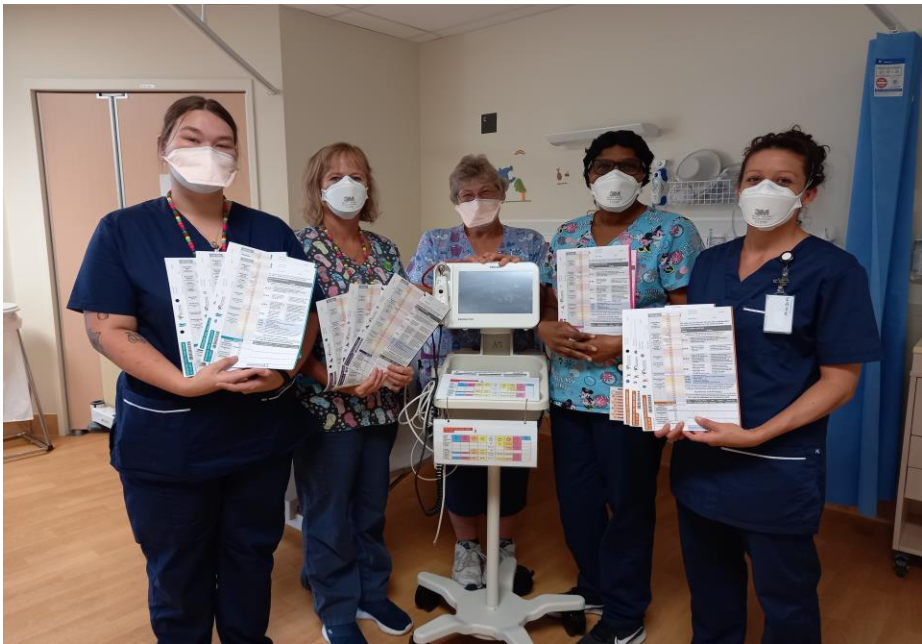
- To provide equal access to an up-to-date PEWS
- To provide one PEWS that is familiar to patients and staff who move between districts
- To support the study of PEWS



# Development process

- PEWS working group
- Testing from August 2021:
  - Starship oncology and general paediatric wards
  - Bay of Plenty District Health Board
  - Nelson Marlborough District Health Board











**PAEDIATRIC VITAL SIGNS CHART**  
**0-11 MONTHS**

HQSC PVSC 0-11m v1

REF NUMBER

LOGO UPLOAD

Family Name:  
Given Name:

Gender:

NHI#:

Date of Birth:

AFFIX PATIENT LABEL HERE.

| Vital Signs  |   | Date Time (24 hour) | PEWS | Date Time (24 hour) |
|--|---|---------------------|------|---------------------|
| <b>Respiratory Rate</b><br>(breaths/min)<br>mark RR with X                                     | ≥ 80  |                     | 4    | ≥ 80                |
|  | 70s   |                     |      | 70s                 |
|  | 60s   |                     | 2    | 60s                 |
|  | 50s   |                     | 1    | 50s                 |
|  | 40s   |                     | 0    | 40s                 |
|  | 30s   |                     |      | 30s                 |
|  | 20s   |                     | 1    | 20s                 |
|  | 10s   |                     | 4    | 10s                 |
|  | ≤ 9   |                     | RRT  | ≤ 9                 |
|  | <b>Respiratory Distress</b><br>mark RD with X | Severe              |      | 4                   |
| Moderate   |   |                     | 2    | Moderate            |
| Mild   |   |                     | 1    | Mild                |
| Nil  |   |                     | 0    | Nil                 |
| <b>Oxygen</b><br>(L/min or FiO <sub>2</sub> %)<br>write value                                  | ≥ 4L or ≥ 35%                                 |                     | 4    | ≥ 4L or ≥ 35%       |
|  | < 4L or < 35%                                 |                     | 2    | < 4L or < 35%       |
|  | Room air X<br>Mode                            |                     | 0    | X Room air<br>Mode  |
| <b>Oxygen Saturation (%)</b><br>write SpO <sub>2</sub>   | High flow rate                                |                     | 0    | High flow rate      |
|  | ≥ 95  |                     | 1    | ≥ 95                |
| <b>Heart Rate</b><br>(bpm)<br>mark HR with X<br>write value if off scale                       | 91-94   |                     | 2    | 91-94               |
|  | ≤ 90  |                     | 4    | ≤ 90                |
|  | ≥ 200   |                     |      | ≥ 200               |
|  | 190s  |                     | 4    | 190s                |
|  | 180s  |                     |      | 180s                |
|  | 170s  |                     | 2    | 170s                |
|  | 160s  |                     | 1    | 160s                |
|  | 150s  |                     |      | 150s                |
|  | 140s  |                     | 0    | 140s                |
|  | 130s  |                     |      | 130s                |
| <b>Blood Pressure</b><br>(mmHg)<br>score systolic BP<br>value only<br>write value if off scale | 120s  |                     |      | 120s                |
|  | 110s  |                     | 1    | 110s                |
|  | 100s  |                     |      | 100s                |
|  | 90s   |                     | 0    | 90s                 |
|  | 80s   |                     |      | 80s                 |
|  | 70s   |                     | 1    | 70s                 |
|  | 60s   |                     | 2    | 60s                 |
|  | 50s   |                     | 4    | 50s                 |
|  | 40s   |                     |      | 40s                 |
|  | 30s   |                     | RRT  | 30s                 |
| <b>Central Capillary Refill</b><br>mark CR with X  | ≥ 3 sec                                       |                     | 4    | ≥ 3 sec             |
|  | < 3 sec                                       |                     | 0    | < 3 sec             |
| <b>Temperature</b><br>(°C)<br>mark Temp with X<br>write value if off scale                     | ≥ 150   |                     | 4    | ≥ 150               |
|  | 140s  |                     |      | 140s                |
|  | 130s  |                     | 2    | 130s                |
|  | 120s  |                     |      | 120s                |
|  | 110s  |                     | 1    | 110s                |
|  | 100s  |                     |      | 100s                |
|  | 90s   |                     | 0    | 90s                 |
|  | 80s   |                     |      | 80s                 |
|  | 70s   |                     | 1    | 70s                 |
|  | 60s   |                     | 2    | 60s                 |
| <b>Pain Score</b><br>write score (0-10)  | 50s   |                     | 4    | 50s                 |
|  | 40s   |                     |      | 40s                 |
| <b>PEWS TOTAL</b>  | 30s   |                     | RRT  | 30s                 |
|  | 20s   |                     |      | 20s                 |
| <b>Whānau concern: Y/N/A</b>   | ≤ 19  |                     |      | ≤ 19                |
|  |   |                     |      |                     |
| <b>Level Of Consciousness</b><br>mark LOC with X   | Alert   |                     |      | Alert               |
|  | Voice   |                     |      | Voice               |
|  | Pain  |                     |      | Pain                |
|  | Unresponsive                                  |                     | RRT  | Unresponsive        |
| <b>Temperature</b><br>(°C)<br>mark Temp with X<br>write value if off scale                     | ≥ 40  |                     |      | ≥ 40                |
|  | 39s   |                     |      | 39s                 |
|  | 38s   |                     |      | 38s                 |
|  | 37s   |                     |      | 37s                 |
|  | 36s   |                     |      | 36s                 |
|  | ≤ 35  |                     |      | ≤ 35                |
| <b>Pain Score</b><br>write score (0-10)  | Rest  |                     |      | Rest                |
|  | Movement                                      |                     |      | Movement            |
| <b>Initials</b>  |   |                     |      |                     |



Family Name: \_\_\_\_\_  
Given Name: \_\_\_\_\_ Gender: \_\_\_\_\_  
Date of Birth: \_\_\_\_\_ NHI#: \_\_\_\_\_  
AFFIX PATIENT LABEL HERE.

**ESCALATE CARE FOR ANY PATIENT YOU OR THEIR WHĀNAU ARE WORRIED ABOUT, REGARDLESS OF VITAL SIGNS OR PEWS**

| Mandatory escalation pathway           | NAME OF DHB   |
|--|---------------|
| <b>Total PEWS</b>                      | <b>Action</b> |
| <b>PEWS 1-3</b>                        |               |
| <b>PEWS 4-5</b>                        |               |
| <b>PEWS 6-7</b>                        |               |
| <b>PEWS 8+</b>                         |               |
| <b>Any vital sign in the blue zone</b> |               |

**Any treatment limitations must be documented in the patient's clinical record.**  
A full set of vital signs must be taken, with corresponding PEWS calculated each time, at a frequency stated in hospital policy. If there is no timely response to your request for review, escalate to the next zone.

**Modification to PEWS triggers**

The PEWS can be changed to prevent inappropriate escalation. All modifications must be made in line with hospital policy and regularly reviewed by the primary team. **Query any modification that is not signed and dated.**

| Vital sign (use abbreviation) | Accepted values and modified PEWS | Date and time | Duration (hours) | Name and contact details |
|-------------------------------|-----------------------------------|---------------|------------------|--------------------------|
|                               |                                   | / / :         |                  |                          |
| Reason:                       |                                   | / / :         |                  |                          |
| Reason:                       |                                   | / / :         |                  |                          |
| Reason:                       |                                   | / / :         |                  |                          |
| END OF LIFE PATHWAY           |                                   | / / :         |                  |                          |



# Paediatric vital signs charts and escalation pathway

Paediatric Early  
Warning System



- Begin the PVSC for any tamariki who is assessed as requiring measurement and recording of vital signs
- The physiology of tamariki alters as they age, impacting on the normal ranges for vital signs
- There are four age-based PVSC, which must be used for the correct age group







## PAEDIATRIC VITAL SIGNS CHART 0-11 MONTHS



## PAEDIATRIC VITAL SIGNS CHART 1-4 YEARS



## PAEDIATRIC VITAL SIGNS CHART 5-11 YEARS



## PAEDIATRIC VITAL SIGNS CHART 12+ YEARS



Family Name: \_\_\_\_\_ Gender: \_\_\_\_\_  
 Given Name: \_\_\_\_\_  
 Date of Birth: \_\_\_\_\_ NHf#: \_\_\_\_\_  
 AFFIX INTENT LABEL HERE.

PAEDIATRIC VITAL SIGNS CHART  
 1-4 YEARS  
 HDEC P/6C 1-4y/1

| Vital Signs   |                         | Date Time (24 hour) | PEWS | Date Time (24 hour)     |
|---|-------------------------|---------------------|------|-------------------------|
| Respiratory Rate (breaths/min) mark RR with X                               | ≥ 55                    |                     | 4    | ≥ 55                    |
|   | 50-54                   |                     | 2    | 50-54                   |
|   | 45-49                   |                     | 1    | 45-49                   |
|   | 40-44                   |                     | 0    | 40-44                   |
|   | 35-39                   |                     | 0    | 35-39                   |
|   | 30-34                   |                     | 0    | 30-34                   |
|   | 25-29                   |                     | 0    | 25-29                   |
|   | 20-24                   |                     | 1    | 20-24                   |
|   | 15-19                   |                     | 2    | 15-19                   |
|   | 10-14                   |                     | 4    | 10-14                   |
| Respiratory Distress mark RD with X   | Severe                  |                     | 4    | Severe                  |
|   | Moderate                |                     | 2    | Moderate                |
|   | Mild                    |                     | 1    | Mild                    |
|   | Nil                     |                     | 0    | Nil                     |
| Oxygen (L/min or FiO <sub>2</sub> %) write value                            | ≥ 4L or ≥ 35%           |                     | 2    | ≥ 4L or ≥ 35%           |
|   | < 4L or < 35%           |                     | 0    | < 4L or < 35%           |
|   | Room air X              |                     | 0    | X Room air              |
| Oxygen Saturation (%) write SpO <sub>2</sub>                                | ≥ 95                    |                     | 1    | ≥ 95                    |
|   | 91-94                   |                     | 2    | 91-94                   |
| Heart Rate (bpm) mark HR with X write value if off scale                    | ≥ 180                   |                     | 4    | ≥ 180                   |
|   | 170s                    |                     | 4    | 170s                    |
|   | 160s                    |                     | 2    | 160s                    |
|   | 150s                    |                     | 2    | 150s                    |
|   | 140s                    |                     | 1    | 140s                    |
|   | 130s                    |                     | 0    | 130s                    |
|   | 120s                    |                     | 0    | 120s                    |
|   | 110s                    |                     | 0    | 110s                    |
|   | 100s                    |                     | 0    | 100s                    |
|   | 90s                     |                     | 1    | 90s                     |
| Central Capillary Refill mark CR with X                                     | ≥ 3 sec                 |                     | 4    | ≥ 3 sec                 |
|   | < 3 sec                 |                     | 0    | < 3 sec                 |
|   | ≥ 160                   |                     | 4    | ≥ 160                   |
|   | 150s                    |                     | 2    | 150s                    |
|   | 140s                    |                     | 1    | 140s                    |
|   | 130s                    |                     | 1    | 130s                    |
|   | 120s                    |                     | 2    | 120s                    |
|   | 110s                    |                     | 4    | 110s                    |
|   | 100s                    |                     | 4    | 100s                    |
|   | 90s                     |                     | 4    | 90s                     |
| Blood Pressure (mmHg) score systolic BP value only write value if off scale | ≥ 160                   |                     | 4    | ≥ 160                   |
|   | 150s                    |                     | 2    | 150s                    |
|   | 140s                    |                     | 1    | 140s                    |
|   | 130s                    |                     | 1    | 130s                    |
|   | 120s                    |                     | 2    | 120s                    |
|   | 110s                    |                     | 4    | 110s                    |
|   | 100s                    |                     | 4    | 100s                    |
|   | 90s                     |                     | 4    | 90s                     |
|   | 80s                     |                     | 4    | 80s                     |
|   | 70s                     |                     | 4    | 70s                     |
| PEWS TOTAL  |                         |                     |      | PEWS TOTAL              |
| Whānau concern: Y/N/A   |                         |                     |      | Y/N/A                   |
| Level Of Consciousness mark LOC with X                                      | Alert                   |                     |      | Alert                   |
|   | Voice Pain Unresponsive |                     |      | Voice Pain Unresponsive |
| Temperature (°C) mark Temp with X write value if off scale                  | ≥ 40                    |                     |      | ≥ 40                    |
|   | 39s                     |                     |      | 39s                     |
|   | 38s                     |                     |      | 38s                     |
|   | 37s                     |                     |      | 37s                     |
| Pain Score write score (0-20)   | Rest                    |                     |      | Rest                    |
|   | Movement                |                     |      | Movement                |
| Initials  |                         |                     |      | Initials                |

Recording vital signs: scoring area

Total PEWS score



Recording vital signs: non-scoring area

Family Name: \_\_\_\_\_ Gender: \_\_\_\_\_  
 Given Name: \_\_\_\_\_  
 AFFIX PATIENT LABEL HERE.  
 Date of Birth: \_\_\_\_\_ NHf#: \_\_\_\_\_

ESCALATE CARE FOR ANY PATIENT YOU OR THEIR WHĀNAU ARE WORRIED ABOUT, REGARDLESS OF VITAL SIGNS OR PEWS

| Mandatory escalation pathway    |                              |
|---------------------------------|------------------------------|
| Total PEWS                      | Action                       |
| PEWS 1-3                        | Mandatory escalation pathway |
| PEWS 4-5                        |                              |
| PEWS 6-7                        |                              |
| PEWS 8+                         |                              |
| Any vital sign in the blue zone |                              |

Any treatment limitations must be documented in the patient's clinical record. A full set of vital signs must be taken, with corresponding PEWS calculated each time, at a frequency stated in hospital policy. If there is no timely response to your request for review, escalate to the next zone.

| Modification to PEWS triggers |                                   |               |                  |                          |
|-------------------------------|-----------------------------------|---------------|------------------|--------------------------|
| Vital sign (use abbreviation) | Accepted values and modified PEWS | Date and time | Duration (hours) | Name and contact details |
| Reason:                       |                                   | / /           |                  |                          |
| Reason:                       |                                   | / /           |                  |                          |
| Reason:                       |                                   | / /           |                  |                          |
| Reason:                       |                                   | / /           |                  |                          |

Local tools

Local tools  
editable section

National tools

| Revised FLACC observational pain tool |  |  |  |
|---------------------------------------|--|--|--|
| Categories                            | Scoring  |  |  |
|                                       | 0  | 1  | 2  |
| Face                                  | No expression or smile   | Occasional grimace or frown, withdrawn, disinterested; appears sad or worried  | Frequent to constant frown, clenched jaw, quivering chin; distressed looking face; expression of <i>fright or panic</i><br><i>Individualised behaviour described by family:</i>  |
| Legs                                  | Normal position or relaxed; usual muscle tone and motion to arms and legs            | Uneasy, restless, tense; occasional tremors  | Kicking, or legs drawn up; <i>marked increase in spasticity; constant tremors or jerking</i><br><i>Individualised behaviour described by family:</i>   |
| Activity                              | Lying quietly, normal position, moves easily; regular rhythmic breaths (respiration) | Squirming, shifting back and forth, tense or guarded movements; mildly agitated (head back and forth, aggression); shallow, splinting breaths (respirations); occasional sighs | Arches, rigid, or jerking; severe agitation; head banging; shivering ( <i>hot rigors</i> ); breath holding, gasping, or sharp intake of breaths; <i>severe splinting</i><br><i>Individualised behaviour described by family:</i> |
| Cry                                   | No cry (awake or asleep)   | Moans or whimpers, occasional complaint; occasional verbal outburst or grunt   | Crying steadily, screams or sobs, frequent complaints; repeated outbursts; constant grunting<br><i>Individualised behaviour described by family:</i>   |
| Consolability                         | Content, relaxed   | Reassured by occasional touching, hugging, or 'talking to'; can be distracted  | Difficult to console or comfort; pushing away caregiver; resisting care or comfort measures<br><i>Individualised behaviour described by family:</i>  |

Rate the child in each of the five measurement categories, add together, and document total pain score (0 – 10).

**Children who are awake:** Observe for at least 1-2 minutes. Observe legs and body uncovered. Reposition child or observe activity, assess body for tenseness and tone. Initiate consulting interventions if needed.

**Children who are asleep:** Observe for at least 2 minutes or longer. Observe legs and body uncovered. If possible, reposition the child. Touch the body and assess for tenseness and tone.

This tool can be used for all non-verbal children. The additional descriptors (in *italics*) are validated in children with cognitive impairment. The nurse can review with parents/caregivers the descriptors within each category. Ask the parents/caregivers if there are additional behaviours that are better indicators of their child experiencing pain. Add these behaviours to the tool in the appropriate category.

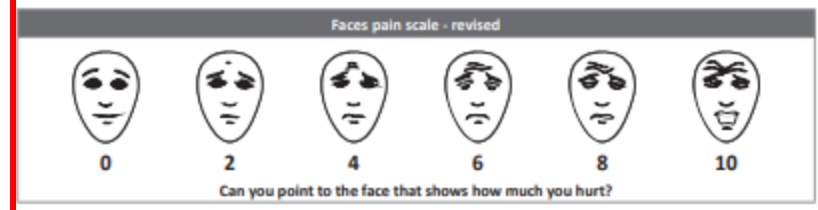
Family Name: \_\_\_\_\_  
 Given Name: \_\_\_\_\_ Gender: \_\_\_\_\_  
 AFFIX PATIENT LABEL HERE.  
 Date of Birth: \_\_\_\_\_ NHI#: \_\_\_\_\_

| Assessment of respiratory distress guide |   |  |   |
|--|---|--|---|
|  | Mild  | Moderate   | Severe  |
| <b>Airway</b>                            | <ul style="list-style-type: none"> <li>Stridor on exertion or crying</li> <li>Wheeze present</li> </ul> | <ul style="list-style-type: none"> <li>Some stridor at rest</li> <li>Wheeze marked</li> </ul>  | <ul style="list-style-type: none"> <li>Stridor at rest</li> <li>New onset of stridor</li> <li>Wheeze severe</li> <li>Silent chest</li> </ul>                                    |
| <b>Behaviour and feeding</b>             | <ul style="list-style-type: none"> <li>Normal</li> <li>Talks in sentences</li> </ul>                    | <ul style="list-style-type: none"> <li>Some or intermittent irritability</li> <li>Difficulty talking or crying</li> <li>Difficulty feeding or eating</li> </ul>      | <ul style="list-style-type: none"> <li>Increased irritability and/or lethargy</li> <li>Looks exhausted</li> <li>Unable to talk or cry</li> <li>Unable to feed or eat</li> </ul> |
| <b>Accessory muscle use</b>              | <ul style="list-style-type: none"> <li>Mild intercostal and suprasternal recession</li> </ul>           | <ul style="list-style-type: none"> <li>Moderate intercostal and suprasternal recession</li> <li>Tracheal tug</li> <li>Nasal flaring</li> <li>Head bobbing</li> </ul> | <ul style="list-style-type: none"> <li>Marked intercostal and suprasternal recession</li> </ul>   |
| <b>Other</b>                             |   | <ul style="list-style-type: none"> <li>May have brief apnoea</li> </ul>  | <ul style="list-style-type: none"> <li>Gasping, grunting</li> <li>Extreme pallor, cyanosis</li> <li>Increasingly frequent or prolonged apnoea</li> </ul>                        |

Score at the level of severest sign.  
 Note that not all features are relevant to all conditions.

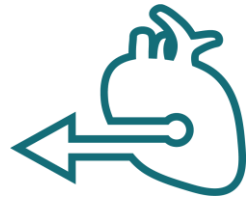
| Respiratory support mode         |                                     |                |
|----------------------------------|-------------------------------------|----------------|
| NP = Nasal prongs                | M = Face mask                       | HF = High flow |
| R = Non-rebreather mask          | C = CPAP                            | B = BPAP       |
| TH = Tracheostomy humidification | HO <sub>2</sub> = Humidified oxygen |                |

National tools



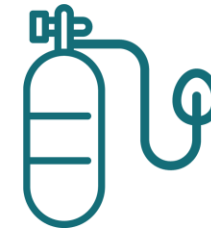
# The seven scoring vital signs

Systolic blood pressure



Respiratory rate

Central capillary refill



Oxygen

Heart rate



Oxygen saturation



Respiratory distress

# Non-scoring vital signs



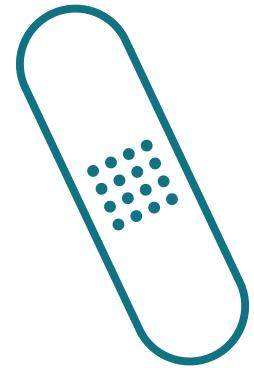
Whānau  
concern



Level of  
consciousness



Temperature



Pain

# The PEWS: a calculated score

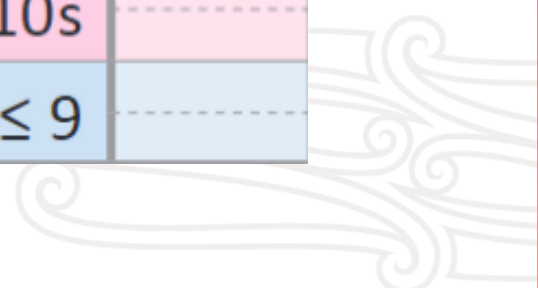
| Paediatric early warning score colour key |   |   |   |                          |
|---|---|---|---|--------------------------|
| 0   | 1 | 2 | 4 | RRT: rapid response team |

- Each vital sign parameter has coloured zones associated with a score
- The scores for each of the seven vital sign parameters are added together to give a total PEWS
- The total PEWS is used to trigger action

# Respiratory rate



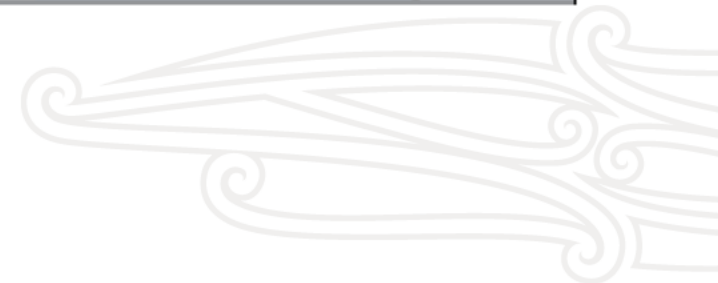
|   |           |  |
|---|-----------|--|
| <b>Respiratory Rate</b><br>(breaths/min)<br><i>mark RR with X</i> | $\geq 80$ |  |
|   | 70s       |  |
|   | 60s       |  |
|   | 50s       |  |
|   | 40s       |  |
|   | 30s       |  |
|   | 20s       |  |
|   | 10s       |  |
|   | $\leq 9$  |  |



# Respiratory rate (example taken from 12+ years PVSC)

|   |       |          |
|---|-------|----------|
| <b>Respiratory Rate</b><br>(breaths/min)<br><i>mark RR with X</i> | ≥ 35  |          |
|   | 30-34 |          |
|   | 25-29 |          |
|   | 20-24 |          |
|   | 15-19 | <b>X</b> |
|   | 12-14 |          |
|   | 10-11 |          |
|   | 5-9   |          |
|   | ≤ 4   |          |

|   |       |          |
|---|-------|----------|
| <b>Respiratory Rate</b><br>(breaths/min)<br><i>mark RR with X</i> | ≥ 35  |          |
|   | 30-34 |          |
|   | 25-29 | <b>X</b> |
|   | 20-24 |          |
|   | 15-19 |          |
|   | 12-14 |          |
|   | 10-11 |          |
|   | 5-9   |          |
|   | ≤ 4   |          |



# Respiratory distress



|  |          |  |
|--|----------|--|
| <b>Respiratory Distress</b><br><i>mark RD with X</i> | Severe   |  |
|  | Moderate |  |
|  | Mild     |  |
|  | Nil      |  |

| Assessment of respiratory distress guide   |   |  |   |
|--|---|--|---|
|  | Mild  | Moderate   | Severe  |
| <b>Airway</b>  | <ul style="list-style-type: none"> <li>• Stridor on exertion or crying</li> <li>• Wheeze present</li> </ul> | <ul style="list-style-type: none"> <li>• Some stridor at rest</li> <li>• Wheeze marked</li> </ul>  | <ul style="list-style-type: none"> <li>• Stridor at rest</li> <li>• New onset of stridor</li> <li>• Wheeze severe</li> <li>• Silent chest</li> </ul>                                    |
| <b>Behaviour and feeding</b>   | <ul style="list-style-type: none"> <li>• Normal</li> <li>• Talks in sentences</li> </ul>                    | <ul style="list-style-type: none"> <li>• Some or intermittent irritability</li> <li>• Difficulty talking or crying</li> <li>• Difficulty feeding or eating</li> </ul>        | <ul style="list-style-type: none"> <li>• Increased irritability and/or lethargy</li> <li>• Looks exhausted</li> <li>• Unable to talk or cry</li> <li>• Unable to feed or eat</li> </ul> |
| <b>Accessory muscle use</b>  | <ul style="list-style-type: none"> <li>• Mild intercostal and suprasternal recession</li> </ul>             | <ul style="list-style-type: none"> <li>• Moderate intercostal and suprasternal recession</li> <li>• Tracheal tug</li> <li>• Nasal flaring</li> <li>• Head bobbing</li> </ul> | <ul style="list-style-type: none"> <li>• Marked intercostal and suprasternal recession</li> </ul>   |
| <b>Other</b>   |   | <ul style="list-style-type: none"> <li>• May have brief apnoea</li> </ul>  | <ul style="list-style-type: none"> <li>• Gasping, grunting</li> <li>• Extreme pallor, cyanosis</li> <li>• Increasingly frequent or prolonged apnoea</li> </ul>                          |
| Score at the level of severest sign.<br>Note that not all features are relevant to all conditions. |   |  |   |



# Oxygen

|  |                   |  |
|--|-------------------|--|
| <b>Oxygen</b><br>(L/min or FiO <sub>2</sub> %)<br><i>write value</i> | ≥ 4L or ≥ 35%     |  |
|  | < 4L or < 35%     |  |
|  | Room air <b>X</b> |  |
|  | Mode              |  |
|  | High flow rate    |  |

| Respiratory support mode         |                                      |                |
|----------------------------------|--------------------------------------|----------------|
| NP = Nasal prongs                | M = Face mask                        | HF = High flow |
| R = Non-rebreather mask          | C = CPAP                             | B = BPaP       |
| TH = Tracheostomy humidification | H <sub>2</sub> O = Humidified oxygen |                |

|  |                   |   |
|--|-------------------|---|
| <b>Oxygen</b><br>(L/min or FiO <sub>2</sub> %)<br><i>write value</i> | ≥ 4L or ≥ 35%     |   |
|  | < 4L or < 35%     |   |
|  | Room air <b>X</b> | x |
|  | Mode              |   |
|  | High flow rate    |   |

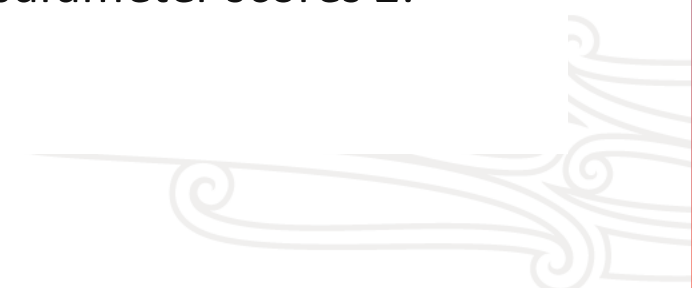
A tamariki on no respiratory support.

This parameter scores 0.

|  |                   |     |
|--|-------------------|-----|
| <b>Oxygen</b><br>(L/min or FiO <sub>2</sub> %)<br><i>write value</i> | ≥ 4L or ≥ 35%     |     |
|  | < 4L or < 35%     | 28% |
|  | Room air <b>X</b> |     |
|  | Mode              | HF  |
|  | High flow rate    | 14L |

A 7 kg tamariki on high flow therapy with an FiO<sub>2</sub> requirement of 28%.

This parameter scores 2.



|  |                   |     |
|--|-------------------|-----|
| <b>Oxygen</b><br>(L/min or FiO <sub>2</sub> %)<br><i>write value</i> | ≥ 4L or ≥ 35%     |     |
|  | < 4L or < 35%     | 21% |
|  | Room air <b>X</b> |     |
|  | Mode              | HF  |
|  | High flow rate    | 14L |

A 7 kg tamariki on high flow therapy with an FiO<sub>2</sub> requirement of 21%.

This parameter scores 2.

Please note that 21% in this context is not referring to room air. The tamariki is on high flow therapy and requires respiratory support.

|  |                   |    |
|--|-------------------|----|
| <b>Oxygen</b><br>(L/min or FiO <sub>2</sub> %)<br><i>write value</i> | ≥ 4L or ≥ 35%     | 5L |
|  | < 4L or < 35%     |    |
|  | Room air <b>X</b> |    |
|  | Mode              | M  |
|  | High flow rate    |    |

A tamariki receiving 5 L/min of oxygen via a mask.

This parameter scores 4.



# Oxygen saturation %

|  |           |  |
|--|-----------|--|
| <b>Oxygen Saturation (%)</b><br><i>write SpO<sub>2</sub></i> | $\geq 95$ |  |
|  | 91-94     |  |
|  | $\leq 90$ |  |

Document the numerical value for oxygen saturation in the relevant box of the scoring area



# Heart rate



|                            |       |
|----------------------------|-------|
| <b>Heart Rate</b><br>(bpm) | ≥ 200 |
|                            | 190s  |
|                            | 180s  |
|                            | 170s  |
|                            | 160s  |
|                            | 150s  |
|                            | 140s  |
|                            | 130s  |
|                            | 120s  |
|                            | 110s  |
|                            | 100s  |
|                            | 90s   |
|                            | 80s   |
|                            | 70s   |
|                            | 60s   |
| ≤ 59                       |       |

*mark HR with X  
write value if off  
scale*



|                            |       |
|----------------------------|-------|
| <b>Heart Rate</b><br>(bpm) | ≥ 150 |
|                            | 140s  |
|                            | 130s  |
|                            | 120s  |
|                            | 110s  |
|                            | 100s  |
|                            | 90s   |
|                            | 80s   |
|                            | 70s   |
|                            | 60s   |
|                            | 50s   |
|                            | 40s   |
|                            | ≤ 39  |

*mark HR with X  
write value if off  
scale*



|                            |       |   |
|----------------------------|-------|---|
| <b>Heart Rate</b><br>(bpm) | ≥ 180 |   |
|                            | 170s  |   |
|                            | 160s  |   |
|                            | 150s  |   |
|                            | 140s  |   |
|                            | 130s  |   |
|                            | 120s  |   |
|                            | 110s  |   |
|                            | 100s  |   |
|                            | 90s   | x |
|                            | 80s   |   |
|                            | 70s   |   |
| 60s                        |       |   |
| ≤ 59                       |       |   |

*mark HR with X  
write value if off  
scale*

|                            |       |   |
|----------------------------|-------|---|
| <b>Heart Rate</b><br>(bpm) | ≥ 180 |   |
|                            | 170s  |   |
|                            | 160s  |   |
|                            | 150s  |   |
|                            | 140s  |   |
|                            | 130s  |   |
|                            | 120s  |   |
|                            | 110s  |   |
|                            | 100s  |   |
|                            | 90s   |   |
|                            | 80s   | x |
|                            | 70s   |   |
| 60s                        |       |   |
| ≤ 59                       |       |   |

*mark HR with X  
write value if off  
scale*



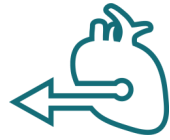
# Central capillary refill



|  |              |   |
|--|--------------|---|
| <b>Central Capillary Refill</b><br><i>mark CR with X</i> | $\geq 3$ sec |   |
|  | $< 3$ sec    | x |



# Blood pressure



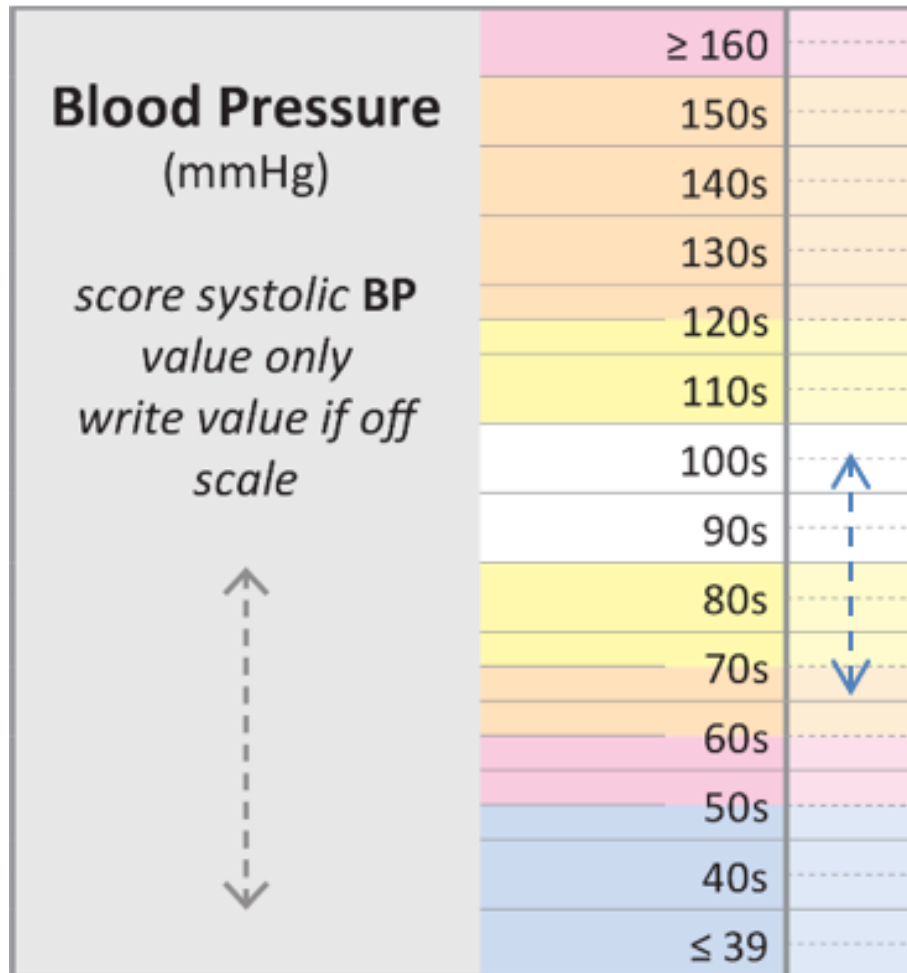
|   |       |
|---|-------|
| <b>Blood Pressure</b><br>(mmHg)<br><br><i>score systolic BP</i><br><i>value only</i><br><i>write value if off</i><br><i>scale</i> | ≥ 150 |
|   | 140s  |
|   | 130s  |
|   | 120s  |
|   | 110s  |
|   | 100s  |
|   | 90s   |
|   | 80s   |
|   | 70s   |
|   | 60s   |
|   | 50s   |
|   | 40s   |
|   | 30s   |
|   | 20s   |
| ≤ 19  |       |



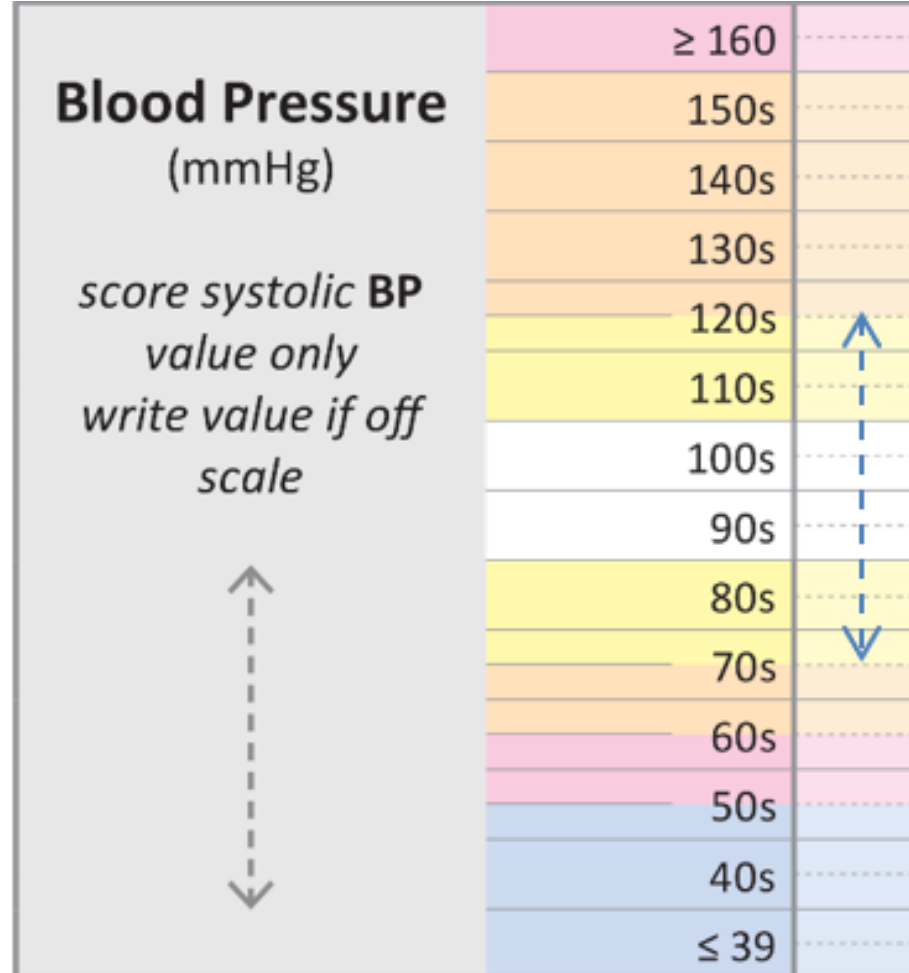
|   |       |
|---|-------|
| <b>Blood Pressure</b><br>(mmHg)<br><br><i>score systolic BP</i><br><i>value only</i><br><i>write value if off</i><br><i>scale</i> | ≥ 190 |
|   | 180s  |
|   | 170s  |
|   | 160s  |
|   | 150s  |
|   | 140s  |
|   | 130s  |
|   | 120s  |
|   | 110s  |
|   | 100s  |
|   | 90s   |
|   | 80s   |
|   | 70s   |
|   | 60s   |
| 50s   |       |
| 40s   |       |
| ≤ 39  |       |







BP = 105/70, white zone, score 0



BP = 125/75, orange zone, score 2

# Modifications box

| Vital sign<br>(use abbreviation)   | Accepted values<br>and modified PEWS                               | Date<br>and time      | Duration<br>(hours)     | Name and<br>contact details |
|--|--|-----------------------|-------------------------|-----------------------------|
| Oxygen<br>saturation   | $\geq 91\%$ score = 0<br>85–90% score = 1<br>$\leq 85\%$ score = 2 | 20/ 3 /21<br>11:30 am | Throughout<br>admission | N. Rivera #6132             |
| Reason: Normal saturations for child is 91% due to cyanotic congenital heart disease |  |                       |                         |                             |

| Vital sign<br>(use abbreviation)                      | Accepted values<br>and modified PEWS                                       | Date<br>and time      | Duration<br>(hours) | Name and<br>contact details |
|---|--|-----------------------|---------------------|-----------------------------|
| HR  | 50–109 score = 0<br>40–49, score = 1<br>30–39, score = 2<br>< 30 score = 4 | 20/ 3 /21<br>11:30 am | Until<br>discharge  | D. Ramoray #2611            |
| Reason: Competitive rower, resting HR of 50 when well |  |                       |                     |                             |



# Modifications

- Shouldn't be used to stop an unwell tamariki continuing to generate an elevated PEW score
- Usually only made to one parameter at a time
- Relevant to all staff using the charts
- Should be made following local procedure
- Usually be at the direction of the SMO

# Modifications



Whānau concern



|                              |  |  |  |
|------------------------------|--|--|--|
| <b>PEWS TOTAL</b>            |  |  |  |
| <b>Whānau concern: Y/N/A</b> |  |  |  |

**ESCALATE CARE FOR ANY PATIENT YOU OR THEIR WHĀNAU ARE WORRIED ABOUT, REGARDLESS OF VITAL SIGNS OR PEWS**



# Level of consciousness

|   |              |   |
|---|--------------|---|
| <b>Level Of Consciousness</b><br><i>mark LOC with X</i> | Alert        | X |
|   | Voice        |   |
|   | Pain         |   |
|   | Unresponsive |   |

|   |              |        |
|---|--------------|--------|
| <b>Level Of Consciousness</b><br><i>mark LOC with X</i> | Alert        | Asleep |
|   | Voice        |        |
|   | Pain         |        |
|   | Unresponsive |        |



# Temperature



|  |           |
|--|-----------|
| <b>Temperature</b><br>(°C)<br><br><i>mark Temp with X</i><br><i>write value if off scale</i> | $\geq 40$ |
|  | 39s       |
|  | 38s       |
|  | 37s       |
|  | 36s       |
|  | $\leq 35$ |



# Pain



|  |          |  |
|--|----------|--|
| <b>Pain Score</b><br><i>write score (0-10)</i> | Rest     |  |
|  | Movement |  |

| <b>Age-based PVSC</b> | <b>Numerical</b> | <b>Faces pain scale</b> | <b>Revised FLACC</b> |
|-----------------------|------------------|-------------------------|----------------------|
| 0–11 months           | No               | No                      | Yes                  |
| 1–4 years             | No               | Yes                     | Yes                  |
| 5–11 years            | Yes              | Yes                     | Yes                  |
| 12+ years             | Yes              | Yes                     | Yes                  |



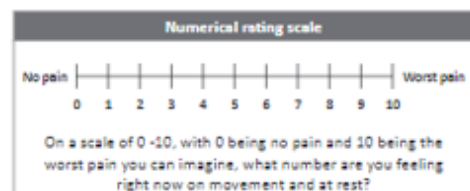


## National tools

| Assessment of respiratory distress guide |   |  |   |
|--|---|--|---|
|  | Mild  | Moderate   | Severe  |
| <b>Airway</b>                            | <ul style="list-style-type: none"> <li>Stridor on exertion or crying</li> <li>Wheeze present</li> </ul> | <ul style="list-style-type: none"> <li>Some stridor at rest</li> <li>Wheeze marked</li> </ul>  | <ul style="list-style-type: none"> <li>Stridor at rest</li> <li>New onset of stridor</li> <li>Wheeze severe</li> <li>Silent chest</li> </ul>                                    |
| <b>Behaviour and feeding</b>             | <ul style="list-style-type: none"> <li>Normal</li> <li>Talks in sentences</li> </ul>                    | <ul style="list-style-type: none"> <li>Some or intermittent irritability</li> <li>Difficulty talking or crying</li> <li>Difficulty feeding or eating</li> </ul>      | <ul style="list-style-type: none"> <li>Increased irritability and/or lethargy</li> <li>Looks exhausted</li> <li>Unable to talk or cry</li> <li>Unable to feed or eat</li> </ul> |
| <b>Accessory muscle use</b>              | <ul style="list-style-type: none"> <li>Mild intercostal and suprasternal recession</li> </ul>           | <ul style="list-style-type: none"> <li>Moderate intercostal and suprasternal recession</li> <li>Tracheal tug</li> <li>Nasal flaring</li> <li>Head bobbing</li> </ul> | <ul style="list-style-type: none"> <li>Marked intercostal and suprasternal recession</li> </ul>   |
| <b>Other</b>                             |   | <ul style="list-style-type: none"> <li>May have brief apnoea</li> </ul>  | <ul style="list-style-type: none"> <li>Gesping, grunting</li> <li>Extreme pallor, cyanosis</li> <li>Increasingly frequent or prolonged apnoea</li> </ul>                        |

Score at the level of severest sign.  
Note that not all features are relevant to all conditions.

| Respiratory support mode         |                                     |                |
|----------------------------------|-------------------------------------|----------------|
| NP = Nasal prongs                | M = Face mask                       | HF = High flow |
| R = Non-rebreather mask          | C = CPAP                            | B = BPAP       |
| TH = Tracheostomy humidification | HQ <sub>1</sub> = Humidified oxygen |                |



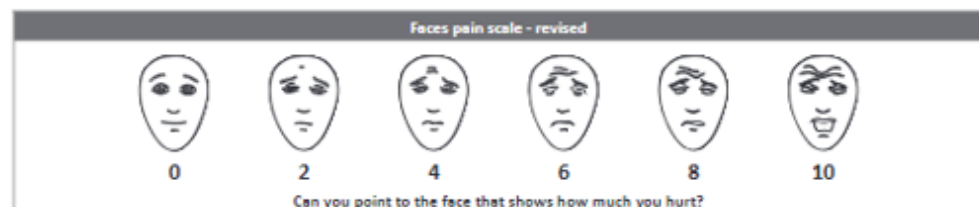
| Revised FLACC observational pain tool |  |  |  |
|---------------------------------------|--|--|--|
| Categories                            | Scoring  |  |  |
|                                       | 0  | 1  | 2  |
| <b>Face</b>                           | No expression or smile   | Occasional grimace or frown, withdrawn, disinterested; appears sad or worried  | Frequent to constant frown, clenched jaw, quivering chin; distressed looking face; expression of fight or panic  |
| <b>Legs</b>                           | Normal position or relaxed; usual muscle tone and motion to arms and legs            | Uneasy; restless, tense; occasional tremors  | Kicking, or legs drawn up; marked increase in spasticity; constant tremors or jerking  |
| <b>Activity</b>                       | Lying quietly, normal position, moves easily; regular rhythmic breaths (respiration) | Squirming, shifting back and forth, tense or guarded movements; mildly agitated (head back and forth, aggression); shallow, splinting breaths (respirations); occasional sighs | Arches, rigid, or jerking; severe agitation; head banging; shivering (not rigors); breath holding, gasping, or sharp intake of breaths; severe splinting |
| <b>Cry</b>                            | No cry (awake or asleep)   | Moans or whimpers, occasional complaint; occasional verbal outburst or grunt   | Crying steadily, screams or sobs, frequent complaints; repeated outbursts; constant grunting   |
| <b>Consolability</b>                  | Content, relaxed   | Reassured by occasional touching, hugging, or talking to; can be distracted  | Difficult to console or comfort; pushing away caregiver; resisting care or comfort measures  |

Rate the child in each of the five measurement categories, add together, and document total pain score (0-10).

**Children who are awake:** Observe for at least 1-2 minutes. Observe legs and body uncovered. Reposition child or observe activity, assess body for tenseness and tone. Initiate consoling interventions if needed.

**Children who are asleep:** Observe for at least 2 minutes or longer. Observe legs and body uncovered. If possible, reposition the child. Touch the body and assess for tenseness and tone.

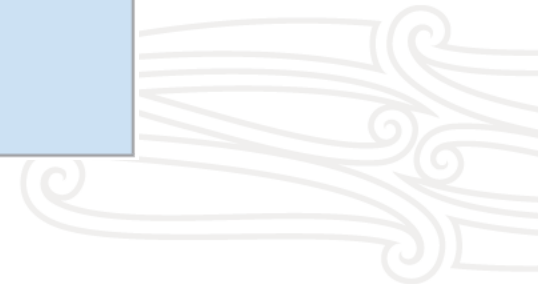
This tool can be used for all non-verbal children. The additional descriptors (in italics) are validated in children with cognitive impairment. The nurse can review with parents/caregivers the descriptors within each category. Ask the parents/caregivers if there are additional behaviours that are better indicators of their child experiencing pain. Add these behaviours to the tool in the appropriate category.



# Escalation pathway

|                   |          |          |
|-------------------|----------|----------|
| <b>PEWS TOTAL</b> | <b>3</b> | <b>4</b> |
|-------------------|----------|----------|

| Mandatory escalation pathway    |                        | NAME OF DHB |
|---------------------------------|------------------------|-------------|
| Total PEWS                      | Action                 |             |
| PEWS 1-3                        | Local escalation steps |             |
| PEWS 4-5                        | Local escalation steps |             |
| PEWS 6-7                        |                        |             |
| PEWS 8+                         |                        |             |
| Any vital sign in the blue zone |                        |             |



# Partial set of observations

Mark with a plus+

|                   |           |          |          |
|-------------------|-----------|----------|----------|
| <b>PEWS TOTAL</b> | <b>3+</b> | <b>4</b> | <b>4</b> |
|-------------------|-----------|----------|----------|

Still apply to the  
escalation  
pathway

This should be an  
exception

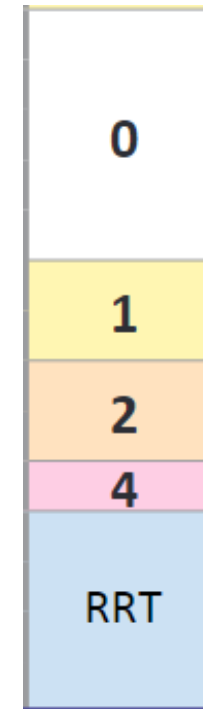
# Rapid response team calls

| Heart Rate<br>(bpm) | ≥ 200 |  |
|---------------------|-------|--|
|                     | 190s  |  |
|                     | 180s  |  |
|                     | 170s  |  |
|                     | 160s  |  |
|                     | 150s  |  |
|                     | 140s  |  |
|                     | 130s  |  |
|                     | 120s  |  |
|                     | 110s  |  |
|                     | 100s  |  |
|                     | 90s   |  |
|                     | 80s   |  |
|                     | 70s   |  |
| 60s                 | X     |  |
| ≤ 59                |       |  |

*mark HR with X  
write value if off  
scale*

If any of the tamariki's vital signs fall into the blue rapid response team (RRT) zone, it is a **mandatory** requirement for you to make a RRT call **immediately**

**[Insert details of your local RRT calling process]**



# Questions

- What are the differences between the new chart and what we currently have?
- How do we educate users of the charts to any changes?

