Pressure Injuries

This BPR Brief is an abridged version of the **Best Practice Recommendations for the Prevention and Management of Pressure Injuries.** In alignment with a global health-care perspective, Wounds Canada is committed to provide support to patients to help them adapt to and self-manage their condition in the face of social, physical and emotional challenges. This document uses the Wound Prevention and Management Cycle (WPMC) (Figure 1) as the basis for clinical decision making. For clinicians, this document is meant as a cue for treatment; it provides non-inclusive examples listed below each recommendation. For policy makers, it highlights (in ***bold italics***) actions and policies that support best practice.

Wounds Canada follows a population health strategy for wound care that enables us to address the entire range of individual and collective factors that determine health, including:

- Better health: health of the general population improved; behavioral, social, economic and environmental determinants addressed; preventative care rewarded
- Better health care: patient-centred, reliable, safe, evidence-based treatment; care managers co-ordinate total health-care delivery; evidence-based treatment with outcome tracking
- Better value: costs and cost improvements monitored; readmissions to hospital reduced; early interventions to reduce per patient cosst implemented; unnecessary or duplicate procedures eliminated; information management technologies utilized

For more information on content, levels of evidence or tools related to a particular recommendation, click on the links provided.

We strongly recommend that before using this BPR Brief the user read the full best practice recommendation (BPR) document. To obtain a copy of the full document, go to: www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/172-bpr-prevention-and-management-of-pressure-injuries-2/file.

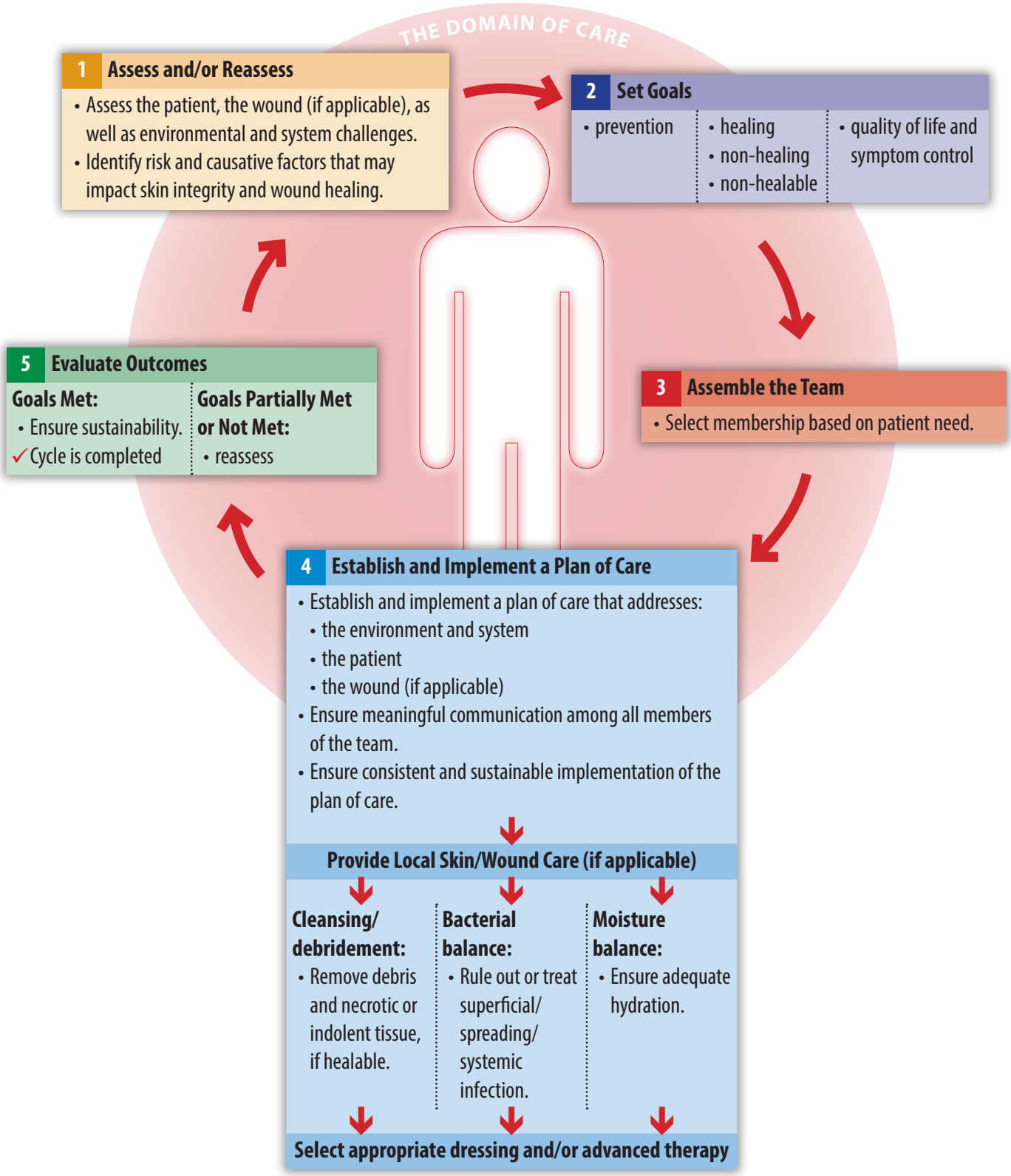
Introduction

In a 2003 study funded by the Canadian Association of Wound Care (Wounds Canada), the overall prevalence of pressure ulcers across all health-care settings was 26%. Despite the focus on prevention to date, pressure injury incidence rates have not significantly decreased in Canada when compared with other countries around the world. An integrated approach focused on prevention is required across all areas of health-care systems to make a significant difference in incidence rates.

Approximately 70% of pressure injuries are considered preventable.

Disclaimer: *This document provides a clinical enabler for the recommendations outlined in the Best Practice Recommendations (BPRs) for the Prevention and Management of Pressure Injuries. It is not meant to provide comprehensive information on the given topic. For more information on a particular recommendation or a copy of the full document go to: www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/172-bpr-prevention-and-management-of-pressure-injuries-2/file.*

Figure 1: Wound Prevention and Management Cycle (WPMC)



For the complete version of Best Practice Recommendations for the Prevention and Management of Pressure Injuries, visit here.

1 Assess and/or Reassess

- Assess the patient, the wound (if applicable), as well as environmental and system challenges.
- Identify risk and causative factors that may impact skin integrity and wound healing.

Assessment must occur to determine the factors that may impact skin integrity and wound healing. Patient assessment includes history and current health status, skin status (and wound, if applicable), environmental factors and system factors. If, after the WPMC has been completed, goals of care have not been fully met, reassessment must take place, followed by the rest of the recommendations in the WPMC. ***Assessment tools need to be available and in use in all care settings, supported by staff education and policy.***

1.1 Select and use validated patient assessment tools.

Pressure-injury-specific risk assessment tools include: the Braden Scale for Predicting Pressure Ulcer Risk, Braden Q Scale, InterRAI Pressure Ulcer Risk Scale, Norton Pressure Sore Risk Assessment Scoring System, Waterlow Scale for Stratification of Pressure Sore Risk, Gosnell Scale, Spinal Cord Injury Pressure Ulcer Scale

Let assessment guide intervention.

1.2 Identify risk and causative factors that may impact skin integrity and wound healing (patient, wound, environment and system).

1.2.1 Physical

Admission tools standardized to identify risk and causative factors for all patients need to be available and supported by staff education and policy. Physical risk and causative factors include: sensory perception deficits, skin exposure to moisture, decreased physical activity and mobility, inadequate nutrition and hydration, presence or risk of friction and/or shearing forces (e.g., muscle spasms), hypotension, vascular disease, obesity, pain, extremes of age, institutionalization on a critical care unit, and acute, severe chronic or terminal illness.

1.2.2 Environmental: Socio-economic, care setting, potential for self-management

Assessment of socio-economic determinants should include income, employment and working conditions, food security, environment and housing, early childhood development, education and literacy, social supports and connectedness, health behaviours, access to health care and services. It is critical to provide a culturally sensitive environment for care.

1.2.3 Systems: Health-care support and communication

Assessment of access to funding, availability of services and wound-related products, pressure redistribution surfaces, diagnostic services, service delivery personnel and co-ordination of care.

1.3 Complete a wound assessment, if applicable.

The choice of wound assessment tool should be consistent across all care settings and supported by education and policy.

- The National Pressure Injury Advisory Panel (NPIAP) recommends that pressure injuries be categorized/staged according to the depth of original injury and not be categorized/staged in reverse as healing occurs.
- Wounds should be assessed for healing or deterioration using tools such as the Bates-Jensen Wound Assessment Tool (BWAT), Pressure Ulcer Scale for Healing (PUSH), Sessing Scale, Spinal Cord Impairment Pressure Ulcer Monitoring Tool.

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- The presence or absence of infection and osteomyelitis should be assessed. Assess for infection using the International Wound Infection Institute (IWII) continuum. Other tests may include swabs, bone biopsy, x-rays, blood tests for inflammatory markers, MRI.
- Some conditions may co-exist so it is important that the assessment is able to differentiate the etiology of the injury (Table 1)

Table 1: Differential Diagnosis of Pressure Injury and Incontinence-associated Dermatitis (IAD)

	Pressure Injuries (Category/Stage 1)	Pressure Injuries (Category/Stage 2)	Incontinence-associated Dermatitis
Location	Over bony prominence or sites exposed to external pressure and shear, or associated with a medical device	Over bony prominence or sites exposed to external pressure and shear, or associated with a medical device	May be localized to the perineum, perigenital areas or generalized to include buttocks; gluteal fold; medial and posterior aspects of upper thighs; lower back; may extend over bony prominence
History	Exposure to pressure, shear, immobility	Exposure to pressure, shear, immobility	Urinary and/or fecal incontinence
Pain (for those with intact sensation)	Burning, itching, warmth	Burning, pain	Burning, itching, tingling, pain
Odour	None	Unlikely	Fecal or urine
Characteristics	Intact skin with distinct area of non-blanchable erythema	Shallow open area with distinct edges or margins	Area is diffuse with poorly defined edges with superficial, partial-thickness skin loss or may be intact skin with blanchable or non-blanchable, blotchy erythema
Periwound skin	Intact	Intact	Irritated, red
Infection	Rare	Rare, although secondary soft tissue infection may be present	Secondary superficial skin infection such as candidiasis may be present
Improvement	Pressure redistribution	Pressure redistribution	Control/containment of incontinence, effective skin protection

2 Set Goals

• prevention	• healing • non-healing • non-healable	• quality of life and symptom control

Goals of care need to revolve around the patient. Achieving goals will depend on the interplay of the patients' health status and lifestyle, the availability of resources and the knowledge and ability of care partners to provide optimal interventions. If these factors are not taken into consideration the goals of care may be unrealistic and unrealizable. The team should aim to set goals according to the SMART principle: **S**pecific, **M**easurable, **A**ttainable, **R**elevant and **T**imely.

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2.1 Set goals for prevention, healing, non-healing and non-healable wounds.

SMART goals needs to be part of care planning and be supported by a care planning policy. Goals need to be established to enhance the patient's quality of life regardless of the healability of pressure injuries. Pressure injury prevention should be considered a patient safety goal.

2.1.1 Identify goals based on prevention or healability of wounds.

Prevention goals might include:

- Daily skin checks and skin hygiene, as directed by a health-care professional, are implemented within one week
- Pressure management surfaces are in place under high-risk areas at all times.
- Skin care regimen and turning/repositioning schedule is implemented within one day.

Healing wounds have sufficient vascular supply, the underlying causes are corrected and health is optimized. Goals might include:

- As above, plus:
- Pressure injury will close within two weeks.
- Exudate and pain are controlled within one day.

Non-healing wounds have healing potential, but patient factors are compromising wound healing at this time (e.g., pressure injury on a coccyx with uncontrolled pressure). Goals might include:

- Pressure injury remains stable and not infected.
- Exudate and pain are controlled within one day.
- Further skin breakdown is prevented.

Non-healable wounds have no ability to heal due to untreatable causes such as terminal disease or end-of-life status. Goals might include:

- Pressure injury is kept clean and dry (to reduce risk of infection).
- Further skin breakdown is prevented.

2.1.2 Identify quality-of-life and symptom-control goals.

QoL and symptom control goals might include:

- Return to social activities (modified if necessary) within one month.
- Participate in 2–3 sessions of strength training and 50 minutes or more of low-intensity, low-impact aerobic exercises per week within one month.

3 Assemble the Team

• Select membership based on patient need.

An integrated team is necessary to implement, adjust and sustain a plan to meet the patient-specific goals. The team should include the relevant health-care professionals and other service providers as required as well as the patient, family and their support system.

3.1 Identify appropriate health-care professionals and service providers.

Team members may include: wound clinician, continence specialist, dietitian, family physician or primary care nurse practitioner, infectious disease specialist, mental health specialist, nurse, occupational therapist, orthopedic surgeon, orthotist, personal support worker, pharmacist, physiatrist, physical therapist, surgeon/plastic surgeon, social worker, speech-language pathologist, spiritual care practitioner.

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3.2 Enlist the patient and their family and caregivers as part of the team.

The team must include the patient and/or their family and care partners, with successful prevention and management of pressure injuries hinging on their collaboration and communication with other members of the team.

3.3 Ensure organizational and system support.

Wounds Canada's resources and education align with a population health management model. This model encourages the proactive management of a total population at risk for adverse outcomes through a variety of individual, organizational and cultural interventions to improve patient, clinical and financial outcomes. The interventions are based on a risk-stratified needs assessment of the population, supported by a comprehensive governance infrastructure.

To support this model and secure successful outcomes, decision makers must:

- ***Use globally recognized risk classifications to identify risk, support prevention and develop management strategies by allocating appropriate resources such as therapeutic pressure redistribution devices, patient education and clinical visits.***
- ***Develop policies (federal, provincial/territorial, regional and institutional) based on current evidence that acknowledge and designate human, material and financial resources to support the team in the development of a pressure injury prevention and management program.***
- ***Establish a pathway for referral of people at risk for pressure injuries to a multidisciplinary service within one working day and triaged within one additional working day.***
- ***Work with the community and other partners to develop a process to facilitate patient referral and access to local resources and health professionals with specialized knowledge in pressure injury prevention and management.***
- ***Work with community and other partners to advocate for strategies and funding for all aspects of preventative care, including pressure management devices for prevention and treatment.***
- ***Ensure services and programs exist for the assessment and continuing surveillance of those defined as being at increased risk in order to prevent pressure injuries, and to support management in their health-care or community setting.***
- ***Establish, train and support an integrated team composed of interested, skilled and knowledgeable persons to address and monitor quality improvements in the prevention and management of pressure injuries.***
- ***Establish and sustain a communication network between the person with or at risk for pressure injuries and the necessary health-care and community systems.***
- ***Audit all aspects of the service to ensure that local practice meets accepted national and international standards of care.***

It's not what you put on a pressure injury, it's what you take off a pressure injury.

In order to achieve these steps and improve patient outcomes, establish or adopt a system-wide care pathway.

For the complete version of Best Practice Recommendations for the Prevention and Management of Pressure Injuries, visit here.

4 Establish and Implement a Plan of Care

- Establish and implement a plan of care that addresses:
- the environment and system
- the patient
- the wound (if applicable)
- Ensure meaningful communication among all members of the team.
- Ensure consistent and sustainable implementation of the plan of care.

Provide Local Skin/Wound Care (if applicable)

Cleansing/ debridement:
- Remove debris and necrotic or indolent tissue, if healable.

Bacterial balance:
- Rule out or treat superficial/ spreading/ systemic infection.

Moisture balance:
- Ensure adequate hydration.

Select appropriate dressing and/or advanced therapy

Ensure that care addresses the goals and considers patient needs, factors relating to the skin and wound (if applicable) as well as the environment and the system in which the team is situated.

4.1 Identify and implement an evidence-informed plan to correct the causes or cofactors that affect skin integrity, including patient needs (physical, emotional and social), the wound (if applicable) and environmental/system challenges.

The plan of care must be patient-driven, based on assessment and risk, and supported by available resources and policy.

- Daily skin care and inspection for early identification of at-risk areas
- Pressure and shearing forces should be addressed, through techniques such as proper positioning and frequent and safe repositioning and transfers, mobilization and minimization of bed rest, initiation and proper use of pressure redistribution support surfces and transfer aides, and use of protective skin barriers.
- Proper positioning of tubing and devices must be ensured.
- Moisture can be addressed through techniques such as individualized bowel/bladder programs; use of bedpans/urinals, absorbent pads/dressings, commercial moisture barriers; temporary use of condom/indwelling catheters or fecal management systems and use of moisture wicking materials.
- Nutrition and hydration support must be in place to support healing and address blood pressure and body mass index.
- Physical exercise is recommended to optimize body mass index and muscle strength, and to improve activity and mobility.

For the complete version of Best Practice Recommendations for the Prevention and Management of Pressure Injuries, visit here.

- Surgical intervention is an option to close recurrent, multiple or non-healing Category/Stage 3 and 4 pressure injuries provided it is consistent with the goals of care.

4.2 Optimize the local wound environment: leansing, debriding, managing bacterial balance and managing moisture balance.

4.2.1 Cleansing: Non-irritating wound cleansers such as potable water, normal saline or commercially prepared wound cleansers should be used, depending on patient needs (see Wounds Canada's Product Pickers, below).

4.2.2 Debriding: Non-viable tissue should be debrided to promote wound closure (**if appropriate**) (see Wounds Canada's Product Pickers, below).

4.2.3 Managing bacterial balance: Any local, spreading or systemic infection must be treated, including osteomyelitis if present (see Wounds Canada's Product Pickers, below).

4.2.4 Managing moisture balance: Moisture can be contained or provided through dressing selection (see Wounds Canada's Product Pickers, below).

4.3 Select the appropriate dressings and/or advanced therapy.

Select products or advanced therapies that will address the local wound environment needs as well as prevent trauma to fragile/friable tissue—including periwound skin (see Wounds Canada's Product Pickers, below).

4.4 Engage the team to ensure consistent implementation of the plan of care.

Education/instruction should be available to all levels of care providers, including the patient and care partners, on topics such as:

- Potential risks of pressure injuries
- Daily skin assessment and care
- Diet and exercise
- Use of pressure redistribution devices
- Wound care
- Signs of infection
- Self-management

Wounds Canada's Product Pickers

- Wound Dressing Formulary: describes common wound dressings in generic categories and lists usage considerations
- Wound Dressing Selection Guide: helps users choose appropriate primary and secondary dressings based on common clinical situations and wound care goals
- Skin and Wound Clean-up: helps users choose appropriate skin and wound cleansers as well as irrigating solutions

For the complete version of Best Practice Recommendations for the Prevention and Management of Pressure Injuries, visit here.

5 Evaluate Outcomes

Goals Met:	Goals Partially Met or Not Met:
• Ensure sustainability. • ✓Cycle is completed	• reassess

Evaluation of the plan of care should be routine and ongoing to identify whether the plan is effective in meeting the goal(s). If, after the cycle has been completed, goals of care have not been fully met, reassessment (Step 1) must take place, followed by the rest of the Wound Prevention and Management Cycle steps. ***The plan of care needs to be revisited at discharge to ensure that self-management strategies are in place to support the patient in sustaining the achieved outcomes after discharge.***

5.1 Determine if the outcomes have met the goals of care.

Outcomes need to reflect goals of care and sustainability needs to reflect continuity of care; both need to be included in the plan of care and supported by policy. Outcomes may include:

- Achievement of blood pressure, body mass index, nutrition and exercise targets
- Prevention of pressure injury
- Achievement of a daily skin assessment and care routine
- Success level of pressure, shear and moisture management
- Resolution and/or prevention of infection +/- osteomyelitis
- Wound closure and prevention of recurrence

Team members should refer back to original goals and, through the use of validated tools, determine if the goals of the prevention or treatment plan have been met.

5.2 Reassess patient, wound, environment and system if goals are partially met or unmet

When goals of care are partially met or unmet, go back to Step 1 of the Wound Prevention and Management Cycle. Reassessment needs to consider gaps in care or the person's ability to adapt to their condition and engage in self-management.

If the plan of care is appropriate and the wound is not improving, consider a biopsy to rule out skin disorders or a malignancy.

5.3 Ensure sustainability to support prevention and reduce risk of recurrence.

Sustainability may depend on access to appropriate equipment and services and collaboration among the person with or at risk for a pressure injury, their care partners, service providers and the interprofessional team of health-care professionals.

Additional Wounds Canada resources, including a variety of Product Pickers and brochures, are available online at: www.woundscanada.ca/health-care-professional/resources-health-care-pros/boutique.

Care at Home Series:

- Caring for Pressure Injuries at Home: Preventing and Managing Pressure Injuries
- Caring for Your Wound at Home: Changing a Dressing

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