


British Columbia Provincial Nursing Skin & Wound Committee  
Guideline: Assessment and Treatment of Pressure Injuries in Adults & Children

<p>Developed by the BC Provincial Nursing Skin &amp; Wound Committee in collaboration with Wound Clinicians from:</p> 	
<b>Title</b>	<b>Guideline: Assessment and Treatment of Pressure Injuries in Adults &amp; Children</b>
<b>Practice Level</b>	<ul style="list-style-type: none"> <li>Nurses in accordance with health authority/agency policy/standards</li> <li>Clients with pressure injuries require an interprofessional approach to provide comprehensive, evidence-based assessment and treatment. This clinical practice guideline focuses solely on the role of the nurse, as one member of the interprofessional team providing client care.</li> </ul>
<b>Background</b>	<ul style="list-style-type: none"> <li>In 2016, the NPUAP redefined the term pressure ulcer to <b>pressure injury (PI)</b> and revised the pressure injury definitions.</li> <li>This assessment and treatment guideline is based upon the:             <ul style="list-style-type: none"> <li>NPUAP, 2016 - Pressure injury staging definitions and prevention interventions; the</li> <li>NPUAP, 2014 - Prevention and Treatment of Pressure Ulcers recommendations; and</li> <li>Current literature and expert opinion.<sup>1,2,3,4</sup></li> </ul> </li> <li>Pressure injuries occur as a result of intense and/or prolonged pressure. The intensity and duration of pressure that results in tissue damage is very client specific. In addition, pressure injuries are affected by friction/shear forces, microclimate (moisture and temperature), nutrition, tissue perfusion, general condition of the soft tissues, and client co-morbidities.<sup>3</sup></li> <li>Pressure injuries are staged as Stage 1, Stage 2, Stage 3, Stage 4, Unstageable, or Deep Tissue Pressure injury. New to NPUAP (2016) are the following two pressure injuries:             <ul style="list-style-type: none"> <li>Medical Device Related PIs are related to skin damage around or under a medical device used for diagnostic or therapeutic purposes.<sup>3</sup> Medical Device Related PIs are staged.</li> <li>Mucosal Membrane PIs are found on mucous membranes with a history of a medical device in use at the location of the injury.<sup>3</sup> Mucosal Membrane PIs are not staged.</li> </ul> </li> <li>Unavoidable PIs can occur even in situations where the clinicians (health authority/agency) have evaluated the client clinical condition, PI risk factors, defined and implemented interventions consistent with client goals and treatment/prevention strategies; and consistently reassessed the client's needs.<sup>5</sup></li> <li>Stage 1 and Stage 2 PIs must be differentiated from other skin damage such as skin tears, venous leg ulcers, diabetic foot ulcers, and incontinence-associated dermatitis (IAD) to ensure appropriate treatment of the skin damage.</li> <li>A comprehensive wound assessment is required to determine the PI staging and treatment.</li> <li>The treatment of PIs is evidence-based and follows the wound bed preparation principles (see WBP Guideline) and in addition must include appropriate pressure prevention strategies (see Prevention Guideline).</li> </ul>
<b>Indications for Use</b>	For assessment and treatment of adults & children who have pressure injuries.
<b>Bookmarks</b>	<p><a href="#">Practice Level</a></p> <p><a href="#">Background</a></p> <p><a href="#">Indication for Use</a></p> <p><a href="#">Assessment</a></p> <p><a href="#">Determine the Pressure Injury Stage</a></p> <p><a href="#">Determine the Goal of Care</a></p> <p><a href="#">Interventions:</a></p> <ul style="list-style-type: none"> <li><a href="#">Care Plan Stage 1</a></li> <li><a href="#">Care Plan Stage 2</a></li> <li><a href="#">Care Plan Stage 3</a></li> </ul>

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet (www.clwk.ca). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. *This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.*

	<ul style="list-style-type: none"> <li>• <a href="#">Care Plan Stage 4</a></li> <li>• <a href="#">Care Plan Unstagable - Dry, stable eschar</a></li> <li>• <a href="#">Care Plan Unstagable - Soft, boggy eschar</a></li> <li>• <a href="#">Care Plan Deep Tissue Injury</a></li> <li>• <a href="#">Care Plan Medical Device Related</a></li> <li>• <a href="#">Care Plan Mucosal Membrane</a></li> <li>• <a href="#">Care Plan End-of-Life Skin Changes</a></li> </ul> <p> <a href="#">Client Education &amp; Resources</a>  <a href="#">Discharge Planning</a>  <a href="#">Client Clinical Outcomes</a>  <a href="#">Quality Assurance Indicators</a>  <a href="#">Documentation</a>  <a href="#">Definitions</a>  <a href="#">References/Bibliography</a>  <a href="#">Document Creation/Revisions Dates</a> </p>
<b>Related Documents</b>	<p> <a href="#">Guideline Summary: Assessment and Treatment of Pressure Injuries in Adults &amp; Children</a>  <a href="#">Educational Resource: How to Stage a Pressure Injury</a>  <a href="#">Guideline: Prevention of Pressure Injuries in Adults &amp; Children</a>  <a href="#">Flowsheet: Braden Risk &amp; Skin Assessment Flow Sheet (BRSAFS)</a>  <a href="#">Procedure and Documentation Guideline: Braden Risk &amp; Skin Assessment in Adults</a>  <a href="#">Flow Sheet: Wound Assessment &amp; Treatment Flow Sheet</a>  <a href="#">Guide: Braden Scale Interventions Guideline - Adult</a>  <a href="#">Guide: Braden Scale Interventions Guide - Children</a>  <a href="#">Guideline: Moisture Associated Skin Damage in Adults &amp; Children</a>  <a href="#">Summary: Moisture Associated Skin Damage in Adults &amp; Children</a> </p>

**Assessment and Determination of the Goal of Care**

**Assessment**

1. Assess Client Concerns
  - a. Client’s level of understanding about the sources of pressure, healability, and risk factors.
  - b. Impact of the wound on client’s daily life and body image.
  - c. Social and financial concerns and availability of support systems to address concerns.
  - d. Emotional, cognitive, behavioural or mental health concerns and availability of support systems to address these concerns.
  - e. Quality of life issues that could impact treatment.
  - f. Impact of client’s current environment on care.
  - g. Client and family goals of care and preferences for treatment of the wound and risk factors.
  - h. Acknowledge culture and traditions.
  - i. Client/family ability and motivation to comprehend/participate in and adhere to the care plan.
  
2. Assess Risk Factors for Wound Healability
  - a. Medical conditions that increase the risk for skin breakdown, such as, alterations to blood pressure (hypotension), diabetes mellitus (DM), peripheral vascular/arterial disease, circulation disorders, conditions that impact mobility/sensation (e.g., Spinal Cord Injury, peripheral neuropathy), or palliative/end of life stage diseases.
  - b. Impaired oxygenation status of the skin and underlying tissue (e.g., Chronic Obstructive Pulmonary Disease (COPD), heart failure (HF), anemias).
  - c. Autoimmune diseases/conditions and/or immunosuppression leading to an increased risk of developing a wound infection.
  - d. History of pressure injuries (closed PIs, or previous flaps or grafts).

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet (www.clwk.ca). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. *This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.*

- e. Lifestyle factors such as smoking history (and motivation to quit) and substance use.
- f. Extremes of age due to the fragility of the skin (e.g., prematurity or advanced age).
- g. Medications that interfere with wound healing (e.g., non-steroidal anti-inflammatory NSAIDs, antineoplastics, systemic corticosteroids, anticoagulants, vasopressors).
- h. Iatrogenic conditions that increase risk for skin breakdown such as prolonged surgical procedures (3 hours or longer), radiation therapy, analgesia, sedation, delirium and dementia.
- i. Impaired nutritional status ([Prevention of Pressure Injury Guideline](#))
  - i. Review Braden or Braden Q nutrition subscale score.
  - ii. Client's nutritional status assessed by a reliable nutrition screening tool (e.g., Mini Nutritional Assessment).
  - iii. Inadequate oral intake e.g., poor appetite, prolonged nothing by mouth (NPO), clear fluid or full fluid diet.
  - iv. Inadequate enteral or parenteral nutrition infusion.
  - v. Inadequate fluid intake.
  - vi. Underweight status, unintended weight loss or overweight.
  - vii. Difficulty swallowing, biting/chewing or self-feeding.
  - viii. Altered gastrointestinal function as evidenced by nausea, vomiting, diarrhea and/or constipation.
  - ix. Altered nutrition related lab values (e.g., low hemoglobin, low pre-albumin, high blood glucose).
  - x. Client's food choices/daily intake for nutritional value.
  - xi. Client's food preferences based on their health condition.
- j. Moisture/Incontinence ([Moisture Associated Skin Damage Guideline](#))
  - i. Review Braden or Braden Q moisture subscale score.
  - ii. Current management of urinary and/or fecal incontinence
    - a. Toileting plan.
    - b. Use of collection/containment products (i.e., briefs).
    - c. Use of fecal or urinary continence management systems.
  - iii. Excessive perspiration and evidence of moisture or maceration in perianal area, skin folds or panniculus.
  - iv. Heavily exudating wound or skin conditions.
  - v. Excessive edema causing weeping skin.
- k. Pressure, Friction/Shear ([Prevention of Pressure Injury Guideline](#))
  - i. Review Braden or Braden Q pressure, friction/shear subscale score
  - ii. Head-to-Toe skin check for the presence of blanchable and non blanchable erythema over bony prominences.
    - i. Ability to shift position independently when sitting, lying and transferring, and/or the need for assistive equipment and assistance to reposition.
    - ii. Effectiveness of pressure redistribution equipment and devices in use.
    - iii. Monofilament testing to determine sensory deficits
    - iv. Note location and type of medical device(s) if in use
- l. Ability to mobilize and transfer ([Prevention of Pressure Injury Guideline](#))
  - i. Review Braden or Braden Q mobility subscale score.
  - ii. Range of motion/contractures.
  - iii. Bed mobility and transfer techniques used to minimize the effects of shear and friction.
- m. Colonization with an infectious agent such as Methicillin-Resistant Staphylococcus Aureus (MRSA), Vancomycin-Resistant Enterococci (VRE), or Extended Spectrum Beta-Lactamase (ESBL), or other Antibiotic Resistant Organisms (AROs), if known.
- n. Risk of osteomyelitis when the bone is exposed.
- o. Allergies and/or sensitivities (e.g., latex allergies, adhesives and dressings, lotions, ointments, creams).

3. Assess Pain

- a. Use a reliable and valid pain assessment scale before, during, and after provision of wound care ([see Definitions](#)).
- b. For a client with wound pain and/or procedural/treatment-related pain coordinate wound care activities with analgesic administration allowing sufficient time for the analgesic to be effective.
- c. Clients with a spinal cord injury T6 or higher, an autonomic dysreflexia event may be triggered due to wound-related pain.

4. Assess the Skin

- a. Complete a Head-to-Toe skin assessment to assess the skin over bony prominences and under/around medical devices. The findings will also assist with the PI staging:
  - i. Assess for areas of erythema (redness) or areas of discoloration; areas of discoloration may appear differently in darkly pigmented skin
  - ii. If erythema/areas of discoloration are present then:
    - o Test for blanching and non-blanching using the finger pressure method
    - o Assess for temperature change (warmth or coolness)
    - o Assess for firmness or boggy
    - o Assess for changes in sensation (pain, itching, numbness)
  - iii. Assess for intact or non-intact blisters, note if serum-filled or blood-filled.

5. Assess the Wound ([Wound Assessment & Treatment Flow Sheet](#))

- a. Complete a full wound assessment on any open/damaged skin.
- b. The following findings will also assist with the PI staging:
  - i. Identify wound bed structures such as adipose tissues, muscle, tendon, ligament or (exposed) bone and any bone fragments.
  - ii. Identify areas of undermining, tunneling or sinus tracts.
  - iii. Identify percentage of tissue type and colour.
  - iv. Identify rolled wound edges.

6. Assess for Infection ([Assessment & Treatment of Wound Infection Guideline Summary](#))

- i. Infection usually occurs in wound with a large amount of necrotic tissue/slough or if a foreign body is present.
- ii. Clients with urine and/or fecal incontinence are at greater risk for infection when the pressure injury is located in the sacral, coccyx, and perianal areas.

7. **Determine the Pressure Injury Stage** ([How to Stage a Pressure Injury Educational Resource](#))

Pressure injuries are staged based upon the assessment of tissue loss or damage and exposed underlying structures. PIs are staged as Stage 1, Stage 2, Stage 3, or Stage 4, Unstageable PI, or a Deep Tissue Injury.

**Key points to remember:**

- Mucosal membrane pressure injuries are not staged.
- The depth of tissue damage needed to expose underlying tissue structures varies by the anatomical location. For example, the ear, bridge of the nose, the malleolus and the foot have no/minimal adipose tissue. A Stage 3 or 4 Stage pressure injury in one of these locations will have minimal depth whereas a Stage 3 or Stage 4 pressure injury over an ischial tuberosity may have significant depth but only the adipose tissue is exposed (Stage 3).
- When the wound bed is covered with slough or eschar and the underlying tissues/structures cannot be visualized or identified the wound is staged as an Unstageable pressure injury. Once the wound bed is visible the PI is then re-staged, usually to a Stage 3 or Stage 4, as appropriate.

- Pressure injuries are not reverse-staged. For example, as a Stage 4 pressure injury heals or closes it is not reverse-staged to a Stage 3, Stage 2, and then Stage 1; it is charted as a healing Stage 4 pressure injury.<sup>30</sup>
- When a pressure injury wound has varying depths, it is to be staged based upon the deepest depth visible.
  - a. **Characteristics of a Stage 1:**
    - An area of intact skin with a localized red area with non-blanchable erythema, which may be more difficult to assess in darkly pigmented skin.
    - Colour changes do not include purple or maroon discoloration; these may indicate a deep tissue pressure injury.
    - The area may have changes in sensation such as pain or numbness, firm, soft, warmer or cooler as compared to adjacent tissues.
  - b. **Characteristics of a Stage 2:**
    - Stage 2 pressure injury may present as:
      - i. An area with partial thickness skin loss with exposed dermis and the wound bed is viable, pink or red, and moist, or an
      - ii. Intact./non-intact (ruptured) serum-filled blister.
    - Adipose (fat) tissue and deeper tissues are not visible.
    - Granulation tissue, slough and eschar are not present.
    - Stage 2 Pressure Injury should not be used to describe Moisture Associated Skin Damage(MASD), Incontinence Associated Dermatitis (IAD), intertrigo, adhesive/tape related skin injuries, skin tears, burns, or abrasions.
  - c. **Characteristics of a Stage 3:**
    - An area of full-thickness loss of skin in which adipose (fat) tissue is visible and fascia, muscle, tendon, ligaments, cartilage and or bone are not exposed.
    - Slough and/or eschar may be visible but does not obscure the base of the wound.
    - The depth of tissue damage varies by anatomical location; areas of significant adiposity can develop deep wounds.
    - Undermining and tunneling may occur.
    - Granulation tissue is often present.
    - Epibole (rolled edges) may occur.
  - d. **Characteristics of a Stage 4:**
    - An area of full-thickness skin and tissue loss with exposed or directly visible and palpable fascia, muscle, tendon, ligament, cartilage, bone or hardware in the wound bed.
    - Depth varies by anatomical location.
    - Slough and/or eschar may be visible but does not obscure the base of the wound.
    - Undermining and/or tunneling often occurs.
    - Granulation tissue is often present.
    - Epibole (rolled edges) may occur.
  - e. **Characteristics of an Unstageable Pressure Injury:**
    - An area of full-thickness skin and tissue loss in which the depth of the wound bed is not visible due to the presence of slough or eschar.
    - When boggy slough or eschar is debrided a Stage 3 or Stage 4 PI will be revealed.
    - Stable eschar (i.e., dry, adherent, intact without erythema or fluctuance) on the heel or ischemic limb should not be softened or removed.

- f. **Characteristics of a Deep Tissue Pressure Injury (DTPI):**
- Deep tissue pressure injuries may present as either:
    - i. An area of intact / non-intact skin with localized area of persistent non-blanchable deep red, maroon, purple discoloration
    - ii. An intact / non-intact blister with localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood-filled blister.
  - Pain and temperature changes often precede skin colour changes. Discolouration may appear differently in darkly pigmented skin.
  - The wound may resolve without tissue loss, or the wound may rapidly evolve to reveal the actual extent of the tissue injury, this wound requires re-staging.
  - If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle or other underlying structures are visible, this indicates a full thickness pressure injury (Unstageable, Stage 3 or Stage 4).
  - Do not use DTPI to describe other injuries such as vascular, traumatic, neuropathic, or dermatologic conditions.
8. Complete a comprehensive Lower Limb Assessment if there is a PI on the lower extremity, this will assist in determining the wound healability and the goal of care ([Basic and Advanced Lower Limb Assessment](#)).
9. Consider additional investigations (if available) based on assessment results:
- a. If the lower limb Basic/Advanced Lower Limb Assessment results reflect concerns regarding arterial insufficiency refer to a Physician/NP and/or Wound Clinician for further investigation.
  - b. Albumin or pre-albumin testing for chronic wounds if nutritional concerns are present and the client is not acutely ill.
  - c. Glycosylated hemoglobin (HgA1c) and blood glucose testing if client has, or is at risk of diabetes.
  - d. If the wound probes to bone, notify Physician/NP for radiology investigation.
  - e. Pressure mapping of redistribution support surface(s), if available. Consult with Occupational Therapist (OT).

### Determine the Goal of Care

1. Determine wound care goal (to heal, to maintain, to monitor/manage) based on the overall assessment findings (Link to Wound Bed Preparation). These include:
  - a. Presence of adequate peripheral circulation to support wound healing. For lower extremity wounds an ABI greater than 0.5 indicates that there is healing potential.
  - b. Availability of prevention interventions to promote healing of existing pressure injuries.
  - c. Availability of strategies to prevent development of further pressure injuries.
  - d. Client's level of understanding about the wound etiology (cause), healability, and risk factors.
  - e. Client's clinical condition, quality of life, and body image concerns.
  - f. Client's concerns and the client/family willingness and ability to participate in the care plan.

## **Interventions**

Develop a plan of care, based on the determined goal of care in collaboration with the client and/or family that incorporates client care concerns, management of risk factors, appropriate prevention strategies, wound care management, client outcomes, client and family education, and discharge planning.

### **Client Care Management**

1. Address Client Concerns
  - a. The plan of care should take into account the client/family abilities, concerns, preferences, culture and traditions, and motivation related to goals of care and treatment.
  - b. Develop strategies to address client/family participation in the assessment and treatment plan of care.
  - c. Refer to Social Worker, Counsellor, or Aboriginal Health Representative, if available, for financial or psychosocial concerns and for emotional support and counselling as needed.
  - d. Refer the client to the appropriate professionals to support improved health and wound healing such as the Registered Dietitian-RD - improve nutrition; Occupational Therapists (OT) and Physiotherapist (PT) for functional assessment, pressure redistribution, surfaces, adaptive equipment, wound treatment (High Voltage Pulsed Current -E-Stim), and exercise plans.
2. Manage Risk Factors associated with Wound Healability
  - a. Support the client to monitor any pre-existing health challenges/illnesses, refer to Physician/NP as needed.
  - b. Peripheral neuropathy (e.g., diabetes mellitus), peripheral arterial disease (PAD), or venous insufficiency put the client at higher risk for lower limb skin breakdown and a PI. Consult a Physician/NP or Wound Clinician if the client has peripheral neuropathy, PAD, or venous insufficiency.
  - c. Educate the client and family about taking medication(s) as prescribed. Consult a Pharmacist as needed.
  - d. Support the client in strategies for chronic disease self-management. Refer to Chronic Disease Self-Management Program, if available.
  - e. Support client to stop smoking and discuss referral to a smoking cessation program.
  - f. Support client with substance use management and discuss referral to a substance use program.
  - g. Manage and maintain pressure redistribution surfaces and devices.
  - h. Establish and maintain bowel and bladder toileting routine.
3. Implement prevention strategies based on overall Braden and Braden Q scores and subscale scores ([Prevention of Pressure Injury Guideline](#), [Braden Intervention Guide](#), [Braden Q Intervention Guide](#)).
4. Support Nutritional Therapy ([Prevention of Pressure Injury Guideline](#))
  - a. Establish client's nutritional plan based upon underlying medical conditions, pressure injury stage and client preferences.
  - b. Consult the Registered Dietician for clients with a Stage 3, Stage 4, Unstagable, and Deep Tissue pressure injuries. These pressure injury types require a high caloric diet; arginine, and micro-nutrients may also be required<sup>4</sup> and enteral nutrition may be required to augment overall nutrition if the client is unable to satisfy needs orally.

## 5. Manage and Provide Pain Relief

- a. For a client with wound pain, procedural or treatment-related pain coordinate wound care activities with analgesic administration allowing sufficient time for the analgesic to be effective.
- b. Administer analgesic medication regularly, and as needed, and in the appropriate dosage to control pain. Refer to a Physician/NP if client's pain is not well controlled.
- c. Reassess pain at regular intervals.
- d. Educate client and family about pain management strategies.
- e. Refer to a Wound Clinician, Physician/NP or Pharmacist to determine the need for topical analgesics.
- f. Use dressings that are less likely to cause pain and trauma on removal, such as non-adherent dressings or dressing with silicone layer, and/or those which require less frequent changes.
- g. Encourage repositioning as a means to reduce pain and use support surfaces for pressure redistribution. Consult OT/PT as appropriate.
- h. Document and report any increase in pain quality.

## Wound Care Management

1. Reassess the wound at every dressing change and complete a comprehensive (full) wound assessment weekly according to the care plan or as required by agency policy and the status of the wound ([Wound Assessment & Treatment Flow Sheet](#)).
2. A Wound Clinician and/or Physician/NP must be notified if the wound deteriorates and if the wound is not showing signs of healing after 3 weeks.
3. If a PI is noted on a diabetic or ischemic foot/ limb, a consultation to the Wound Clinician, Physician/ NP is required
4. The overall treatment goal is to promote pressure injury healing according to the principles of Wound Bed Preparation ([Wound Bed Preparation Guideline](#)), if the risk factors contributing to the wound healability have been addressed.
5. **Wound Bed Preparation's moist wound healing protocol is not the treatment for a dry, stable eschar pressure injury wound on the heel.**
6. Determine the most appropriate Pressure Injury Care Plans/Treatment Plans

### Stage 1 Pressure Injury Care Plan

**Goal:** Resolution of the non-blanchable erythema through pressure redistribution.

- Initiate and maintain pressure prevention strategies [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Wound Treatment Plan:
  - Perform hand hygiene.
  - Gently cleanse the area and pat dry.
  - Apply moisturizer or skin barrier to the area.
  - Do not cover injured area with a dressing to allow for visual inspection.
  - Monitor area at least 2x daily for skin breakdown or for resolution of the non-blanchable erythema.
- Refer to the interprofessional team as required.
- Should a Stage 1 Pressure Injury deteriorate, it is to be re-staged to the appropriate pressure injury stage and the care plan modified.

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. *This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.*



## Stage 2 Pressure Injury Care Plan

**Goal:** Moist wound healing through epithelialization and supported by pressure redistribution.

- Initiate and maintain pressure prevention strategies such as off-loading and turning/repositioning [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Consider Moisture Associated Skin Damage risk factors or etiology ([Moisture Associated Skin Damage Guideline](#))
- Wound Treatment Plan:
  - Perform hand hygiene.
  - Determine the most appropriate aseptic technique (e.g., sterile, no-touch, or clean) Cleanse the wound bed and periwound skin as per [Wound Cleansing Procedure](#)
  - For an intact/not intact blister:
    - Consult Wound Clinician or Physician/ NP regarding the need to aspirate the blister if at risk for rupturing or impedes range of motion, or if blistered area is a risk for friction or shear.
    - Protect intact blister with a breathable gauze dressing.
    - If a ruptured blister is present, consult Physician/NP or Wound Clinician for removal of devitalized blister tissue, if needed.
  - For an open area:
    - Protect the periwound skin with a skin protectant, if indicated; except when using a silicone cover dressing
    - Apply an appropriate contact layer, if needed
    - Apply appropriate cover dressing based upon the amount of exudate expected.
    - Determine dressing change frequency based upon the cover dressings ability to manage the anticipated exudate.
    - If unable to maintain the integrity of the dressing, consider using a hydrophilic paste dressing.
    - Protect dressings at risk of contamination from urinary and/or fecal incontinence by using appropriate urine/fecal containment or collection devices. If not effective, consult Wound Clinician or Physician/NP for appropriate dressing.
- Refer to the interprofessional team as required.
- Should a Stage 2 Pressure Injury deteriorate, it is to be re-staged to the appropriate pressure injury stage and the care plan modified.

## Stage 3 Pressure Injury Care Plan

**Goal:** Moist wound healing through granulation and supported by pressure redistribution.

- Initiate and maintain pressure prevention strategies such as off-loading and turning/repositioning as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Wound Treatment Plan:
  - Perform hand hygiene.
  - Determine the most appropriate aseptic technique; sterile or no-touch
  - Cleanse the wound bed and periwound skin as per the [Wound Cleansing Procedure](#)
  - Debride soft, boggy slough or eschar using the most appropriate debridement method. If debridement is not effective within 1 week of treatment consult with a Wound Clinician or Physician/NP.
  - Monitor for and treat S&S of infection.
  - Pack/fill (gently) any dead spaces (wound bed cavity, undermining, sinus tunneling) with an appropriate wound filler

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. *This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.*

- Protect the periwound skin with a skin protectant, if indicated; except when using a silicone cover dressing
- Monitor for periwound maceration related to higher volume of exudate.
- Apply appropriate cover dressing based upon the amount of exudate expected.
- Determine dressing change frequency.
- Protect dressings at risk of contamination from urinary and/or fecal incontinence by using appropriate urine/fecal containment or collection devices. If not effective, then consult Wound Clinician or Physician/NP for appropriate dressing.
- Consult Wound Clinician or Physician/NP for potential additional treatments such as Negative Pressure Wound Therapy, High Voltage Pulsed Current (HVPS/E-Stim) and/or surgical closure or if treatment for epibole (rolled edges) is needed.
- Refer to the Interprofessional team as required.
- Should a Stage 3 Pressure Injury deteriorate, it is to be re-staged to the appropriate pressure injury stage and the care plan modified.

#### **Stage 4 Pressure Injury Care Plan**

**Goal:** Moist wound healing through granulation and supported by pressure redistribution.

- Initiate and maintain pressure prevention strategies such as off-loading and turning/repositioning as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Wound Treatment Plan:
  - Perform hand hygiene.
  - Determine the most appropriate aseptic technique; sterile or no-touch
  - Cleanse the wound bed and periwound as per the [Wound Cleansing Procedure](#)
  - Debride soft, boggy slough or eschar using the most appropriate debridement method. If debridement is not effective within 1 week of treatment consult with a Wound Clinician or Physician/NP.
  - Monitor for and treat S&S of infection.
  - Remove bone fragments, if noted contact the Physician/NP
  - Pack/fill (gently) any dead spaces (wound bed cavity, undermining, sinus tunneling) with an appropriate wound filler.
  - Use a contact layer if not enough moisture to protect exposed fascia, muscle, tendon, ligament, cartilage or bone
  - Protect the periwound skin with a skin protectant, if indicated; except when using a silicone cover dressing
  - Monitor for periwound maceration related to higher volume of exudate.
  - Apply appropriate cover dressing based upon the amount of exudate expected.
  - Determine dressing change frequency
  - Protect dressings at risk of contamination from urinary and/or fecal incontinence by using appropriate urine/fecal containment or collection devices. If not effective, then consult Wound Clinician or Physician/NP for appropriate dressing.
  - Consult Wound Clinician or Physician/NP for potential additional treatments such as Negative Pressure Wound Therapy, High Voltage Pulsed Current (HVPS/E-Stim) and/or surgical closure or if treatment for epibole (rolled edges) is needed.
- Refer to the Interprofessional team as required.

### **Unstageable Pressure Injury Care Plan - Dry, stable eschar (e.g., heel or ischemic limb).**

**Goal:** Maintain the dry, stable eschar as a protective cap and allow the wound to heal on its own under the cap

- Initiate and maintain pressure prevention strategies such as off-loading and turning/repositioning as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Wound Treatment Plan:
  - Perform hand hygiene.
  - Determine the most appropriate aseptic technique (e.g., sterile, no-touch, or clean)
  - **Keep the eschar area dry.**
  - **Do not cleanse with normal saline, water or other solutions.**
  - **Protect the eschar area from water during showering. Do not tub bath or soak eschar area.**
  - Paint the eschar and 2.5cm of the periwound skin daily, or every other day, with an antiseptic e.g. povidone iodine 10%. Do not wash off the previously applied iodine, apply a new layer and allow to air dry ([Product Information Sheet](#)).
    - If the client cannot use povidone iodine apply chlorhexidine 2% following the same steps above.
  - Protect the unpainted surrounding skin with a moisturizer, if needed.
  - Leave open to the air or apply a dry breathable protective dressing such as a dry gauze, if indicated.
  - Do not use gels, foams, transparent dressings, or hydrocolloids or any other moisture retentive dressings.
  - Monitor for and treat S&S of infection.
  - If the dry eschar cap begins to lift, or if it becomes moist or boggy, debridement may be required. Consult a Wound Clinician or a Physician/NP as this requires a change in care plan.

### **Unstageable Pressure Injury Care Plan - Soft, boggy eschar**

**Goal:** Debridement of soft, boggy eschar and/or slough.

- Initiate and maintain pressure prevention strategies such as off-loading and turning/repositioning as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Wound Treatment Plan:
  - Perform hand hygiene.
  - Determine the most appropriate aseptic technique; sterile or no-touch
  - Cleanse the wound bed and periwound skin as per the [Wound Cleansing Procedure](#)
  - Debride soft, boggy slough or eschar using the most appropriate debridement method. If debridement is not effective within 1 week of treatment consult with a Wound Clinician or Physician/NP.
  - Monitor for and treat S&S of infection.
  - Gently fill/pack any dead spaces, tunneling, wound bed cavity, or undermining with an appropriate wound filler product to ensure debridement/decrease bacterial load and moisture balance.
  - Protect the periwound skin with a skin protectant, if indicated; except when using a silicone cover dressing
  - Monitor for periwound maceration related to higher volume of exudate.
  - Apply appropriate cover dressing based upon the amount of exudate expected,
  - Determine dressing change frequency.

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. [This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.](#)

- Protect dressings at risk of contamination from urinary and/or fecal incontinence by using appropriate urine/fecal containment or collection devices. If not effective, then consult Wound Clinician or Physician/NP for appropriate dressing.
- When the wound bed is sufficiently exposed, re-stage to Stage 3 or Stage 4 Pressure Injury and follow the appropriate care plan.

### **Deep Tissue Pressure Injury Care Plan**

**Goal:** Maintain the purple or maroon localized area of intact skin/blister

- Initiate/maintain pressure prevention strategies such as off-loading and turning/ repositioning as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Address modifiable risk factors.
- Address wound discomfort/pain.
- Wound Treatment Plan:
  - Perform hand hygiene.
  - **Keep the injured area dry.**
  - **Do not cleanse with normal saline, water or other solutions.**
  - **Protect the injured areas from water during showing. Do not tub bath or soak.**
  - Protect the surrounding skin with a moisturizer, if needed.
  - Leave open to the air, or apply a dry breathable protective dressing in consultation with Wound Clinician. Do not use gels, foams, transparent dressings, or hydrocolloids or any other moisture retentive dressing.
  - Monitor for and treat signs and symptoms of infection.
  - Consult Wound Clinician or Physician/ NP regarding the need to aspirate the blister if at risk for rupturing or impedes range of motion, or if blistered area is a risk for friction or shear.
  - If a ruptured blister is present, consult Physician/NP or Wound Clinician for removal of devitalized blister tissue, as per protocol, if needed.
- The deep tissue pressure injury may resolve without tissue loss, or may deteriorate slowly or rapidly. If the deep tissue pressure injury area deteriorates (moist or boggy) debridement is required. Consult a Wound Clinician or a Physician/NP as this requires a change in care plan and the injury is to be re-staged to an Unstageable Pressure Injury (See Care Plan steps above).

### **Medical Device-Related Pressure Injury Care Plan**

**Goal:** Moist wound healing and device management.

- Initiate/maintain pressure prevention strategies as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#)
- Initiate and maintain moisture prevention strategies (see MASD Guideline & Summary).
- Address client's modifiable risk factors.
- Wound Treatment Plan:
  - Based on the pressure injury stage, follow the appropriate care plan above.
  - Ensure correct fit of all medical device(s) to prevent and minimize friction and shear.
  - Continue to examine skin under and around the device 2 times per shift.
  - Consider use of anchoring devices designed to secure tubing.
  - Reposition the anchoring of medical lines, catheters, tubes, as necessary.
  - Refer to appropriate healthcare professional to assist with proper fitting of medical device, if needed, such as Respiratory Therapist, OT, PT, RD, or Wound Clinician.

### **Mucosal Membrane Pressure Injury Care Plan**

**Goal:** Mucosal membrane healing and correct fit of device.

- Initiate/maintain pressure prevention strategies as per [Braden Interventions Guide](#) or [Braden Q Interventions Guide](#).
- Address client's modifiable risk factors.
- Wound Treatment Plan:
  - Perform hand hygiene prior to any contact with the injury.
  - Examine mucosa under and around the device at least 2 times per shift, if possible.
  - Ensure correct sizing of medical related device(s) such as nasogastric, tracheostomy or endotracheal tubes, urinary catheter tubing.
  - Reposition medical related device, if possible.
  - Refer to appropriate healthcare professional to assist with proper fitting of medical device, if needed, such as Respiratory Therapist, OT, PT, RD, or Wound Clinician.

### **End-of-Life Skin Changes Care Plan**

**Goal:** Prevention and symptom management

- Based upon the assessment of a Stage 1, Stage 2, Stage 3, or Stage 4, an Unstageable Pressure Injury or Deep Tissue Injury, monitor/manage the wound following the care plan strategies listed above with becoming the goal of care

7. Wound Infection Prevention and Interventions ([Wound Infection Guideline](#) & [Guideline Summary](#))
  - a. Implement strategies to prevent infection such as hand hygiene protocols and appropriate aseptic dressing technique and appropriate management of dressing supplies.
  - b. Debride nonviable tissue, if appropriate. Use most appropriate wound debridement method.
  - c. For wounds with significant bioburden and/or signs and symptoms of local infection use broad spectrum antimicrobial dressings. ([Wound Bed Preparation Guideline](#))
  - d. For wounds with local infection consult with Wound Clinician and/or Physician/NP.
  - e. Notify a Physician/NP if signs and symptoms of spreading or systemic infection are present or if the wound probes to bone.
8. Notify the Wound Clinician or Physician/NP if any of the following occur:
  - a. There is an acute onset of pain or increasing pain.
  - b. The wound probes to bone or if there are bone fragments, if this is a new finding.
  - c. The client develops multiple wounds.
  - d. The wound deteriorates.

### **Client Education and Resources**

1. Teach and educate the client and/or family about the:
  - a. Interprofessional wound care team roles such as OT/PT, RD, Pharmacist, Physician/NP and Wound Clinician.
  - b. Strategies to maintain clean well-moisturized skin, and to avoid chemical, sensitizing, and mechanical skin trauma.
  - c. Strategies for reducing or eliminating moisture, friction and shear- Importance of proper positioning and strategies for pressure redistribution.
  - d. Signs of pressure injuries.
  - e. Strategies for managing pain.
  - f. Strategies for improving nutrition, especially increasing protein and fluid intake and weight management, if not contraindicated.
  - g. Equipment management and replacement.

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. [This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.](#)

- h. If the client and/or family are able to participate in wound care, teach hand hygiene and how to safely change dressing.
  - i. Teach the normal stages of wound healing and that the maturation of skin takes up to one year and only recovers to 80% tensile strength.
  - j. Signs and symptoms of wound deterioration including infection, increased pain, and the need to liaise and communicate with a healthcare professional when these issues occur.
  - k. Benefits of smoking cessation, refer client to a smoking cessation program if willing.
  - l. Role of substance use programs and refer if the client is willing.
  - m. Education concerning relevant chronic disease processes. Specifically, how chronic disease(s) affects the healing process and the importance of actively participating in the care plan and the need for follow-up with a healthcare professional at regular intervals. Refer to chronic disease self-management program, if willing.
2. Provide and document any written materials given to the client/family that support and reinforce PI education.

### **Discharge Planning**

1. When transitioning/transferring a client to another unit or to another care setting (acute, community, residential care) ensure the receiving unit/facility is provided with a care plan that outlines the current client care including the:
  - Braden Risk Assessment
  - Wound care goal
  - Wound assessment,
  - Wound treatment plan and
  - Interventions to prevent further pressure injuries from occurring and support the healing of the current injury(s).
2. Advance notice should be given when transferring clients with advanced wound care therapies and/or specialized pressure prevention equipment to ensure it is in place at the time of transition or transfer.
3. Discharge planning should be started during the initial client encounter and should support timely discharge and optimal client independence.

### **Client Clinical Outcomes**

1. Intended
  - a. The healable pressure injury heals.
  - b. The non-healing pressure injury does not deteriorate and remains infection free until internal and external factors are mitigated.
  - c. The non-healable pressure injury remains infection free.
  - d. The client and family understand their role in preventing further pressure injury and incorporate activities such as position shifts, frequent turning, eliminating pressure from heels and feet, skin examination especially over bony prominences and good nutrition into their daily activities.
  - e. The client's pain is managed.
2. Unintended
  - a. The healable pressure injury deteriorates.
  - b. The non-healing pressure injury does deteriorate and is not infection free.
  - c. The non-healable pressure injury does not remain infection free.

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. [This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.](#)

- d. The client and family does not understand their role in preventing further pressure injury damage and incorporate activities such as position shifts, frequent turning, eliminating pressure from heels and feet, skin examination especially over bony prominences and good nutrition into their daily activities.
- e. The client's pain is not managed.

### **Quality Assurance Indicators**

The following quality assurance indicators could be used by the Health Authority/Agency/Facility to ensure that the assessment, treatment, interventions, and re-evaluation of all pressure injuries occurred:

- The pressure injury was correctly staged.
- The appropriate pressure injury care plan was implemented to meet the planned goal of care.
- Interventions are in place to decrease the risk of developing an infection.
- Interventions are in place to support pressure injury wound healing and to prevent new pressure injuries from developing.
- The pressure injury is reported as a safety event and is reported as per health authority/ agency guidelines.

### **Documentation**

1. Document initial and ongoing wound assessment, goals, and treatment.
2. Document staging and re-staging as required.
3. Document the education and written materials discussed with and given to the client and family.
4. If the client develops a pressure injury, deep tissue pressure injury, medical-device related pressure injury, mucosal membrane pressure injury, or end-of-life skin changes report the 'safety event' as per health authority or agency guidelines.

### **Definitions**

**Ankle Brachial Pressure Index (ABI)** - A numerical figure that indicates the amount of arterial blood flow to the extremity. It is determined using a handheld or automatic Doppler ultrasound to compare the ankle systolic pressure and the brachial systolic pressure; the ABI is a ratio of the two.<sup>8</sup>

**Aseptic Technique** - Technique used to limit the transfer of microorganisms from one person to another by minimizing the microbe count and preventing cross-contamination; includes sterile, no-touch and clean technique. The technique chosen is based on the clinical condition of the client, type and healability of the wound, invasiveness of the dressing procedure, goal of care and agency policy:

- **Sterile Technique** - the use of sterile gloves, sterile field, sterile tray, sterile instruments, sterile solution and sterile dressings; only sterile gloved hands or instruments are used for direct contact with the wound.
- **No-Touch Technique** - the use of clean gloves and a sterile field, sterile tray, sterile instruments, sterile solution and sterile dressings; only sterile instruments are used for direct contact with the wound.
- **Clean Technique** - the use of clean gloves (single client use, non-sterile), a clean field, a clean or sterile dressing tray, clean instruments (single client use), clean solution (single client use) and clean dressings and/or instruments; clean gloved hands are used for direct contact with the wound.

**Autolytic debridement** - The use of the body's endogenous enzymes to slowly remove necrotic tissue from the wound bed. This can be facilitated with the use of gels and moisture retentive dressings to soften or liquefy necrotic tissue. This is a slower method, yet is less harmful to the patient and wound bed than other methods.<sup>9</sup>

**Autonomic dysreflexia** - A syndrome affecting persons with a spinal cord lesion above the mid-thoracic level (T6); characterized by hypertension, bradycardia, sweating, severe headaches, convulsions as well as pallor below

and flushing above the cord lesions. It is caused by simultaneous sympathetic and parasympathetic activity and may occur with bowel or bladder distension, pain or pressure injuries.<sup>8</sup>

**Bottoming Out** - A term used to indicate when a reactive or an active support surface provides insufficient support to adequately redistribute pressure when a client is in a sitting or lying position.<sup>4</sup> Check individual therapeutic support surface manufacturer recommendations for assessing bottoming out.

**Capillary Refill Assessment** - This is the assessment of small-diameter vessels that lie between the venous and arterial systems. This is the length of time it takes for the capillary bed to fill (return to normal skin colour) or resume after pressure applied to a finger or toe nailbed causes the area to blanche.<sup>10</sup> Normal capillary refill is affected by age, gender and ambient temperature. Normal refill time is less than or equal to 2 seconds in children and less than or equal to 3 seconds in adults, however normal refill times increase with age and are usually higher in adult women than in men. Abnormal values may indicate dehydration or impaired peripheral perfusion. Capillary refill is one part of comprehensive assessment

**Children** - Clients are considered children if they are 17 years and under.

**Client** - Recipients of care: in the community-client; in residential care-resident; and in acute care- patient.

**Client/Family** - Family is two or more individuals coming together for mutual aid. Families are self-defined, individualized, and 'who the client says their family is'.<sup>11</sup>

**Debridement** - The removal of devitalized tissue from or adjacent to a wound. The process supports removal of wound bed exudates, loosens bacterial colonies and allows a stimulatory environment to be established.

Debridement takes several forms: autolytic, biological (larval), conservative sharp, enzymatic, maintenance, mechanical, and surgical/sharp debridement.<sup>4,9</sup>

**End of Life Care** - A phase of care associated with advanced, life-limiting illnesses, and focuses on comfort, quality of life, and respect for personal health care treatment decisions, family support and psychological and spiritual concerns.<sup>33</sup>

**End-of-Life Skin Failure** - Skin changes that occur within 2 weeks of death, and/or may rapidly occur within 24 hours of death, despite optimal prevention strategies being in place.<sup>34,35</sup> Kennedy Terminal PIs are one type of end-of-life skin change (see Definitions). The acronym SCALE is used to capture these specific skin changes (Skin Changes At Life's End).

- **Kennedy Terminal Ulcer** - A sub group of PIs that occurs most often in older adults with a terminal illness and may be a precursor to imminent death; these PIs occur suddenly and first appear as an abrasion or blister but rapidly progress to Stage 2, 3 or 4 PI. They are usually located on the sacrum or coccyx and are yellow or black in color with irregular edges. They are pear, butterfly or horseshoe shaped and are usually non-healable and may not be preventable.<sup>14</sup>

**Erythema** - Redness of the skin caused by dilation and congestion of the capillaries; often a sign of inflammation or infection. Erythema is of two types:

- 1) **Blanchable Erythema** - A visible reddened area that becomes white when pressure is applied and reddens when pressure is relieved. It may result from normal reactive hyperemia that should disappear within several hours, or it may result from inflammatory erythema with an intact capillary bed. For darkly pigmented skin erythema may cause hyperpigmentation with no redness visible. It may appear as a dark bluish-purple hue.
- 2) **Non-blanchable Erythema** - Characterized by an area of redness that does not blanche (turn pale) in response to applied pressure. The redness is due to the pressure of the red blood cells outside of the blood vessels and is considered the first stage of a pressure injury.<sup>64</sup> Using the 'finger pressure method' assess a reddened area (reactive hyperemia) for non-blanching when pressed for 3 seconds. Non-blanchable erythema is harder to assess in clients with darker skin tones.

**Friction** - A frictional force, or resistance to motion in a parallel direction that occurs with repeated dragging or movement over surfaces such as bed linens. It results in the loss of the protective layers of skin and reduces the amount of pressure needed to cause breakdown.<sup>4</sup>

**Fluctuance** - Occurs when the wound or periwound has a wave-like motion when pressure is digitally applied over an area, you can push and feel a 'give' indicating fluid underneath. This may indicate a sign of an abscess.<sup>12</sup>

**Full thickness wound** - Full thickness injury involving loss of tissue into the subcutaneous layer (Stage 3 & 4 PIs), disrupting dermal blood vessels; it may include damage to underlying structures such as muscle, tendon or bone; these wound heals by granulation and scar formation.<sup>4</sup>



**Irrigation (wound)** - The use of fluid into a wound and/or wound cavity at 8-15 psi to support removal of slough and/or necrotic tissue from the wound bed without damaging healthy tissue.

**Induration** - The hardening of a normally soft tissue. The hardening occurs related to edema, inflammation, and or bruising.

**Knee gatch** - A adjustable bed frame feature that allows the knees to be flexed and raised; the legs are fully supported by the bed when raised<sup>15</sup>

**Medical Device Related Pressure Injury** - Pressure injury resulting from the use of medical devices “designed and applied for diagnostic or therapeutic purposes”. The resultant PI generally conforms to the pattern or shape of the device; the injury should be staged using the staging system”<sup>3,p.1</sup>

**Microclimate** - Refers to the local temperature and moisture at the skin’s surface where it comes into contact with a support surface, bed linens, and another skin surface, when compared to the remaining body surface area.<sup>36</sup>

**Mucosal membrane pressure injury** - Pressure injury found on mucous membranes where there is a “history of a medical device in use at the location of the injury; due to the anatomy of the tissue these injuries cannot be staged”<sup>3,p.1</sup>

**Pain Scales** - Pain is a multidimensional assessment, including physical, emotional, and functional domains.

The following pain assessment scales have been designed for various age groups and conditions:

- **Behavioural Pain Scale (BPS)** - Used to quantify pain in intubated patients.
- **CRIBS** - Used for neonates to rate their pain by assessing crying, level of oxygen use, vital signs, facial expression, and ability to sleep (sleeplessness).<sup>18,19</sup>
- **FLACC** - Face, Legs, Arms, Cry, and Consolability is a behavioural pain scale used for clients from newborn to age 3 (based on nursing judgment).<sup>20</sup>
- **McGill Pain Questionnaire (McGill Pain Index)** - A self-report scale for clients to rate the quality and intensity of pain related to the pressure injury.<sup>19</sup>
- **Non-Communicative Patient’s Pain Assessment Instrument (NOPPAIN)** - This is an instrument used to record the clinician’s observations and rating of pain behaviors in clients with dementia.
- **Numeric Rating Scale (NRS)** - The NRS involves asking the client to rate their pain from 0-10 (0= no pain and 10 = worst possible pain).<sup>21</sup>
- **Pain Assessment in Advanced Dementia Scale (PAINAD)** - A tool used to rate pain for client’s living with advanced dementia. This clinician-based tool is used to rate the client’s pain after observing them for 5 minutes before scoring; the client is observed at rest, a pleasant activity, care-giving, or after pain med administration.
- **Visual Analog Scale (VAS)** - A VAS consists of a scale with face images depicting extremes of pain from no-pain to worst pain.<sup>21</sup>
- **Wong-Baker FACES Pain Rating Scale** - This is a visual rating scale that asks clients to choose the face on the scale that best depicts the pain they are experiencing. Clients rate their pain from 0 = does not hurt, to 10 = hurts as much as the client can imagine.<sup>21</sup>

**Panniculus** – a dense layer of subcutaneous fatty tissue growth in the abdominal area. In extreme cases the fatty pad hangs over the groin.

**Partial thickness wound** - Partial thickness skin loss involving the epidermis and superficial dermis with no damage to the dermal blood vessels; it is superficial and presents as a shallow crater, abrasion or blister; healing occurs by epithelialization. Includes Stage 1 & 2 pressure injuries.<sup>4,6</sup>

**Pressure Redistribution Device** - Device used to manage pressure loads in order to prevent PIs or promote healing; includes mattresses, integrated bed systems, overlays, seating cushions, pillows and seating cushion overlays and offloading devices such as foam supports and heel boots.<sup>23</sup>

#### **Pressure Injury**

- “Localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device.
- The injury can present as intact skin or an open wound and may be painful.
- The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear.
- The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue”<sup>64 p.1</sup>

**Pressure Injury Staging** - An assessment process that classifies by stage a PI based on the depth of soft tissue damage or loss. PIs **are not** reverse staged, for example a Stage 4 PI, as it heals, is not reverse staged to a Stage 3, Stage 2, Stage 1; it is charted as a healing Stage 4.<sup>30</sup> Re-staging of a PI may occur once the depth and underlying structures if any have been determined,

- **Stage 1 Pressure Injury: Non-blanchable erythema of intact skin** - Intact skin with a localized area of “non-blanchable erythema, which may appear differently in darkly pigmented skin. Presence of blanchable erythema or changes in sensation, temperature, or firmness may precede visual changes. Color changes do not include purple or maroon discoloration; these may indicate deep tissue pressure injury”.<sup>64 p.1</sup> The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissues. Stage 1 injuries may be difficult to detect in persons with dark skin tones.<sup>60</sup>
- **Stage 2 Pressure Injury: Partial thickness skin loss with exposed dermis** - Partial thickness loss of skin with exposed dermis. The wound bed is “viable, pink or red, moist, and may also present as an intact or ruptured serum-filled blister. Adipose (fat) is not visible and deeper tissues are not visible. Granulation tissue, slough and eschar are not present. These injuries commonly result from adverse microclimate and shear in the skin over the pelvis and shear in the heel”.<sup>64,p.1</sup> Stage 2 injuries should not be used to describe MASD, IAD, intertrigo, or adhesive/tape related skin injuries, or traumatic wounds such as skin tears, burns, or abrasions.
- **Stage 3 Pressure Injury: Full thickness skin loss** - Full-thickness loss of skin, in which “adipose (fat) is visible in the pressure injury and granulation tissue and epibole (rolled wound edges) are often present. Slough and/or eschar may be visible. The depth of tissue damage varies by anatomical location; areas of significant adiposity can develop deep wounds. Undermining and tunneling may occur. Fascia, muscle, tendon, ligament, cartilage and/or bone are not exposed. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.”<sup>64,p.1</sup>
- **Stage 4 Pressure Injury: Full thickness skin and tissue loss** - Full-thickness skin and tissue loss with “exposed or directly palpable fascia, muscle, tendon, ligament, cartilage or bone in the pressure injury. Slough and/or eschar may be visible. Epibole (rolled edges), undermining and/or tunneling often occur. Depth varies by anatomical location. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury”.<sup>64,p.1</sup>
- **Unstageable Pressure Injury: Obscured full-thickness skin and tissue loss** - Full-thickness skin and tissue loss in which the “extent of tissue damage within the pressure injury cannot be confirmed because it is obscured by slough or eschar. If slough or eschar is removed, a Stage 3 or Stage 4 pressure injury will be revealed. Stable eschar (e.g., dry, adherent, intact without erythema or fluctuance) on an ischemic limb or the heel(s) should not be removed”.<sup>64,p.1</sup>
- **Deep Tissue Pressure Injury (DTPI): Persistent non-blanchable deep red, maroon, or purple discoloration** - Intact or non-intact skin with “localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood filled blister. Pain and temperature change often precede skin colour changes. Discolouration may appear differently in darkly pigmented skin. This injury results from intense and/or prolonged pressure and shear forces at the bone-muscle interface. The wound may evolve rapidly to reveal the actual extent of tissue injury, or may resolve without tissue loss. If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle or other underlying structures are visible, this indicates a full thickness pressure injury (Unstageable, Stage 3 or Stage 4). Do not use DTPI to describe vascular, traumatic, neuropathic, or dermatologic conditions”.<sup>64,p.1</sup>
- **Medical Device Related Pressure Injury** - This describes the etiology of the injury. Use the staging system to stage these injuries. Medical device related pressure injury result from the use of “devices designed and applied for diagnostic or therapeutic purposes. The resultant pressure injury generally conforms the pattern or shape of the device (e.g., tubes, splints, drains, restraints); the injury should be staged using the staging system”.<sup>64,p.1</sup>
- **Mucosal Membrane Pressure Injury** - Mucosal membrane pressure injury is “found on mucous membranes with a history of a medical device in use at the location of the injury; due to the anatomy of the tissue these injuries cannot be staged”.<sup>64,p.1</sup>

**Pressure Injury - Unavoidable** - These injuries may occur even though the clinicians (health authority/agency) has evaluated the client’s clinical condition and pressure injury risk factors; defined and implemented

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. **This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.**

interventions consistent with individualized goals and treatment/prevention strategies; and consistently reassessed client's needs. Potential contributing factors to unavoidable PIs include: mobility/activity limitations; perfusion/hemodynamic instability; critical illness; skin and tissue failure; multi-organ failure, and/or malnourishment.<sup>5,24</sup>

**Shear** - A mechanical force that moves underlying bony structures in an opposite direction to overlying tissue leading to tissue ischemia and ulceration or undermining/tunneling and possibly deep sinus tracts beneath a pressure injury.<sup>19</sup>

**Wound Bed Tissue Types** - This refers to the tissue types that are present in the wound bed.<sup>25</sup>

- **Boggy:** Soft, spongy tissue.
- **Epithelial islands:** Within an open wound bed, island or small areas of epithelial tissue proliferate and migrate from the center to the edge of the wound.
- **Epithelialized tissue:** Wound is covered completely with new epithelial tissue.
- **Eschar - dry, stable:** Firm, dry necrotic tissue with an absence of drainage, edema, erythema or fluctuance. Presents as brown or black in colour, and is attached to the wound edges and wound base.
- **Eschar - soft, boggy:** Soft necrotic tissue which is black, brown, grey, or tan in colour. Presents as firmly or loosely attached to the wound edges and wound base; fluctuance and drainage may be present.
- **Friable tissue:** Is fragile wound tissue that may easily bleed.
- **Fungating tissue:** Cancerous, or non-cancerous tissue that is rapidly growing; it may appear with a 'cauliflower like' lesion, or a ulcerating wound with a crater.
- **Granulation tissue:** Firm, red, moist, and/or pebbled healthy tissue.
- **Hypergranulation tissue:** Red, moist tissue raised above the level of the skin (proud flesh)
- **Slough:** Dry or wet, or loose, or firmly attached, yellow to brown devitalized tissue.

## References

1. National Pressure Ulcer Advisory Panel. (2014, October). *Prevention and treatment of pressure ulcers: Quick reference guide*. Retrieved from <http://www.npuap.org/resources/educational-and-clinical-resources/prevention-and-treatment-of-pressure-ulcers-clinical-practice-guideline/>
2. National Pressure Ulcer Advisory Panel. (2016, April). *NPUAP Pressure injury stages*. Retrieved from <http://www.npuap.org/resources/educational-and-clinical-resources/npuap-pressure-injury-stages/>
3. National Pressure Ulcer Advisory Panel. (2016, April). *Pressure injury prevention points*. Retrieved from <http://www.npuap.org/wp-content/uploads/2016/04/Pressure-Injury-Prevention-Points-2016.pdf>
4. National Pressure Ulcer Advisory Panel. (2014). *Prevention and treatment of pressure ulcers: Clinical Practice Guidelines*. ISBN 10: 0-9807396-509
5. Black, J et al. (2011). Pressure ulcers: Avoidable or unavoidable? Results of the national pressure ulcer advisory panel consensus conference. *OWM*, 57(2), 24-37. Retrieved from <http://www.npuap.org/wp-content/uploads/2012/01/A-UA-pr-ul1.pdf>
6. National Institute for Health and Clinical Excellence. (2014, April). *Pressure ulcers: Prevention and management*. (Clinical Guideline- CG179). Retrieved from <https://www.nice.org.uk/guidance/CG179/chapter/Introduction>
7. Ayello, E. A., et al. (2016). Pressure ulcers: Chapter 13. In S. Baranoski & E. A. Ayello (Eds.), *Wound care essentials: Practice principles*. 4<sup>th</sup> ed., Philadelphia: Wolters Kluwer. (pp. 309-339).
8. Doughty, D. B., (2016). Arterial ulcers. In R. A. Bryant & D. P. Nix (Eds.), *Acute & chronic wounds: Current management concepts*, 5<sup>th</sup> ed., (pp. 186-203). St. Louis, Missouri: Elsevier. .
9. Ayello, E. A., Sibbald, R. G., & Baranoski, S. (2016). Wound debridement. In S. Baranoski & E. A. Ayello (Eds.), *Wound care essentials: Practice principles*, 4<sup>th</sup> ed., (pp. 149-170). Philadelphia: Wolters Kluwer.
10. Ermer-Seltun, J. (2016). Lower extremity assessment. In R. A. Bryant, & D. P. Nix. (Eds.), *Acute & chronic wounds: Current management concepts*. 5<sup>th</sup> ed., (pp. 177-185). St. Louis, Missouri: Elsevier.
11. Wright, L. M., & Leahey, M. (2013). *Nurses and families: A guide to family assessment and intervention*. (6<sup>th</sup> ed.). F. A. Davis.
12. Dhar, D. A. (2016). *Cutaneous abscesses*. Merck Manual Professional Version. Retrieved from <http://www.merckmanuals.com/professional/dermatologic-disorders/bacterial-skin-infections/cutaneous-abscess>
13. Sibbald G., et al. (2006). Best practice recommendations for preparing the wound bed: Update 2006. *Wound Care Canada*, 4(1), 15-29.

**Note:** This is a **controlled** document. A printed copy may not reflect the current, electronic version on the CLWK Intranet ([www.clwk.ca](http://www.clwk.ca)). Any document appearing in paper form should always be checked against the electronic version prior to use; the electronic version is always the current version. **This DST has been developed as a guide to support nursing practice in British Columbia, however it is not a substitute for education, experience & the use of clinical judgment.**

14. Sibbald, G., et al. (October 1, 2009). *The SCALE expert panel: Skin changes at life's end. Final Consensus document*. Retrieved from <http://www.woundresearch.com>
15. Merriam-Webster Dictionary. (2016). *Medical definition knee gatch (bed)*. Retrieved from <http://www.merriam-webster.com/medical/gatch%20bed>
16. Bryant, R. A, & Nix, D. P. (2016). *Acute & chronic wounds: Current management concepts*. 5<sup>th</sup> ed., St. Louis, Missouri: Elsevier.
17. Sugino, H., et al. (2014). Relation between the serum albumin level and nutrition supply in patients with pressure ulcers: Retrospective study in an acute care setting. *Journal of Medical Investigation*, 61(1), 15-21. PMID: 24705743
18. Krechel, S. W., & Bildner, J. (1995). CRIES: A new neonatal postoperative pain assessment measurement score. Initial testing of validity and reliability. *Pediatric Anaesthesia*, 5, 53-61. Retrieved from <http://prc.coh.org/pdf/CRIES.pdf>
19. Wound Ostomy & Continence Nurses Society. (2016). *Guidelines for prevention and management of pressure ulcer (injuries): WOCN clinical practice guideline series 2*. Mt. Laurel, NJ: Author
20. Voepel-Lewis, T., et al. (2010). Reliability and validity of the face, legs, activity, cry, consolability behavioral tool in assessing acute pain in critically ill patients. *American Journal of Critical Care*, 19(1), 55-61. doi: 10.4037/ajxx2010624
21. Dallam, L. E., et al. (2016). Pain management and wounds. In S. Baranoski & E. A. Ayello (Eds.), *Wound care essentials: Practice principles*, 4<sup>th</sup> ed., (pp. 281-306). Philadelphia: Wolters Kluwer.
22. Despatis, M., et al. (2008). Complex wounds: WUWHS report. *Wound Care Canada*, 6(2), 24-25.
23. Brienza, D. M., et al. (2016). Pressure, redistribution: Seating, positioning, and support surfaces. In S. Baranoski & E. A. Ayello (Eds.), *Wound care essentials: Practice principles*, 4<sup>th</sup> ed. (pp. 251-280). Philadelphia: Wolters Kluwer.
24. Edsberg, L. E., et al. (2014). Unavoidable pressure injury: State of the science and consensus outcomes. *JOWCN*, 41(4), 313-334.
25. National Pressure Ulcer Advisory Panel. (1998). *Pressure ulcer healing score (PUSH) tool*. Retrieved online <http://www.npuap.org/resources/educational-and-clinical-resources/push-tool/push-tool/>
26. Kottner, J et al. (2009). Pressure ulcers: A critical review of definitions and classifications. *Ostomy/Wound Management*, 55(9), 22-29.
27. Kirman, C. N. (2016, June 20). *Pressure ulcers and wound care treatment & management*. Retrieved from <http://emedicine.medscape.com/article/190115-treatment>
28. Langemo, D., et al. (2008). Heel pressure ulcers: Stand guard. *Advances in Skin and Wound Care*, 21(6), 282-294.
29. Beitz, J. M. (2014, Jan). Providing quality skin and wound care for the bariatric patient: An overview of clinical challenges. *OWM*, 61(1) 12-21. Retrieved from <http://www.o-wm.com/article/providing-quality-skin-and-wound-care-bariatric-patient-overview-clinical-challenges>
30. National Pressure Ulcer Advisory Panel. (2000). *The facts about reverse staging in 2000: The NPUAP position statement*. Retrieved from <http://www.npuap.org/wp-content/uploads/2012/01/Reverse-Staging-Position-Statement%E2%80%A8.pdf>
31. Lowe, J. R. (2009). Skin integrity in critically ill obese clients. *Critical Care Nursing Clinics North America*, 21(3). doi: 10.1016/j.ccell.2009.07.007 Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2892378/>
32. Centers for Disease Control and Prevention. (2017). *Definition of invasive candidiasis*. Retrieved from <https://www.cdc.gov/fungal/diseases/candidiasis/invasive/definition.html>
33. British Columbia Ministry of Health. (2013, March). The provincial end-of-life care action plan: Priorities and actions for health system and service redesign. Retrieved from <http://www.health.gov.bc.ca/library/publications/year/.../end-of-life-care-action-plan.pdf>
34. Langemo, D. K., & Black, J. (2010). Pressure ulcers in individuals receiving palliative care: A national pressure ulcer advisory white paper. From NPUAP. *Wound Care Journal*, 23(2) 59-72.
35. Sibblad R. G., et al. (2009). SCALE: Skin changes at life's end. *Wounds*, 21(12), 329-336.
36. KCI. (2011). *KCI clinical support for SKIN IQ microclimate manager*. SanAntino, Texas: KCI Licensing.

## **Bibliography**

- Bale, S., & Jones, V. (2006). *Wound care nursing: A patient-centred approach* (2<sup>nd</sup> ed.). Edinburgh: Mosby Elsevier.
- Campbell, K., et al. (2010). Implementation of best practice in the prevention of heel ulcers in the acute orthopedic population. *International Wound Journal*, 7(1): 28-40.
- Dorner, B., et al. (2009). *The role of nutrition in pressure ulcer prevention and treatment: National pressure ulcer advisory panel white paper*. Washington DC: NPUAP. Retrieved from <http://www.npuap.org>
- Doughty, D. B., (2006). Glossary: Autonomic dysreflexia. In D. B. Doughty (Ed.). *Urinary & fecal incontinence: Current management concepts*, (3<sup>rd</sup> ed.) (pp. 547-561), St. Louis, Missouri: Mosby Elsevier.
- European Pressure Ulcer Advisory Panel & National Pressure Ulcer Advisory Panel (2009). *Prevention and treatment of pressure ulcers: Clinical practice guideline*. Washington DC: National Pressure Ulcer Advisory Panel.
- Fowler, E., et al. (2008). Practice recommendations for preventing heel pressure ulcers. *Ostomy Wound Management*, 54(10), 42- 57.
- Hanson, D., et al. (2010). Friction and shear considerations in pressure ulcer development. *Advances in Skin and Wound Care*, 23(1), 21-24.
- Junkin, J., et al. (2009). Are pressure redistribution surfaces or heel protection devices effective for preventing heel pressure ulcers? *Journal of Wound Ostomy Continence Nursing*, 36(6), 602- 608.
- Keast, D, et al. (2006). Best practice recommendations for the prevention and treatment of pressure ulcers: Update 2006. *Wound Care Canada*, 4(1), 31-43. Kennedy-Evans, K., (2009). Understanding the Kennedy terminal ulcer. *Ostomy/Wound Management*, 55(9),6.
- Krapfl, J., et al. (2008). Does regular repositioning prevent pressure ulcers? *Journal of Wound Ostomy Continence Nursing*, 35(6), 571-577.
- Langemo, D., et al. (2006). Nutritional considerations in wound care. *Advances in Skin and Wound Care*, 19(6), 297-298, 300, & 303.
- Lewin, J., et al. (2008). Capillary refill time in adults. *Emergency Medicine Journal*, 25(6), 325-326.
- Moore, Z., et al. (2009). Repositioning for treating pressure ulcers. [Cochrane Review]. In *Cochrane Database of Systematic Reviews*, 2009. Retrieved from [www.cochrane.org/reviews/en/ab006898.html](http://www.cochrane.org/reviews/en/ab006898.html)
- Moore, Z, et al. (updated April 27, 2008). Risk assessment tools for the prevention of pressure sores. [Cochrane Review]. In *Cochrane Database of Systematic Reviews*, 2008. Retrieved from [www.cochrane.org/reviews/en/ab006471.html](http://www.cochrane.org/reviews/en/ab006471.html)
- National Institute for Health and Clinical Excellence (2014, April). *NICE Clinical Guideline No. 179: Pressure ulcer management: The prevention and management of pressure ulcers in primary and secondary care*. Retrieved from <https://www.nice.org.uk/guidance/cg179/evidence/full-guideline-management-547610510>
- National Pressure Ulcer Advisory Panel. (2015, Feb). *Preventative skin care*. Retrieved from <http://www.npuap.org/wp-content/uploads/2015/02/2.-Preventive-Skin-Care-M-Goldberg.pdf>
- Neizgoda, J., et al. (2006). The effective management of pressure ulcers. *Advances in Skin and Wound Care*, 19(1),3-15. Retrieved from [http://www.nursingcenter.com/library/journalarticleprint.asp?Article\\_ID=636557](http://www.nursingcenter.com/library/journalarticleprint.asp?Article_ID=636557)
- Perry, D., et al. (2012, April). Institute for Clinical Systems Improvement (ICSI). *Pressure ulcer prevention and treatment protocol*. Retrieved from [https://www.icsi.org/guidelines\\_more/catalog\\_guidelines\\_and\\_more/catalog\\_guidelines/catalog\\_patient\\_safetyreliability\\_guidelines/pressure\\_ulcer/](https://www.icsi.org/guidelines_more/catalog_guidelines_and_more/catalog_guidelines/catalog_patient_safetyreliability_guidelines/pressure_ulcer/)
- Pickard, A., et al. (2011). Capillary refill time: Is it still a useful clinical sign? *Anesthesia and Analgesia*. Retrieved from [www.anesthesia-analgesia.org](http://www.anesthesia-analgesia.org)
- Registered Nurses' Association of Ontario. (2007). *Assessment and management of stage I to IV pressure ulcers*. Toronto: Author.

Schank, J., (2009). Kennedy terminal ulcer: The “Ah-Ha” moment and diagnosis. *Ostomy/Wound Management*, 55(9), 40-44.

Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N) (2009) *Parenteral Nutrition*; 33 (277). Retrieved from <http://pen.sagepub.com>

Sussman, C., & Bates-Jensen. (2007). *Wound care: A collaborative practice manual*. 3<sup>rd</sup> ed., Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.

Stechmiller, J. (2012). Wound healing. In C. Mueller (Ed.), *The A.S.P.E.N. Adult Nutrition Support Core Curriculum* (2<sup>nd</sup> ed.). Silver Spring, MD: American Society for Parenteral and Enteral Nutrition.

Walsh, J., et al. (2007). Evaluation of a protocol for prevention of facility-acquired heel pressure ulcers. *Journal of Wound Ostomy Continence Nursing*, 34(2), 178-183.

Wilhelmi, B., et al. (2010). *Pressure ulcers, surgical treatment and principles*. Retrieved from <http://emedicine.medscape.com/article/1293724>

Woodbury, G & Houghton, P. (2004). Prevalence of pressure ulcers in Canadian healthcare settings. *Ostomy Wound Management*, 50(10): 22-38.

Zagoren, A., (2001). Nutritional assessment and intervention in the person with a chronic wound. In: Frasier, D, Rodeheaver, G, Sibbald R, (Eds.). *Chronic wound care: A source book for health care professionals*, (3<sup>rd</sup> ed.). (pp. 117-126). Wayne, PAHMP Communications.

### **Document Creation and Review**

This guideline is based on the best information available at the time it was published and relies on evidence and avoids opinion-based statements where possible. It was developed by the Provincial Nursing Skin and Wound Committee and has undergone provincial stakeholder review.

<b>Created By</b>	British Columbia Provincial Nursing Skin and Wound Committee in collaboration with the Wound Clinicians from across all Health
<b>Publication Date</b>	May 2011
<b>Revision Date(s)</b>	October 2011; November 2013, August 2014; February 2018 <sub>(major)</sub>
<b>Review Date(s)</b>	February 2021