Physical Assessment: Critical Care Areas

Site Applicability

SPH Critical Care Units (ICU, CSICU, CICU, PACU), Surgical High Acuity Unit and MSJ High Acuity Unit (HAU)

Practice Level

Specialized - RN in a critical care specialty unit and MSJ HAU

Policy Statement

Consent must be obtained prior to physical assessment in accordance with the BC Health Care (Consent) and Care Facility (Admission) Act.

A physician's order, including frequency, is required to obtain pulmonary wedge pressure (PAWP).

Need to Know

The head-to-toe comprehensive physical assessment includes all the body systems as well as medication infusions and equipment. A comprehensive assessment includes a physical exam, vital signs (blood pressure, heart rate, temperature, respiratory rate, oxygen saturation, oxygen therapy and pain score), head to toe assessment, and any other unit specific assessments.

Any unusual findings should be followed up with a **focused assessment** (a detailed assessment of a specific body system, or several body systems, relating to the presenting problem or current concerns of the patient) specific to the affected body system. A focused assessment should be organized and systematic. The information from the focused assessment provides baseline data to confirm maintenance of hemodynamic and psychological stability or changes in the patient's status. Abnormal findings require further nursing assessment and intervention, and need to be clearly documented and brought to the attention of the Charge Nurse (CN) and the Most Responsible Physician (MRP) in the unit. Adequate explanation of abnormal findings should be included in the patient's medical record.

A physical assessment involves collecting objective data using the techniques of inspection, palpation, percussion, and auscultation as appropriate.

An **admission assessment** is a comprehensive nursing assessment, including patient history, general appearance, physical examination, and vital signs.

Patients in critical care areas (ICU, CSICU, CICU, PACU, MSJ HAU) and the Surgical High Acuity Unit require an initial baseline assessment to facilitate the identification of nursing problems. Due to the rapid onset of potential complications continuous observation and periodic reassessment of the patient is necessary. It is the nurses' responsibility to notify the most responsible physician (MRP) of any abnormal findings, concerns, or issues.

Assessment Frequency

Full patient assessments are performed on admission, at beginning of every shift, every 4 hours (08, 12, 16, 20, 24, & 0400) and PRN (with any changes in patient status) unless otherwise ordered.

A focused assessment typically takes place before transfer of the patient to another unit or facility, upon acceptance of a patient from another unit, when the patient has a specific concern, or if the patient's physiologic or psychological status warrants a change in level of care.

An admission assessment is completed at the time of admission. A **shift assessment** is a concise nursing assessment completed at the beginning of each shift.

Protocol

Assessment

Neurological System		
Best Eye Response	**Best Verbal Response**	**Best Motor Response**
4 Spontaneous 3 To speech 2 To pain 1 No response	5 Orientated 4 Confused 3 Inappropriate words 2 Incomprehensible sounds 1 No response	6 Obeys commands 5 Localizes to pain 4 Withdraws from pain 3 Abnormal flexion 2 Abnormal extension 1 No response

1. Assess for any neurological deficits and changes of Level of Consciousness using the Glasgow Coma Scale (GCS). Score is out of 15
   - Pupil response and size
   - Individual limbs should be assessed for strength, tone, and any abnormal posturing
   - Cough and gag reflex for intubated patients
2. RASS (Richmond Agitation Sedation Scale)
   - Chart value (-5 to +5)
   - Goal RASS
3. Assess and document pain status (refer to Behavioural Pain Scale tool (PHC-NF408), or B-00-13-10021 - Myocardial Ischemia: Management in Critical Care; B-00-13-10019 - PCA (Patient Controlled Analgesia): Patient Care; B-00-13-10116 - Perineural Anesthesia: Patient Controlled Analgesia (PCPA)
   - Location, duration, quality, intensity
   - PCA, epidural
   - Continuous analgesic infusion/PRN/boluses
   - Pain treatment and outcome
4. Assess sleep quality (awake, intermittent, or sleeping)
   - CSICU: B-00-13-10025 - Cardiac Surgery Post-Operative Care (CSICU)
5. Assess for **delirium** every 6 to 12 hours and PRN as per unit routine

- In ICU - Use the **Intensive Care Delirium Screening Tool (PHC-IC051)**
- In CICU and MSJ HAU:
  - For intubated patients use the **Intensive Care Delirium Screening Tool (PHC-IC051)**
- For non-intubated patients use the B-00-13-10065 - Delirium Assessment and Care (Acute Care)In CSICU - Use the B-00-13-10065 - Delirium Assessment and Care (Acute Care)

Cardiovascular System

1. Assess:
   - Temperature core or manual (i.e. rectal, thermacath, oral, axilla)
   - Colour, warmth, movement and sensation of extremities (CWMS)
   - Palpate bilateral radial, femoral, dorsalis pedis and posterior tibialis pulses to assess for strength, rate, and regularity (i.e. weak, Doppler bounding, etc.)
   - Palpate and inspect capillary refill on patient's nailbeds for a minimum of 3 seconds
   - Heart sounds -S1, and S2 - presence, regularity, quality (i.e. clear, muffled, distant), additional heart sounds
   - Blood pressure with cuff (compare to invasive arterial pressure value if applicable once per shift and PRN)
   - Presence, location, and degree of edema (i.e. +1- +4)
   - Heart rate and interpret rhythm. Mount rhythm strip on form **PHC-IC004**. Initiate ST segment monitoring, as per protocol and print to **PHC-IC056** unless 100% paced rhythm
     - PACU/HAU: initiate ST segment monitoring in all patients requiring ECG monitoring, unless otherwise indicated
2. Assess arterial monitoring equipment – (if applicable):
   - Site and flush system
   - Level and zero transducer with initial assessment and PRN
   - Observe arterial waveform for dampening
   - Obtain systolic, diastolic and mean arterial values and record hourly on unit specific flowsheet
3. Assess CVP monitoring equipment if applicable:
   - Site and flush system
   - Level and zero transducer with initial assessment and PRN
   - Observe CVP waveform
   - Obtain CVP value and document on flowsheet
4. Assess PA catheter and system – (if applicable):
   - Site, flush system, and document centimeter marking at exit site
   - Level and zero transducer with initial assessment and PRN
   - Observe for correct waveforms and obtain PA, right atrial (RA) pressures as ordered
   - Obtain PAWP **only with a specific order** from the most responsible physician (MRP), including frequency. See B-00-12-10009 – Pulmonary Artery Catheter Insertion) and B-00-13-10182 – Pulmonary Artery Wedge Pressure- Minimizing Risk When Obtaining

5. Assess patient for presence of devices (e.g. pacemakers [permanent/temporary], AICDs [Automatic Implantable Cardioverter-Defibrillator], Impellas, IABPs [Intra-Aortic Balloon Pump], LVADs [Left Ventricular Assist Device], and other equipment such as epi-wires)
   - Check pacemaker and document if applicable:
     - Connections and setting – mode, output (mA), sensitivity (mV), and rate
     - Document centimeter marking at exit site for Transvenous Pacemakers (TVPM)
     - Assess epi-cardial pacing wires – site, grounding, dressing
     - Check % of battery life
     - Ensure back-up pulse generator with battery with dialed settings present at bedside as per unit routine
   - See BD-00-07-40063 - Pacemakers: Temporary Transvenous Pacemakers, Management of (adult)
   - Presence of vascular access sheaths and associated intravenous infusions

Respiratory System

1. Assess:
   - Rate, depth of respirations, presence of dyspnea
   - Chest expansion - symmetry and quality
   - Cough, presence and quality of sputum
   - Use of accessory muscles
   - Palpate for subcutaneous emphysema
   - Breath sounds:
     - Auscultate anterior and posterior lung fields for quality (normal, laboured), location, and any adventitious sounds
2. Assess and document spontaneous breathing or if artificial airway present (endotracheal or tracheostomy tube). If applicable:
   - Cuff leak
   - Patency of tubes
   - Document centimeter mark at lip and size of OETT/Tracheostomy
   - Security of tapes/ties
   - Condition of facial skin and oral mucosa
   - Presence of safety/emergency equipment
3. Assess and document ventilator settings, if applicable:
   - Set mode
   - Set rate and patient's rate
   - O_2 requirements (FiO_2)
   - Minute volume (MV)
   - Tidal volume (V_T)
   - Positive end expiratory pressure (PEEP)

- Inspiratory pressure
- Obtain SaO_2 (O_2 sat) via pulse oximeter

4. Assess O_2 sat (SpO_2) status, O_2 requirements and delivery method
5. Assess and document chest tube equipment if applicable. See **BD-00-07-40011** - Chest Tubes and Chest Drainage Systems: Patient Assessment and Intervention
   - Pleur-Evac functioning (suction float, suction setting etc.)
     - Presence of air leaks (air leak meter)
     - Drainage – amount, quality
     - Presence of emergency/safety equipment
     - Chest Tube site and dressing

Gastrointestinal System

1. Assess:
   - Oral mucosa on ventilated and patients who are NPO (provide mouth care as per unit policy)
   - Blood glucose on admission and as applicable
   - Abdomen and palpate all 4 quadrants for distension, soft/rigid, masses, pulsations, contour
   - Auscultate for presence and quality of bowel sounds
   - Diet type and appetite
   - Nausea or vomiting
   - Bowel function
     - Most recent BM
     - Consistency, amount, and quality
     - Passing flatus
   - Abdominal girth (if ordered)
   - Nasogastric/ oral-gastric tube (Salem or post pyloric feeding tube) if present. See B-00-13-10044 - Tube Feeding: Large Bore or B-00-13-10045 - Tube Feeding: Small Bore-Entriflex:
     - Insertion site (assess for migration- measurement at nare or oral site- use black markings on tubes)
     - If Salem is placed to suction and if any drainage- quality and amount
     - Feeds – type, rate, tolerance – amount of residual
     - Head of bed raised at least 30°
2. Assess:
   - Presence of abdominal drains, appliances (ostomies), and tubes – site (skin integrity), dressing, patency and drainage
   - Rectal tube (if applicable)– drainage – amount, colour and quality
   - Record intake if applicable and as ordered
3. Assess for Dysphagia see **Dysphagia Screening Tool- Acute (PHC-NF208)**

Genitourinary System
1. Assess patient voiding/appliance (i.e. ileal conduit, catheter). If catheter in situ: • Type and size of catheter; Presence of securement device to upper thigh • Amount, color, clarity of output • If urinary retention perform bladder scan as per protocol • Record hourly output and notify the most responsible physician (MRP) if urine output less than 30 mL/hour for 2 consecutive hours, if applicable • Assess continued need for catheter. B-00-13-10121 - Urinary Catheters: Management and Prevention of UTI 2. Assess genital area for edema, bleeding, or discharge 3. Renal replacement equipment: • Dialysis catheter (peritoneal or vascular) site, dressing • Dialysate or filtrate – amount, quality • Integrity of system
Weight
• Use bed scale while lying flat daily in am and on admission-record on flowsheet • If patient able to stand use standing scale if available
Intravenous (IV) In fusions
Intravenous (IV) Infusions • Insertion site/dressing • Infusion rate and pump settings • Additives (dose, concentration)
Skin and Wound
• Inspect the skin for integrity, colour, turgor, temperature, inflammation, rashes, and scars. Use **Wound Assessment and Documentation Flowsheet (PHC-NF099)** and **Braden Scale and Ulcer Prevention Care Plan (PHC-NF393)** • Classify wound(s) and assess dressings or topical treatments – including Negative Pressure Wound Therapy. See B-00-12-10056 - Vacuum Assisted Closure (VAC) Therapy; Negative Pressure Wound Therapy • Surgical wounds/incisions: approximation of edges, drainage, redness, dressing • Turn every 2 hours and document on flowsheet if on complete bedrest
Mobility
• ICU: Mobility Stage – utilizing ICU bedside guide "When to consider Not mobilizing" and "Stages of Mobility" • Complete and follow the **Critical Care Fall Assessment and Care Plan (PHC-NF480)** • Assess gait, posture, ability to participate in Activities of Daily Living (ADLs), and Range of Motion (ROM)

Safety

- Bedside safety and equipment check at beginning of every shift
- Alarm and parameter limits set and verified
- Allergy (if applicable) and ID bands
- **Critical Care Fall Risk Assessment and Care Plan (PHC-NF480)**
  - Signage at bedside if appropriate
- Call bell within reach
- Bed in lowest position
- Bed alarm on if appropriate
- Side rails in appropriate position
- At each shift handover- 2 RNs to check all infusions, assess IV tubing and IV bags for expiry dates

Assessment/Vital Signs Frequency

CICU

- On admission, beginning of every shift, then every 4 hours, and as necessary until patient is stable or if condition changes
  - Vital signs recorded Q1H - (i.e. HR, BP, PAP, RAP, RR, ventilator settings, SpO_2, renal output and all intake - intravenous or other) on flowsheet
  - Post-procedure patients (i.e. PCI/SCA, TAVI, TEE, Cardioversion, etc.)
    - Q15 minutes x 4 or longer if unstable, then:
    - Q30 minutes x 4 or longer if unstable, then:
    - Q1H until or as often as necessary until patient is stable or if condition changes, or according to physician's order, then Q4H until discharge from unit or according to physician's order

CSICU

- On admission from OR, every 4 hours, and vital signs:
  - Q15 minutes x 4 or longer if unstable, then:
  - Q30 minutes x 4 or longer if unstable, then:
  - Q1H until transfer or discharge from unit or as often as necessary until patient is stable or if condition changes, or according to physician's order

ICU

- On admission, at beginning of every shift, then:
  - As often as necessary until patient is stable or if condition changes, then:
  - Q4H until discharge from unit or according to physician's order

PACU

- Unconscious: Q5min until conscious including sedation using the Pasero Opioid Induced Sedation Scale (POSS)
- Conscious: Q15 min x 8 Q30 min x 4 Q1H until discharge from PACU and PRN.
  *patients attached to a ventilator receive the same vital sign frequencies as conscious patients

SPH Surgical HAU

- Q30 minutes x 4, then Q1hourly and PRN

MSJ HAU

- On admission, every 4 hours and if stable vital signs:
  - Q30 mins x 2 ;if stable then:
  - Q1H until discharge or according to physicians orders
  - Q4H once discharged from unit and waiting for bed.

If applicable:

- Monitor temperature Q1H when actively warming patient then Q4H and PRN (PACU)
- Monitor cardiac output (CO) QID, (schedule determined on a patient-by-patient basis), SvO_2, CCI, SVR, and hemodynamic profile Q1H and PAWP as ordered by MRP
- Assess chest tube equipment Q1H and measure drainage:
  - CSICU PACU Q1H and PRN
  - ICU/CICU/PACU HAU – Q4H or PRN

Interventions

It is the nurses' responsibility to notify the most responsible physician (MRP) of any abnormal findings, concerns, or issues. Report and document any significant changes in condition or any deviation from written parameters to the responsible member of the health care team.

Refer to specific protocols/standards (e.g. chest pain, shortness of breath, skin breakdown, care of PA catheter etc.) for other nursing interventions. Evaluate and document effectiveness of interventions according to identified goals or expected outcomes.

Documentation

CICU and CSICU:

- Critical Care Flow sheet (Form IC037):
  - Initial and subsequent assessments
  - All numeric values
  - IV infusions - concentrations, volumes, specific sites
  - Dosages of infusing medications and volumes infused

ICU:

- ICU Flowsheet (PHC-IC049)
  - Initial assessment, the following two assessments during the shift are documented in the Nurses' Notes
- Behavioural Pain Scale (PHC-NF408)

CSICU:

- Nurses' Notes/Cardiac Surgery Pathway -
  - Ongoing assessment and interventions
- Department of Nursing CSICU Assessment Record (NF072)

CICU:

- ICU Nursing Physical Assessment Record (PHCIC045) for intubated/ventilated patients
- CCU Nursing Physical Assessment Record SPH (NF121) for non-intubated/ventilated patients
- Chest Tube Assessment Flowsheet (PHC-NF224)
  - All assessments and interventions related to chest tubes
- On admission complete Cardiac Initial Patient Admission History and Screening (NF411)
- Behavioural Pain Scale (PHC-NF408)

MSJ HAU:

- High Acuity Unit Nursing Physical Assessment Record (PHCNF491)
- High Acuity Unit 24 hour Flowsheet
- As needed:
  - Chest Tube Assessment Flowsheet (PHC-NF224)
  - All assessments and interventions related to Chest Tubes

All:

- Medical Administration Record (MAR)
  - All medications, including IV infusion dosages
- Wound Assessment and Documentation Flowsheet (PHC-NF099)
  - All wound assessments and interventions
- Intensive Care Delirium Screening Tool (PHC-IC051)
- Dysphagia Screening Tool- Acute (PHC-NF208)
- Braden Scale and Ulcer Prevention Care Plan (PHC-NF393)
- Critical Care Fall Assessment and Care Plan (PHC-NF480)
- Nurses' Notes (PHC-NF035)
- ECG Rhythm Strip Flow Sheet (PHC-IC004)
- ST-segment analysis from central monitor printer (PHC-IC056)

Patient and Family Education

Explain that this assessment is routine for all patients, and when you plan to do it.

Patients and Family may participate in nurse-to-nurse handover also known as "Bedside Shift Report"; obtain patient's verbal consent for family to remain. If the patient is unable to consent, the designated

substitute decision maker (TSDM) may participate in nurse-to-nurse handover, or the TSDM may approve one other family member to participate.

Use the "Bedside Shift Report: Information for Patients & Families in Critical Care Units" (JB.330.B391.PHC (Nov. 2017) to orient patients and families on how to participate in bedside shift report (available on the PHEM web site)

Related Standards and Resources:

1. B-00-12-10009 – Pulmonary Artery Catheter Insertion (Assisting)
2. B-00-12-10056 - Vacuum Assisted Closure (VAC) Therapy; Negative Pressure Wound Therapy
3. B-00-13-10018 – PACU: Post Anesthetic Patient in Phase 1
4. B-00-13-10019 - Oxygen Therapy, Acute Care
5. B-00-13-10019 - PCA (Patient Controlled Analgesia): Patient Care
6. B-00-13-10021 - Myocardial Ischemia: Management in Critical Care
7. B-00-13-10025 - Cardiac Surgery Post-Operative Care (CSICU)
8. B-00-13-10044 - Tube Feeding: Large Bore
9. B-00-13-10045 - Tube Feeding: Small Bore- Entriflex
10. B-00-13-10065 - Delirium Assessment and Care (Acute Care)
11. B-00-13-10105 – High Acuity Unit SPH: Admission or PACU Overnight Stay
12. B-00-13-10116 - Perineural Anesthesia: Patient Controlled Analgesia (PCPA)
13. B-00-13-10121 - Urinary Catheters: Management and Prevention of UTI
14. B-00-13-10182 – Pulmonary Artery Wedge Pressure- Minimizing Risk When Obtaining
15. BD-00-07-40011 - Chest Tubes and Chest Drainage Systems: Patient Assessment and Intervention
16. BD-00-07-40063 - Pacemakers: Temporary Transvenous Pacemakers, Management of (adult)

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Groups Consulted

Nurse Educator ICU SPH
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