

## Purpose

The purpose of this document is to provide clear standardized instructions for use of the Pediatric Early Warning Systems (PEWS) VITAL SIGN RECORD in emergency and urgent care settings.

## Abbreviations

Use only abbreviations that are included in the legend on the document and do not use any abbreviations or symbols that are on the “DO NOT USE” list (e.g. @, <, >) from Institute of Safe Medication Practice (ISMP)-Canada

Abbreviations used in this document:

BiPAP	Bi-level Positive Airway Pressure	NRB	Non-rebreather mask	N	No
°C	Degrees Celsius	FT	Face Tent	N/A	Not Applicable
cm	Centimeter(s)	BB	Blow by	RA	Room Air
CPAP	Continuous Positive Airway Pressure	NN	Nurses' Notes	MRP	Most Responsible Practitioner
SM	Simple Mask	NP	Nasal prongs	NN	Nurses Notes
NP	Nasal Prongs	M	Mask	NP	
HHHF	Heated Humidified High Flow	MAP	Mean Arterial Pressure	q_h	Every ___ hours
PRB	Partial Rebreather Mask	mL	Milliliters		

**Note:** If your Health Authority has standards on Clinical Abbreviations, please follow those.

## Front Side of Document / Patient Identification

Addressograph or label PEWS VITAL SIGN RECORD in top right corner

## Graphic Section

- Date: RECORD** date at top **Left** of page ensuring day, month and year are included (e.g. 12 SEP 2012 or SEP 12, 2012) spelling out the month using first 3 letters
- INITIAL** in the space provided below the time. Ensure that *full signature* has been recorded on the signature identification record located in the PEWS Vital Sign Record.
- Time: RECORD** the actual time of the assessment or intervention in the assigned space running across the top of the page. Use 24-hour clock format e.g. 0030
- RESPIRATORY SECTION:**
  - RECORD** respiration rate using a • symbol. **PLEASE NOTE:** draw a line to connect each subsequent rate symbol to create a visual trend
  - RECORD** oxygen saturations percentage
  - RECORD** any supplemental O<sub>2</sub> concentration delivered in litres per minute or oxygen percentage delivered in appropriate spaces
  - RECORD** supplemental O<sub>2</sub> mode of delivery (Room Air [RA], Nasal Prongs [NP], Mask [M], Blow By [BB], Heated Humidified High Flow Therapy [HHHF])
  - For Patients receiving Heated Humidified High Flow Therapy (HHHF). **Record** the actual numerical value of oxygen % being delivered in the supplemental O<sub>2</sub> concentration box. Note the prescribed l/min flow in the mode of delivery box, noting ‘HHHF’ in front of ‘mode of delivery’. Patients receiving HHHF will be scored based on the highest score within the respiratory category as per routine PEWS scoring.

**PLEASE NOTE:** The use of oxygen delivery via the blow by method is not recommended, as it is difficult to determine the exact percentage of oxygen and the actual dose received by the patient. If blow by method is used please document in the nurse's notes and provide clinical rationale.

**RECORD** using ✓ symbol to indicate level of respiratory distress per Canadian Triage and Acuity Scale (CTAS) manual 2013 (p.42) definitions:

**Severe:** Excessive work of breathing, cyanosis; lethargy, confusion, inability to recognize caregiver, decreased response to pain; single word or no speech; tachycardia or bradycardia; tachypnea or bradypnea; apnea irregular respirations; exaggerated retractions, nasal flaring, grunting; absent or decreased breath sounds; upper airway obstruction (dysphagia, drooling, muffled voice, labored respiration's and stridor); unprotected airway (weak to absent cough or gag reflex); poor muscle tone.

**Moderate:** Increased work of breathing, restlessness, anxiety, or combativeness; tachypnea; hyperpnea; mild increased use of accessory muscles, retractions, flaring, speaking phrases or clipped sentences, stridor, but airway protected, prolonged expiratory phase.

**Mild:** *Dyspnea; tachypnea; shortness of breath on exertion; no obvious increased work if breathing; able to speak in sentences; stridor without obvious airway obstruction; mild shortness of breath on exertion; frequent cough.*

f. CALCULATE RESPIRATORY CATEGORY PEWS SCORE:

Document assessment findings on the PEWS VITAL SIGN RECORD for: respiratory rate, supplemental oxygen concentration delivery and respiratory distress. The Respiratory PEWS score is calculated based on the most severe score in the category. The maximum score a patient can receive for the respiratory category is 3. Always score using the highest number in each category.

PEWS Scoring Legend: 0 1 2 3

See red circled example →

g. RECORD PEWS score for respiratory category in the appropriate box

**PLEASE NOTE:** When caring for patients with Asthma PRAM score will be checked off in the PEWS VITAL SIGN RECORD in the CARE TOOLS section.

Date: JULY 19/18		Initials: DS DS DS		
Time: 0600 0730 0800				
Respiratory	Respiratory Rate (1 minute)			
	Resp: •			
	O <sub>2</sub> Saturation (%)	96	92	97
	Supplemental O <sub>2</sub> Concentration Delivered	<3L or 30% 10%	≥3L or 30% 10%	≥6L or 40% 30%
	Mode of Delivery	NP	NP	NP
	Respiratory Distress	None Mild ✓	Moderate ✓	Severe ✓
	PEWS Score for Respiratory (record most severe score)	1	2	2

5. CARDIOVASCULAR SECTION:

a. RECORD apical heart rate using • symbol. PLEASE NOTE: draw use a line to connect each subsequent rate symbol to create a visual trend

b. RECORD blood pressure (BP) using √ symbol (BP is measured and documented but not included in the score).

Note: Indicate limb used for BP measurement (if other than arm), and patient position using the following symbols:



- c. **RECORD** mean arterial pressure (MAP). Note: calculate MAP use the following equation:  

$$\text{MAP} = \frac{\text{Systolic Pressure} + (2 \times \text{Diastolic Pressure})}{3}$$
- d. **RECORD** peripheral capillary refill time in seconds (by pressing lightly on a peripheral site such as a nail). Normal capillary refill time is less than 2 seconds.
- e. **INDICATE** skin colour using a ✓ symbol in the appropriate box.
- f. **CALCULATE** CARDIOVASCULAR **CATEGORY** PEWS SCORE (refer instructions above)
- g. **RECORD** PEWS score for the cardiovascular section in the appropriate box
6. **BEHAVIOUR SECTION:**
- a. **INDICATE** assessed patient behaviour using a ✓ symbol in the appropriate box
- Behaviour is scored exactly as observed. If you are unsure about what is expected, please review the patient's behaviour with their family/caregiver and/or a more experienced health care provider
- PLAYING/APPROPRIATE-** is the patient behaving as expected based on the current circumstances and their child's developmental level
- SLEEPING-** is the patient sleeping?
- IRRITABLE-** is the patient inconsolable, restless, or agitated?
- LETHARGIC/CONFUSED-** does the patient have an altered mental status? Are they confused, disoriented, or presenting with severe drowsiness?
- REDUCED RESPONSE TO PAIN-** does the patient have an altered mental status? Do they respond only to pain?
- b. **CALCULATE** BEHAVIOUR CATEGORY PEWS SCORE (refer to 4. e instructions)
- c. **RECORD** PEWS score for the behaviour section in the appropriate box
7. **OTHER PEWS INDICATORS (score of 2 for each factor identified):**
- a. **INDICATE** if the patient has **unexpected** persistent vomiting following surgery using a ✓ symbol in the corresponding box.
- Postoperative nausea and vomiting (PONV) is defined as any nausea, retching, or vomiting occurring during the first 24–48 hours after surgery in inpatients. PONV is common complication for pediatric patients, and is often expected. If you are unsure about what is expected, please review with a more experienced health care provider (Hohne, 2014; Pierre & Whelan, 2013).
- b. **INDICATE** if the patient is receiving a bronchodilator every 20 minutes using a ✓ symbol in the corresponding box.
8. **TOTAL PEDIATRIC EARLY WARNING SYSTEM (PEWS) SCORE:**
- a. To obtain a total PEWS score, **ADD** the category scores together (respiratory + cardiovascular + behaviour + other PEWS indicators: persistent vomiting following surgery + bronchodilator every 20 minutes = maximum achievable score of 13).
- b. **CALCULATE** and **RECORD total PEWS score** with every set of vital signs. **PLEASE NOTE** if PEWS score is zero please record **0**

9. **TEMPERATURE:**

- a. **RECORD** temperature in celcius using • symbol. Indicate route: oral (O), axilla (A), rectal (R), temporal (T) and esophageal (E). **PLEASE NOTE:** draw use a line to connect each subsequent rate symbol to create a visual trend.

10. **SITUATIONAL AWARENESS FACTORS:**

- a. With each set of vital signs **ASSESS** patient for situational awareness factors. Place a ✓ symbol for the situational awareness factors that apply to the patient.
  - i. **Patient/Family/Caregiver Concern:** This factor is not the same as presenting complaint or frustration over wait times. It indicates increasing concern expressed regarding a child’s condition, a worsening or changing state. Parents offer valuable insight into their child’s normal state, pain and comfort.
  - ii. **Unusual Therapy:** unfamiliarity with a medication or protocol in the department or by the nurse, or a staff member who is new or providing relief to the area. Applying the unusual therapy bring increased awareness to patient care, support and planning.
  - iii. **Watcher Patient:** A patient you identify as requiring more frequent observation. Most commonly used factor. Can capture risk not captured solely by score e.g. surgical risk, abnormal labs or neurovital signs and mental health concerns.
  - iv. **Communication Breakdown:** describes clinical situations where there is a lack of clarity, break or difficulty in communication e.g. in treatment decisions, reporting of results, patient planning, designation of responsibilities, language barriers.
  - v. **PEWS Score 2 or higher:** PEWS score greater than or equal to 2 should trigger increased awareness and action.

11. If escalation process is activated, **RECORD** time and document escalation action in the nurse’s notes. **FOLLOW** escalation aid prompts to access supports:

- a. **0 – 1:** continue to monitor and document as per orders and routine protocols;
- b. **2 or any one of the 5 situational awareness factors:** Review with a more experienced health care provider. Escalate if further consultation required or resources do not allow. Continue to monitor as per orders/protocols.
- c. **3:** Increase frequency of assessments and documentation as per plan from consultation
- d. **4 and/or score increases by 2 after interventions:** Notify MRP or delegate or emergency room physician. Consider pediatrician consult if signs of increasing deterioration MRP or delegate to communicate a plan of care. Increase assessments. Reassess adequacy of resources and escalate to meet deficits.
- e. **5 – 13 or score of 3 in any one category:** Immediate assessment by MRP or delegate or emergency room physician (and pediatrician if available). MRP or delegate to communicate a plan of care. Increase nursing care with increasing interventions as per plan. Consider or internal or external transfer to higher level of care.

12. In the PEWS Escalation Process Activated box, **DOCUMENT** the time the escalation process was activated. Document any additional notes in the NN. If the escalation process is not activated document rationale. **DOCUMENT** in the nursing notes on Pediatric ENAR. **RECORD** escalation actions taken and responses in greater detail as needed.

## Reverse Side of Document / Care Tools

1. **Time: RECORD** the actual time of the assessment or intervention in the assigned space running across the top of the page. Use 24-hour clock format e.g. 003
2. **SCREEN** for Sepsis using the Provincial Sepsis Screening Tool (Emergency/Urgent Care)- “Could This Child Have Sepsis”  
RECORD using a ✓ symbol to INDICATE the sepsis screen was completed. DOCUMENT in the nursing notes on the Pediatric ENAR.
3. **RECORD** the pain score numerically. Write the name of the tool, noting the location of the pain in the space provided. If more space is required document NN and record observations in the nurse’s notes.
4. If the child has received sedation, follow your Health Authority standards for assessment and documentation. **RECORD** the patient’s level of arousal.
5. **RECORD** the End Tidal Carbon Dioxide (Et CO<sub>2</sub> or capnography) reading \_\_\_\_ mmHg
6. **RECORD** Bedside glucose/Glucometer in \_\_\_\_\_ mmol/L

## Neurological

1. **ASSESS** Neurovital signs as ordered or clinically indicated.
2. **Pupils: RECORD** pupil size using guide located on the bottom left corner of form. **RECORD** pupillary response using the following letters to indicate **B** = Brisk, **S** = Sluggish, and/or **F** = Fixed under the corresponding time column.
3. **Glasgow Coma Scale (GCS): RECORD** using ✓ symbol to indicate the score for eye, verbal and motor response under the time column when the assessment was completed.
4. **RECORD** total score for GCS in the total score box.
5. **Muscle Strength: RECORD** numeric score in appropriate box for each limb under corresponding time column.
6. **Color, Sensation and Warmth of Extremities: RECORD** using ✓ symbol to indicate Normal or **NN** to indicate that there is further documentation in the Nursing Notes section of the ENAR
7. **Bladder Function: RECORD** using ✓ symbol to indicate Normal or **NN** to indicate that there is further documentation in the Nursing Notes section of the ENAR.

## Document Creation / Review

Adapted from BC Children’s Hospital by Child Health BC

Create Date: December 31, 2013

Revision Date: January 18, 2018

## References

- American Heart Association. (2012). *Pediatric emergency assessment, recognition, and stabilization (PEARS), provider manual*. South Deerfield, MA: Author.
- BC Children's Hospital. (2013, December 31). *Instructions for use of BCCH inpatient flowsheet*.
- Brady, P.W. et al. (2013). Improving situational awareness to reduce unrecognized clinical deterioration and serious safety events. *Pediatrics*, 131(1), e298-e308.
- Canadian Association of Emergency Physicians. (2013, November). *Canadian triage and acuity scale (CTAS) participant manual* (version 2.5b).
- Heart & Stroke Foundation of Canada. (2011). *Pediatric advanced life support provider manual*. Ottawa, ON: Author.
- Hohne, C. (2014). Postoperative nausea and vomiting in pediatric anesthesia. *Current Opinion in Anesthesiology*, 27(3), 303-308.
- Monaghan, A. (2005). Detecting and managing deterioration in children. *Paediatric Nursing*, 17(1), 32–35.
- National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. (2004). The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Pediatrics*, 114 (Issue 2 Suppl), 555-576.
- Pierre, S., & Whelan, R. (2013). Nausea and vomiting after surgery. *Continuing Education in Anaesthesia, Critical Care & Pain*, 13(1), 28-32.

## Appendix A: Disclaimer

Child Health BC develops evidence-based clinical support documents that include recommendations for the care of children and youth across British Columbia. These documents are intended to give an understanding of a clinical problem, and outline one or more preferred approaches to the investigation and management of the problem. These documents are for guidance only and not intended as a substitute for the advice or professional judgment of a health care professional, nor are they intended to be the only approach to the management of a clinical problem. Healthcare professionals should continue to use their own judgment and take into consideration context, resources and other relevant factors. Neither Provincial Health Services Authority nor Child Health BC assume any responsibility or liability from reliance on or use of the documents.