Pediatric Early Warning System (PEWS)
EHR PROTOCOL

Summary of Changes

	NEW	Previous
All Sites	Documentation of PEWS using Cerner electronic health record (EHR)	
VCH		
PHC		
PHSA		

Pediatric Early Warning System (PEWS)
EHR PROTOCOL

1. Introduction

1.1. Focus

a. The Pediatric Early Warning System (PEWS) is an evidence based system designed to support the early recognition, mitigation, notification, and response for the pediatric patient identified **at risk of deterioration**. PEWS is based on the principle that patient deterioration can be seen through subtle changes in several **PEWS criteria** and **situational awareness parameters** as well as large changes within a single criteria/parameter.

b. This protocol facilitates calculation of the PEWS score and outlines actions that are triggered with each score. It aims to reduce the risk of increased hospital stay, prolonged recovery, disability, or death due to failure to recognize and manage a worsening patient's condition.

c. PEWS does not apply to the recognition of deterioration and care in adults (see Modified Early Warning System (MEWS) Protocol), newborns admitted under perinatal services, patients in critical care areas, ambulatory, short stays (less than 4 hours) in Post Anaesthetic Care Units (PACU), BCCH ED patients with Asthma Exacerbation, BCCH Healthy Minds or those in the final stages of a terminal illness. See Appendix A for a complete list of alert suppression inclusion or exclusion criteria.

1.2. Health Organization Site Applicability

This protocol applies to all Emergency and in-patient pediatric patient care areas using the CST Cerner electronic health record (EHR).

1.3. Practice Level

Conducting physical assessments, vital sign measurements and PEWS scoring are foundational level competencies of registered nurses (RN), licensed practical nurses (LPN) and registered psychiatric nurses (RPN).

All staff complete Children and Youth at Risk of Clinical Deterioration (PEWS) (Course ID #6374 on the Learning Hub) upon hire and review at needed and/or utilize BC PEWS Refresher Course (Course ID #19005) as needed to maintain competency. BC PEWS in ED (course ID #17618) is available for ED staff. Additional courses for PEWS for CST learning include CST Cerner- Nurse: Early Warning System and Sepsis #16525, CST ED Skill Sharpener: ED PEWS #21843, UPCC Nurse: Early Warning Systems #24753.

In areas where various levels of care providers (RPN, LPN, Care Aides, student nurses, employed student nurses) are assigned to patients, care of a deteriorating patient will be assumed by the RN.

1.4. Definitions

Alert suppression refers to no alerts firing. Alerts are suppressed by encounter type, location, timeframe, PowerPlans, and orderables. See Appendix A for details.

Clinician refers to Nurses (RN, RPN, and LPN) and Allied Health Professionals.

(Patient) **deterioration/patient at risk** is determined by a single change or set of changes in vital signs and/or situational awareness factors, which suggest a worsening state in condition or function. All acute

care patients are at risk for deterioration. However, some are at higher risk because of the complexity of illness, underlying comorbidities, and age. In addition, clinical deterioration can occur at any point in a patient's illness, but particularly during vulnerable periods such as i) Following an emergency admission to hospital; ii) Before or after surgery; iii) During treatments or procedures; iv) During recovery from a critical illness or v) Exacerbation of complex and multiple co-morbidities.

Medical Staff/Most Responsible Care Provider refers to Physicians, Dentists, Nurse Practitioners and Midwives.

Pediatric Early Warning System (PEWS) Score: Relevant patient assessment findings for behaviour, respiratory and cardiovascular parameters, as well as persistent vomiting following surgery and use of bronchodilators every 20 minutes are collected, documented, and summated into a score. The score can be used to identify patient physical deterioration at a single point in time or through trend monitoring, to optimize chances for early intervention. See Table 1a for details of behavior, respiratory and cardiac parameters.

Situational Awareness Factors: Awareness of the factors associated with the risk of pediatric clinical deterioration. For PEWS this consists of 5 risk factors: Patient/Family/Caregiver Concern, Watcher Patient, Communication Breakdown, Unusual Therapy, and PEWS Score 2 or higher**.**

- **Patient/Family/Caregiver Concern** is a concern voiced about a change in the patient's status or condition (e.g. concern has the potential to impact immediate patient safety, family states the patient is worsening or the patient is not behaving as they normally would).
- **Communication Breakdown** describes clinical situations where there is a lack of clarity about treatment, plan, responsibilities, conversation outcomes, and language barriers.
- **Unusual** Therapy refers to unfamiliarity with a medication or protocol in the department by the health care provider (e.g. new and/or low frequency and/or high risk medication or process). Applying the unusual therapy brings increased awareness to patient care, support and planning.
- **"Watcher'' Patient:** a patient that you identify as requiring increased observations (e.g. unexpected responses to treatments, child different from "normal", surgical risk, abnormal lab results, abnormal neurovitals, aggressive patient, "certified" patient, over/under hydration, pain, oedema, "gut" feeling).
- **PEWS score 2 or higher in any category** should trigger increased awareness, notification, planning, assessment, and resource review.

SBAR: The Situation-Background-Assessment-Recommendation (SBAR) technique provides a framework for communication between members of the health care team about a patient's condition. SBAR is an easy-to-remember, concrete mechanism useful for framing any conversation, especially critical ones, requiring a clinician's immediate attention and action. It allows for an easy and focused way to set expectations for what will be communicated and how between members of the team, which is essential for developing teamwork and fostering a culture of patient safety.

1.5. Need to Know

a. PEWS scores are calculated with each vital sign assessments. Clinician to complete patient assessment and documentation of a full set of vital signs, observations of the patient, and situational awareness factors. All documentation should be completed at the time care is provided. PEWS considers all the patient's recorded assessment findings together, not just a single assessment finding in isolation.
NOTE: Late documentation will result in delay of alert notification and possibly escalation of care.

b. PEWS score (and/or components informing a PEWS score) and situational awareness factors are shared and discussed at points of transfer and handover.

c. A single parameter score of 3 will trigger an alert (e.g. a score of 3 for HR). A multiparameter score greater than or equal to 3 will trigger an alert (e.g. a score of 1 for respiratory, 1 for cardiovascular, *1 for behaviour will trigger an alert). PEWS alerts will only occur for patients under age 17 years.* (Refer to MEOWSS for patients admitted under perinatal services or MEWS for patients over 17 years of age).

d. Clinicians will only receive an alert if the score is 3 or above AND is higher than the previous score. If the score is the same or lower, then the alert will be suppressed for 4 hours.

e. When PEWS score increases by 2 or if heart is in critical PEWS score of 3; screen for sepsis.

f. For patients on High Flow Oxygen, Supplement O2 Concentration Score is determined by the FiO2 they are on. Oxygen Flow Rate is intended for patients on nasal prongs or mask. For patients on High Flow Oxygen, document High Flow Oxygen 'Flow Rate' in Ventilation Assessment iView section.

g. Escalation of care involves recognition, communication and a graded response strategy for patients with findings of clinical deterioration. See 2.1.3 for additional detail.

h. For any action taken and not taken in response to an identified risk as per PEWS must be documented with clinical reasoning and rationale and a plan for re-assessment.

i. The PEWS <u>does not</u>
   i. Automatically notify the Most Responsible Medical Staff or Rapid Response Team
   ii. Replace calling a Code Blue.
   iii. Prohibit contacting the Most Responsible Medical Staff for immediate review of the deteriorating patient.

j. The application of the recommendations in this protocol does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their family.

2. Protocol

2.1. Identification of Patients at Risk for Deterioration

2.1.1 Emergency/Urgent Care Setting – Nurse	*Rationale*
a. At **TRIAGE** complete a full set of vital signs and calculate the **PEWS and CTAS** scores. **At BCCH only**: due to specialized pediatric population and quick triage workflow, TRIAGE will include vital signs and CTAS. PEWS and full set of vitals signs will be done with FIRST ASSESSMENT for all Orca Bay patients. Turtle Bay patients will have PEWS completed if/when noted deterioration and moved to higher level of care. **Note:** A patient requiring **EMERGENT** or **RESUSCITATION** level of care may not have a PEWS score completed at triage. If the child responds positively to treatment, applying a PEWS score can be considered at any point. Children who continue to be in a decompensated or resuscitated state should be managed according to site procedures and physician orders. Referring to the Escalation aid (red zone) may offer useful support and recommendations in care, planning, consultation and transfer.	*Establishes a baseline and supports the assignment of a CTAS score* *PEWS and the Escalation Aid are not a substitute for clinical judgment but rather tools to aid you in identifying patients at risk, and accessing resources to mitigate that risk as soon as possible*
b. **IDENTIFY** any situational awareness factors present for your patient. (e.g.. patient/family/caregiver concern, watcher patient, communication breakdown, unusual therapy)	
c. In the event of a PEWS Alert review and follow the escalation aid within the alert. **VERBALLY** report identified at risk patients using SBAR and document time of escalation and steps taken in the health record.	*Communication for rest of health care team*
d. **REPORT** the PEWS to the most responsible RN when the patient is moved into a care area.	
e. RN responsible for patient to conduct a primary and secondary **ASSESSMENT**. Including Vital Signs and PEWS observations.	*Establishes a baseline and trending of vital signs*
f. **DOCUMENT** your patient's assessment at the bedside, including the PEWS Score and any identified situational awareness factors. **RE-ASSESS** your patient per the frequency identified in the physician orders, care plan, escalation aid for your agency and Health Organization specific guidelines.	*Communication for rest of health care team* *Ongoing re-assessments to identify early signs of clinical deterioration and support mitigation strategies*

2.1.2 Admitted Inpatient Setting –Nurse	*Rationale*
a. Prior to shift handover **REVIEW** patients and **NOTE IDENTIFIED at risk patients.** Continue to check status of identified patients throughout the day	*Increase team awareness of unit status for at risk patients.*
b. **VERBALLY** report identified **at risk patients** using SBAR as per escalation aid.	*Shared communication increases awareness of where resources may be needed.*
c. **BE AWARE** of other patients at risk	

d. At beginning of shift, or when you assume responsibility conduct a full head-to-toe **ASSESSMENT** of your patient. Including Vital Signs and PEWS observations.	*Establishes a baseline*
e. **IDENTIFY** any situational awareness factors present for your patient (e.g.. patient/family/caregiver concern, watcher patient, communication breakdown, unusual therapy)	
f. **DOCUMENT** your patient's assessment at the bedside in the health record, including the PEWS Score and any identified situational awareness factors. In the event of a PEWS Alert review and follow the escalation aid within the alert. **VERBALLY** report identified at risk patients using SBAR and document time of escalation and steps taken in the health record. **RE-ASSESS** your patient per the frequency identified in the physician orders, care plan, escalation aid for your agency and Health Organization specific guidelines.	*Communication for rest of health care team*

2.1.3 Charge Nurse or NurseResponsible for Patient Care Unit/Emergency Department (ED)	***Rationale***
a. **ATTEND** handover and **UPDATE** at risk patient status on location specific dashboard (i.e. tracking shell, clinical leader organizer).	*Supports increased awareness and ongoing communication*
b. During shift report **LISTEN** to RN's report of patients and ensure at risk patients are identified.	*Make sure everyone is aware of at risk patients. Establish baseline*
c. **NOTIFY** site manager or delegate of at risk patients. If applicable in your facility, **ATTEND** bed meeting**.**	*Contribute to system view of patients in hospital* *Notification of potential resources*
d. **CHECK-IN** as required; engage RNs in coaching conversation using 6 questions to determine at risk patients, plan of care, supports required and follow-up. i. What is going on now? ii. What have you done already? iii. What still needs to be done/What are the barriers to care? iv. What are the next steps? v. What support do you need? vi. When/How will we follow up? ** If nurses do not check in then the Charge Nurse or delegate to seek them out for check-ins*	*Understand areas of concern* *Support plans as required* *Escalate as required*
e. As applicable **UPDATE** visual cues–using your agency's communication tool (e.g. white board)	*Visual cues to signal all team members of at risk patients*
f. CHECK-IN with manager, supervisor or designate and REPORT at risk patients.	*Communicate areas of concern* *Trouble shoot plan of care* *Escalation support*

2.1.4 Pediatric Early Warning System (PEWS) and Situational Awareness Factors Score Calculation in the EHR

a. Vital signs and observations of the patient are scored according to the criteria outlined in Table 1a.
b. Situational awareness factors are identified according to criteria outlined in Table 1b. Any **YES** response will produce a system generated alert. Within alert table escalation, action will be equivalent to a score of 2.
c. The score for each vital sign and observation will be automatically calculated to achieve a total PEWS score. In addition situational awareness criteria scores will be reviewed and documented. If a patient's condition is deteriorating the score will (usually) increase so a higher or increasing score gives an early indication that the patient is at risk and escalation of care may be required, including transfer to a higher level of care.
d. A PEWS alert will be triggered for single parameter scoring equal to 3 based upon age specific vital signs norms and assessment findings.
e. A PEWS alert will also be triggered from a multiparameter greater than or equal to 3 (e.g. a score of 1 for behavior, score of 1 for respiratory and score of 1 for cardiovascular parameters score) based upon age specific vital signs norms and assessment findings.
f. Medical staff and clinicians will use the total score to escalate care outlined in Table 2 in Section 2.1.2.

Table 1a. Brighton Pediatric Early Warning System (PEWS) Score				
	0	**1**	**2**	**3**
Behavior	Playing Appropriate	Sleeping	Irritable	Lethargic Confused Reduced response to pain
Respiratory	Within normal parameters, no recession	10 above normal parameters, using accessory muscles FiO2 greater than or equal to 30 %FiO2 or greater than or equal to 3 litres/min	greater than 20 above normal parameters, retractions FiO2 greater than or equal to 40 % FiO2 or greater than or equal to 6 litres/min	5 below normal parameters with retractions FiO2 greater than or equal to 50% or greater than or equal to 8 litres/min
Cardiovascular	Skin colour – Normal Capillary refill 1-2 seconds	Pale or dusky Capillary refill 3 seconds	Grey or cyanotic Capillary refill 4 seconds Tachycardia of 20 above normal rate	Grey or cyanotic or mottled Capillary refill 5 seconds or above Tachycardia of 30 above normal rate or bradycardia
Bronchodilators every 20 minutes			Score 2	
Persistent vomiting following surgery			Score 2	

Table 1b: Respiratory Age Specific Norms

	Respiratory Rate (Breaths per Minute)			
Age	**Normal Range**	**PEWS Score 1 (Tachypnea)**	**PEWS Score 2 (Tachypnea)**	**PEWS Score 3 (Bradypnea)**
0-2 months	31-62	63-72	Greater than or equal to 73	Less than or equal to 30
3-5 months	29-60	61-70	Greater than or equal to 71	Less than or equal to 28
6-8 months	28-57	58-67	Greater than or equal to 68	Less than or equal to 27
9-11 months	26-55	56-65	Greater than or equal to 66	Less than or equal to 25
12-14 months	25-53	54-63	Greater than or equal to 64	Less than or equal to 24
15-17 months	24-51	52-61	Greater than or equal to 62	Less than or equal to 23
18-20 months	23-48	49-58	Greater than or equal to 59	Less than or equal to 22
21-23 months	22-46	47-56	Greater than or equal to 57	Less than or equal to 21
24 -35 months	21-44	45-54	Greater than or equal to 55	Less than or equal to 20
3 years	18-39	40-49	Greater than or equal to 50	Less than or equal to 17
4 years	17-33	34-43	Greater than or equal to 44	Less than or equal to 16
5 years	16-32	33-42	Greater than or equal to 43	Less than or equal to 15
6 years	15-31	32-41	Greater than or equal to 42	Less than or equal to 14
7 years	15-30	31-40	Greater than or equal to 41	Less than or equal to 14
8 years	14-29	30-39	Greater than or equal to 40	Less than or equal to 13
9 years	13-29	30-39	Greater than or equal to 40	Less than or equal to 12
10 years	13-28	29-38	Greater than or equal to 39	Less than or equal to 12
11 years	12-28	29-38	Greater than or equal to 39	Less than or equal to 11
12 years	12-27	28-37	Greater than or equal to 38	Less than or equal to 11
13 years	12-27	28-37	Greater than or equal to 38	Less than or equal to 11
14 years	11-26	27-36	Greater than or equal to 37	Less than or equal to 10
15 years	11-26	27-36	Greater than or equal to 37	Less than or equal to 10
16 years	10-25	26-35	Greater than or equal to 36	Less than or equal to 9

Table 1c: Heart Rate age specific norms

Heart Rate (Beats per Minute)				
Age	Normal Range	PEWS Score 2 (Tachycardia)	PEWS Score 3 (Bradycardia)	PEWS Score 3 (Tachycardia)
0-2 months	96-162	163-172	Less than or equal to 95	Greater than or equal to 173
3-5 months	112-176	178 - 187	Less than or equal to 111	Greater than or equal to 188
6-8 months	107-171	172 - 181	Less than or equal to 106	Greater than or equal to 182
9-11 months	102-164	165 -174	Less than or equal to 101	Greater than or equal to 175
12-14 months	98-159	160-169	Less than or equal to 97	Greater than or equal to 170
15-17 months	95-156	157-166	Less than or equal to 94	Greater than or equal to 167
18-20 months	91-153	154 - 163	Less than or equal to 90	Greater than or equal to 164
21-23 months	88-150	151 - 160	Less than or equal to 87	Greater than or equal to 161
24 -35 months	86-147	148 - 157	Less than or equal to 85	Greater than or equal to 158
3 years	79-139	140 - 149	Less than or equal to 78	Greater than or equal to 150
4 years	74-135	136 - 145	Less than or equal to 73	Greater than or equal to 146
5 years	69-131	132- 141	Less than or equal to 70	Greater than or equal to 142
6 years	68-128	129 -138	Less than or equal to 67	Greater than or equal to 139
7 years	65-124	125 - 134	Less than or equal to 64	Greater than or equal to 135
8 years	62-121	122 - 131	Less than or equal to 61	Greater than or equal to 132
9 years	60-118	119 - 128	Less than or equal to 59	Greater than or equal to 129
10 years	58-116	117 - 126	Less than or equal to 57	Greater than or equal to 127
11 years	56-114	115 - 124	Less than or equal to 55	Greater than or equal to 125
12 years	54-112	113 - 122	Less than or equal to 53	Greater than or equal to 123
13 years	51-111	112 - 121	Less than or equal to 52	Greater than or equal to 122
14 years	52-109	110 - 119	Less than or equal to 51	Greater than or equal to 120
15 years	50-108	109 - 118	Less than or equal to 49	Greater than or equal to 119
16 years	49-106	107 - 116	Less than or equal to 48	Greater than or equal to 117

Table 1d: Blood Pressure Norms

Age	Systolic (mmHg)	Diastolic (mmHg)	Mean Arterial Pressure (mmHg)
0-28 days * **	**60-84**	**30-53**	**40 or higher**
1-3 mos*	**73-105**	**36-68**	**48 or higher**
4- 11mos*	**82-105**	**46-68**	**58-80**
1-3 yrs†	**85-109**	**37-67**	**53-81**
4-6yrs†	**91-114**	**50-74**	**63-87**
7-11 yrs†	**96-121**	**57-80**	**70-94**
12 plus yrs†	**105-136**	**62-87**	**76-103**

*BP ranges modified from American Heart Association (2012). Pediatric emergency assessment, recognition, and stabilization (PEARS), provider manual. †BP ranges modified from National Heart Lung and Blood Pressure Institute. (2004). The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. Pediatrics. 114(2): 555-576. ** Perinatal Services BC Newborn Guideline 13 Newborn Nursing care Pathway (2013). *** American Heart Association (2012). Pediatric emergency assessment, recognition, and stabilization (PEARS), provider manual.

Table 1e:
Situational Awareness Criteria Scoring

Situational Awareness Criteria	YES	NO
Patient/Family/Caregiver Concern	Any **YES** response will produce a system generated alert. Within the alert, escalation action will be equivalent to a score of 2 as per the escalation aid.	0
Unusual Therapy		
Communication Breakdown		
Watcher Patient		
PEWS score 2 or higher in any category		

2.1.5. Care Escalation

a. Escalation of care involves recognition, communication and a graded response strategy for patients with clinical deterioration. This strategy is based upon three (3) key principles:
   i. The patient's clinical needs are matched with the appropriate resources to provide the right care in the right place at the right time.
   ii. Escalation of care continues until the patient is stabilized on the unit, transferred to a higher level of care or the medical staff has determined a non-escalation of care treatment plan.
   iii. Responses are consistent with the patient's Code Status Designation

Table 2: PEWS CARE ESCALATION AID for EHR

The table below outlines the clinical decision support for escalation of care provided to clinicians when they receive a PEWS alert for inpatient/admitted patients and Emergency/Urgent Care patients. The EHR will only show the appropriate colour coded escalation of care content (e.g. yellow, orange, or red) related to the patient's score.

Table 2: PEWS CARE ESCALATION AID for EHR						
PEDIATRIC EARLY WARNING SYSTEM SCORE		**0-1**	**2**	**3**	**4 and/or score increases by 2 after interventions**	**5-13 or score of "3" in one category**
	Notify		**Review** patient with a more experienced healthcare provider (RN, or physician/NP)		**Notify** **MRP** or physician delegate	Notify most responsible provider (MRP) or delegate to assess patient immediately. If MRP unable to attend, call for next responsible physician
	Plan				Follow **plan of care provided** by MRP or delegate to mitigate contributing factors of deterioration	Follow plan of care provided by MRP or delegate to mitigate contributing factors of deterioration
	Assessment	Continue monitoring & documentation as per orders & routine protocols	Continue monitoring & documentation as per orders & routine protocols	**Increase** frequency of **assessments & documentation** as per plan from consultation with more experienced healthcare provider (RN, or physician/NP)	**Increase** frequency of **assessments & document** as per plan	Increase frequency of assessments & documentation as per plan
	Resources				**Discuss with senior nurse**: RN to patient ratio, care location, level of skill mix, equipment, medication, resources available and consideration of internal or external transfer to higher level of care	**Discuss with senior nurse**: increase nursing (1:1), care location and consideration of internal or external transfer to higher level of care
SITUATIONAL AWARENESS	If patient is assessed with one or more of the following situational awareness factors; ☐ Parent concern about child's condition ☐ Watcher patient ☐ Unusual therapy ☐ Breakdown in communication				 Follow PEWS Score 2 actions	

2.1.6 Notification

a. When the nurse receives the PEWS Alert, they will also receive a Provider notification task.
b. From the task the nurse will be guided to the provider notification documentation.
c. Based on clinical judgement the nurse considers notifying the appropriate health care team member as outlined in Table 2: Care Escalation Aid or documents rational for not notifying.
d. Once the nurse has notified the appropriate clinical resource, they will complete documentation in the provider notification section of IView.

NOTE: To document charge nurse or delegate notification - please see PEWS Actions Taken section of IView

e. Document any PEWS actions taken in IView using the PEWS Actions Taken field.

2.1.7 Evaluation and Intervention

a. Most Responsible Provider will
   i. When notified, assess the patient.
   ii. Based upon assessment they will develop and communicate a plan of care to mitigate contributing factors of deterioration. This could include placing appropriate orders and/or performing appropriate interventions.
   iii. Document any interventions and care provided.
   iv. Evaluate the care/intervention provided.
   v. Escalate care (e.g. calling Patient Transfer Network, consult Critical Care) or reassess goals of care, in discussion with patient, family and healthcare team, as appropriate.

b. Nurses will
   i. Complete Provider Notification task.
   ii. Review and complete orders received.
   iii. Perform appropriate interventions.
   iv. Document any interventions and care provided.
   v. Evaluate the care/intervention provided.
   vi. Escalate care as appropriate (see Care Escalation Aid – Table 2).

2.1.8 PEWS Algorithm

a. For PEWS Protocol Algorithm see Appendix B

2.2. Expected Patient/Family Outcomes

a. Patients and families are partners in care and are included in the discussions on the escalation of care and/or plan of treatment.

2.3. Site Specific Practices

a. Some sites have specific practices and differing access to resources (e.g. Rapid Response Teams or Clinical Resource Teams). Therefore, it is important to assess patients according to the facility and unit standards (i.e. monitoring frequency).

3. Related Documents and References

3.1. Related Documents

Sepsis – Early Identification and Treatment Using Cerner EHR Protocol

Modified Early Warning System (MEWS) for Clinical Deterioration in Adults Protocol

Pediatric Emergency Department Standards for Nursing Assessment and Documentation

SBAR – Report about a Critical Situation

3.2. References

Child Health BC. 2018. Provincial PEWS Clinical Decision Support Tool. Accessed from: https://www.childhealthbc.ca/media/243/download

Child Health BC. 2018. Pediatric Early Warning System (PEWS) Vital Signs, Assessment and Documentation Guidelines. Accessed fromhttps://www.childhealthbc.ca/media/245/download

Fraser Health Authority. 2014. Regional Early Identification of Deterioration and Escalation of Care - Clinical Policy. Accessed from: https://pulse/clinical/dst/Pages/dst.aspx?dstID=4604

Monaghan, A. 2005. Detecting and managing deterioration in children. *Pediatric Nursing*, 17 (1), 32-35.

4. Appendices

Appendix A: Alert Suppression Inclusion or Exclusion

Encounter Type Suppression – (Inpatient Encounter Types only to be Included; Program decision to be excluded)			
Future State Encounter Type	**Include/Exclude**	**Future State Encounter Type**	**Include/Exclude**
ALC	**Include**	Morgue	Exclude
Assisted Living	Exclude	Newborn	Exclude
Cancelled	Exclude	Outside Images	Exclude
Data Storage	Exclude	Phone	Exclude
Emergency	**Include**	Residential	Exclude
External Consult	Exclude	Specimen	Exclude
Historical	Exclude	Stillborn	Exclude
Home Care	Exclude	Residential	Exclude
Inpatient	**Include**		
Day Surgery	Exclude	Tertiary MH	**Include**
Outpatient	Exclude	FPH Inpatient	**Include**
Outpatient in a Bd	Exclude	FPH PreAdmssion	Exclude
Outpatient OB	Exclude	Remand/Assessment FPH PreAdmission	Exclude
Outreach	Exclude	Remand/Assessment FPH Admission	**Include**
Pre-Day Surgery	Exclude	FPH Assessed Not Admitted	Exclude
Pre-Inpatient	Exclude	FPS Clinic PreAdmission	Exclude
Pre-Outpatient	Exclude	FPS Clinic Admission	Exclude
Pre-Outreach	Exclude	FPS Clinic Assessment Admission	Exclude
Pre-Recurring	Exclude		
Recurring	Exclude		
Telehealth	Exclude		

Age Suppression
Age 0 to 16 years +364 days included and will receive alerts
Age 17 to 150 supressed

Location: Nursing Unit Suppression	
Location	**Include/ Exclude**
BCCH ED	**Include**
Inpatient units – med, surg, MH, oncology, etc. Include	
***PICU, NICU level 1,2**	**Include**
NICU level 3	Exclude
Residential	Exclude
****PACU**	**Include**

* **PICU, NICU level 1,2** - PICU will be performing a joint assessment with the receiving unit nurse at the time of transfer so the content must be available for the PICU to document to. When the documentation is available the alerting is available. NICU 1,2 are included for babies that are readmitted post newborn visit into these locations for treatment such as bili light therapy. PEWS will not be performed for newborns encounters in NICU 1,2.

****PACU** - further discussion to be had, but at this point in time the documentation and alerting will be available. For all active PACU PowerPlans/order sets there is a 4 hour suppression in place.

PowerPlan Suppression		
PowerPlan	**Recommended Time-Frame Suppression**	**Accepted Suppression**
Surgical		
Pre Op plans	none	none
Post op plans	none	none
PACU plans	4 hours	4 hours
Medicine/Medical		
Palliative care	Suppression; permanent	Suppression; permanent
Stroke	none	none
Cardiac and Critical Care		
STEMI	none	none
Hypothermia/Cooling – targeted temperature	36 hours	36 hours

Orderable Suppression
Comfort measures orderable
Resuscitation status – if aligned with no interventions/treatment level – suppression; permanent. (Options of Care - To Be Determined)

Appendix B: Pediatric Early Warning System (PEWS) Protocol Algorithm In-Patient /Admitted (best viewed with magnification 140% or greater)

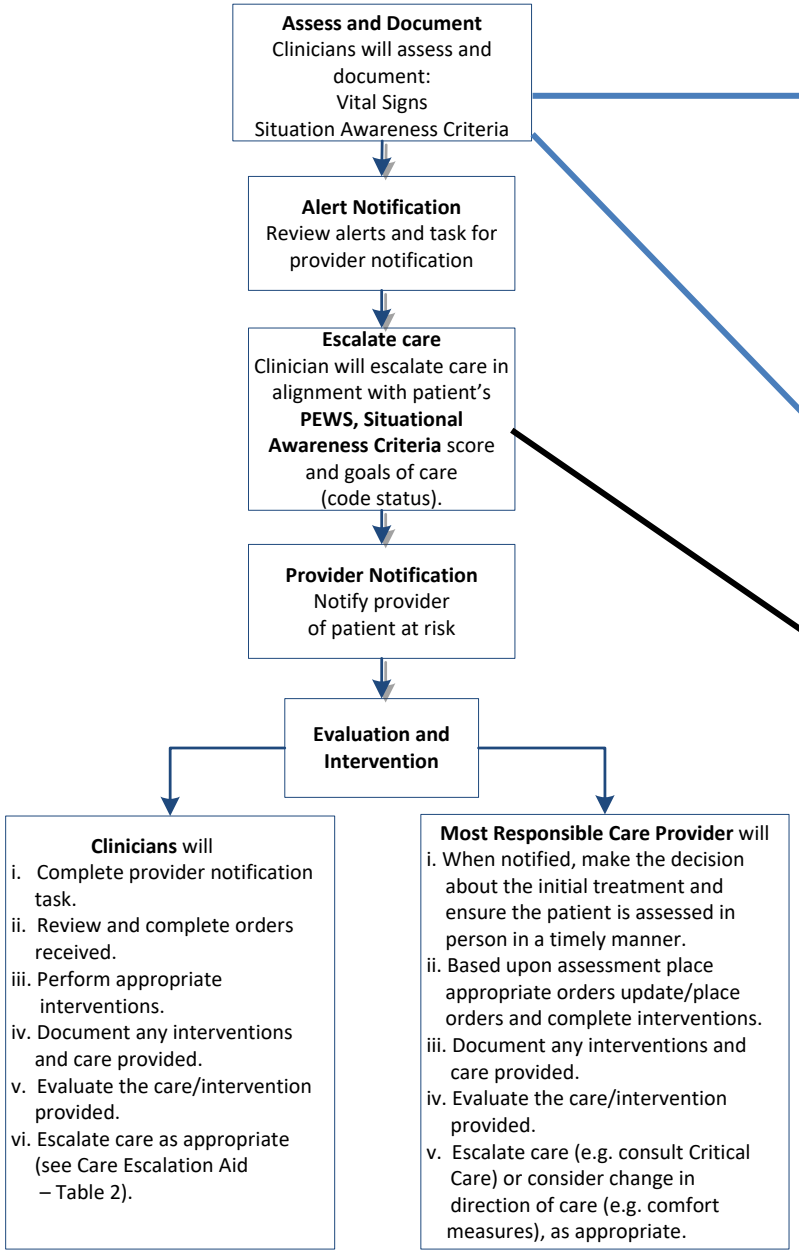

Table 1a. Brighton Pediatric Early Warning System (PEWS) Score

	0	1	2	3
Behavior	Playing Appropriate	Sleeping	Irritable	Lethargic Confused Reduced response to pain
Respiratory	Within normal parameters, no recession	10 above normal parameters, using accessory muscles FiO2 greater than or equal to 30 %FiO2 or greater than or equal to 3 litres/min	greater than 20 above normal parameters, retractions FiO2 greater than or equal to 40 % FiO2 or greater than or equal to 6 litres/min	5 below normal parameters with retractions FiO2 greater than or equal to 50% or greater than or equal to 8 litres/min
Cardiovascular	Pink Capillary refill 1-2 seconds	Pale or dusky Capillary refill 3 seconds	Grey or cyanotic Capillary refill 4 seconds Tachycardia of 20 above normal rate	Grey or cyanotic or mottled Capillary refill 5 seconds or above Tachycardia of 30 above normal rate or bradycardia
Bronchodilators every 20 minutes			Score 2	
Persistent vomiting following surgery			Score 2	

Table 1e: Situational Awareness Criteria Scoring

Situational Awareness Criteria	YES	NO
Patient/Family/Caregiver Concern	Any **YES** response will produce a system generated alert. Within the alert, escalation action will be equivalent to a score of 2 as per the escalation aid.	0
Unusual Therapy		
Communication Breakdown		
Watcher Patient		
PEWS score 2 or higher in any category		

Table 2a: BC PEWS Inpatient/Admitted Provincial Escalation Aid

PEDIATRIC EARLY WARNING SYSTEM SCORE	0-1	2	3	4 and/or score increases by 2 after interventions	5-13 or score of "3" in one category
Notify		**Review** patient with a more experienced healthcare provider		**Notify** **MRP** or physician delegate	Notify most responsible provider (MRP) or delegat to assess patient immediately. If MRP unable to attend, for next responsible physician
Plan				Follow **plan of care provided** by MRP or delegate to mitigate contributing factors of deterioration	Follow plan of care provid by MRP or delegate to mitigate contributing fact of deterioration
Assessment	Continue monitoring & documentation as per orders & routine protocols	Continue monitoring & documentation as per orders & routine protocols	**Increase** frequency of **assessments & documentation** as per plan from consultation with more experienced healthcare provider	**Increase** frequency of **assessments & document** as per plan	Increase frequency of assessments & documentation as per pla
Resources				**Discuss with senior nurse:** RN to patient ratio, care location, level of skill mix, equipment, medication, resources available and consideration of internal or external transfer to higher level of care	**Discuss with senior nurse** increase nursing (1:1), car location and considerati internal or external transf to higher level of care
SITUATIONAL AWARENESS	If patient is assessed with one or more of the following situational awareness factors; ☐ Parent concern about child's condition ☐ Watcher patient ☐ Unusual therapy ☐ Breakdown in communication			Follow PEWS Score 2 actions	

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