# A clinical guide to pelvic skin assessment



Pressure injury and incontinence-associated dermatitis are common pelvic skin injuries. Skin assessment of the pelvic region is complex and must consider multiple factors. Pressure injury and incontinenceassociated dermatitis are often misclassified, leading to inappropriate prevention and treatment strategies being implemented. This may result in poor clinical outcomes and suboptimal use of healthcare resources. This paper reports the results of an expert working party consensus process to produce a practical guide to support systematic skin assessment of the pelvic region in adults. It also provides information supporting the accurate differentiation between these commonly misclassified skin injuries.

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kin injuries, such as pressure injury (PI) and incontinence-associated dermatitis (IAD), continue to present challenges for patients and healthcare providers across the healthcare continuum. Maintaining skin integrity is a critical dimension of the broader imperative of keeping patients safe from harm (Campbell et al, 2016a). Appropriate evidencebased prevention and management of pelvic skin injury is underpinned by thorough holistic patient assessment, of which skin assessment is a key component. However, skin assessment — particularly of the pelvic area — is complex, requiring the consideration of multiple interrelated factors. This complexity, frequent co-location and coexistence of PI and IAD, as well as some similarities in clinical presentation can mean these lesions are often misdiagnosed or misclassified (Beeckman et al, 2016, Barakat-Johnson et al, 2018b), leading to poor patient and healthcare outcomes.

In response to requests from clinicians across the Australian healthcare continuum for a practical tool to aid in the task of pelvic skin assessment and to differentiate between PI and IAD, a clinical and academic expert skin integrity group was convened in Sydney, Australia on March 22, 2019. This paper presents the results of that meeting and consensus process. It proposes a practical guide to support clinicians in conducting pelvic skin assessment and assists clinicians in the accurate classification of pelvic PI and IAD. This paper is targeted primarily at registered nurses who are responsible for the assessment and classification of pelvic skin injury, and for formulating, implementing and evaluating a care plan to treat any injury and prevent further injury. The information provided will also benefit any individual involved in the care of adults at risk of pelvic skin injury. See *Table 1* for definitions of terms used in this paper.

#### **Pressure injury**

This term was originally adopted by the Pan Pacific Pressure Injury Alliance, and more recently by the National Pressure Injury Advisory Panel. The European Pressure Ulcer Advisory Panel's (EPUAP's) preferred term is 'pressure ulcer'. The term 'pressure injury' is used in this paper. A PI is a defined as localised damage to the skin and/or underlying tissue, usually over a bony prominence, or related to a device or other object. Injury occurs as a result of intense or prolonged pressure, or pressure in combination with shear (EPUAP et al, 2019). Pls typically have distinct edges or margins. They present as non-blanching erythema through to full-thickness injury exposing muscle or bone, with slough or eschar (EPUAP, 2019).

Pls can develop in all healthcare settings. Globally, Pl prevalence in the acute care setting ranges from 1.8% to 20%, with hospitalacquired pressure injury (HAPI) prevalence ranging from 0.8% to 20% (Pieper et al, 2009; Worsley et al, 2016; Barakat-Johnson et al, 2018b; Clinical Excellence Commission, 2018; Feng et al, 2018; Tariq et al, 2019). In the aged care setting, PI prevalence ranges from 7.8% to 10.3% (Clinical Excellence Commission, 2018).

Complications of PI are serious and have a negative impact on patients, families and healthcare providers. PIs can result in severe pain and can expose the individual to infection, ranging from localised tissue infection to systemic infection and sepsis. A PI may reduce patient quality of life, cause disability or result in death. It can increase the complexity and cost of treatment and prolong the length of health service stay (Dunk and Carville, 2016; Edsberg et al, 2016).

Preventing and managing PI is a key nursing activity recognised internationally as an indicator of quality of care (Australian Commission on Safety and Quality in Health Care, 2017). The development of a hospitalacquired PI (HAPI) can attract a financial disincentive and may expose a healthcare organisation to litigation or reputational censure (Independent Hospital Pricing Authority, 2018).

#### Incontinence-associated dermatitis

IAD is a type of irritant contact dermatitis (inflammation of the skin) found exclusively in patients with urinary and/or faecal incontinence. It is characterised by skin inflammation, erythema and/or discolouration, and may present with blisters, erosion, denudation or serous or serosanguinous exudate (Gray et al, 2007; Beeckman, 2015). Other terms sometimes used to describe IAD include irritant dermatitis, moisture lesion, perineal dermatitis, perineal rash, diaper/ napkin/nappy dermatitis and/or nappy rash.

IAD occurs in areas where the irritant (urine and/or faeces) comes in contact with the skin, such as the perineum, labial folds, scrotum, groin, upper thighs, buttocks, rectal area, gluteal cleft and abdominal folds. The edges of the injury are usually poorly defined and may appear 'blotchy' (Beeckman, 2015).

Several serious complications are associated with IAD. Secondary cutaneous fungal infection, commonly caused by *Candida albicans*, has been found to occur in 32% of patients with IAD (Campbell et al, 2016a). In addition, IAD is recognised as a risk factor for PI development (Demarre et al, 2015; Gray and Giuliano, 2017; Barakat-Johnson et al, 2018a). Pain associated with IAD is a common yet under-recognised and undertreated complication. The pain of IAD has been compared to the pain of a burn (Junkin and Selekof, 2008) and is compounded each time the patient voids and/or defecates, further exposing the injured skin to the irritant (see [Box 1] for a patient story). Patients may also experience burning, itching or tingling (Beeckman, 2015). The impact of the severe and often relentless nature of IAD pain and associated symptoms on patient wellbeing is frequently underestimated (Spacek et al, 2018).

Internationally, the prevalence of IAD in the acute care setting ranges between 4% and 42% (Campbell et al, 2016a; Clark et al, 2017; Barakat-Johnson et al, 2018a; Johansen et al, 2018). The mean incidence in hospitalacquired IAD was 23% over a 3-year study (Arnold-Long and Johnson, 2019) and in the aged care setting ranges between 3% and 35% (Arnold-Long et al, 2011; Kottner et al, 2014; Hahnel et al, 2017).

#### Incontinence

Understanding IAD requires an appreciation of incontinence - a condition associated with significant morbidity and impact on quality of life that is a substantial burden for healthcare providers. Incontinence is the causative factor for IAD, with the prevalence of incontinence reflecting IAD risk (Ersser et al, 2005). Incontinence is also a risk factor for PI (EPUAP et al, 2019). Incontinence disproportionately affects older people (those aged 65 years or older), with an estimated prevalence of 24–43% in the acute care population (Junkin and Selekof, 2008; Campbell et al, 2016a; Barakat-Johnson et al, 2018a). In the aged care setting the prevalence of incontinence ranges from 71% to 81% (Steel and Fonda, 1995; **Deloitte Access Economics and The Continence** Foundation of Australia, 2011; Hibbert et al, 2019), with incontinence being a major reason for admission to residential aged care (Pearson, 2003). The prevalence of incontinence in the community setting is 21-25% (Deloitte Access Economics and The Continence Foundation of Australia, 2011).

#### **Pelvic skin assessment**

Skin assessment is a process whereby the skin is directly examined for changes or abnormalities [Box 2]. Comprehensive skin assessments are repeated on a regular basis to detect any skin changes (Edsberg et al, 2016; Carville, 2017; Zulkowski, 2018). The goal is early identification of skin changes, skin injuries or the presence of any factors that may predispose to further injury.

## Box 1. Patient story: incontinence-associated dermatitis.

A 62-year-old hospitalised patient developed diarrhoea following complex gastrointestinal surgery and prolonged hospitalisation. As a result of the skin being exposed to frequent loose stools (over an extended period), he developed severe incontinenceassociated dermatitis (GLOBIAD category 2A) (Beeckman et al, 2017).



He described the burning, stinging pain as the worst pain he had ever experienced – far worse than his surgery-related pain. During a consultation with the wound care nurse, he implored her to: 'Please fix the pain in my bottom. I don't care about any other pain ... it's the pain in my bottom that is causing me the most agony.'

Early identification plays a critical role in maintaining skin integrity through the timely implementation of appropriate skin injury prevention and management strategies. Recommendations for skin assessment depend on visual and tactile cues to identify changes, eg colour at the skin surface, temperature, the presence of any lesions, oedema, moisture, dryness, turgor and the state of skin hygiene (Carville, 2017).

Clinicians should inspect the skin for erythema and differentiate between blanchable and non-blanchable erythema. A localised area of non-blanchable redness or erythema (usually over a bony prominence) is classified as stage 1 pressure injury. Assessment of skin temperature, oedema and change in tissue consistency in relation to surrounding tissue should be included as part of the skin assessment (EPUAP et al, 2019). Areas under skin folds – particularly in obese patients - are exposed to moisture from diaphoresis or urine and/or faeces. Increased friction can result from the skin folds rubbing together and is exacerbated by trapped moisture and irritants, which can lead to skin breakdown. Infections can occur in deep skin folds. These include fungal infections, such as candidiasis, bacterial infection, cellulitis or even Fournier's gangrene (Beitz, 2014). Regular assessment of skin under prophylactic dressings and underneath medical or other devices is essential. As skin exposed to urine and/or faeces is at risk of developing IAD, the presence of incontinence should trigger regular skin inspections (Beeckman, 2015).

Pain assessment is a critical component of the pelvic skin assessment procedure. Patients may report pain as constant, severe, occurring during procedures and/or at rest (Edsberg et al, 2016). Some patients may describe a burning pain (exacerbated, for example, when voiding or defecating) or tingling or an itch (Beeckman, 2015). Pain cues can be verbal or non-verbal and should be measured using a validated pain scale, eg visual analogue or numeric scale (Carville, 2017).

It is essential that clinicians are competent at assessment across the continuum of skin tone (Oozageer Gunowa et al, 2018). Several studies indicate that patients with darker skin tones have a higher incidence of HAPI or more severe PI than those with lighter skin tones (Baumgarten et al, 2004). Stage 1 Pl and suspected deep tissue injury may be difficult to detect in individuals with darker skin tones (EPUAP et al, 2019). Erythema usually presents as violet/bluish or black, rather than red (Clark, 2010). Darker skin tones may not blanch with light pressure, but the colour may differ from the individual's normal skin colour. Areas of difference in colour should be assessed more closely for temperature changes, oedema, changes in tissue consistency and pain (EPUAP et al, 2019).

Skin assessment should be conducted in a systematic manner, with adherence to evidence-based procedures and local policy. Patient consent must be obtained prior to assessment. Dignity and privacy should always be maintained. A warm, comfortable environment with a good light source and measuring grid or ruler to gauge the size and distribution of lesion, wound or skin damage are essential (Carville, 2017; Zulkowski, 2018).

#### **Pelvic skin assessment algorithms**

We propose two algorithms to guide clinicians when conducting a pelvic skin assessment and assist with the accurate differentiation and classification of PI and/or IAD. [Figure 1] provides a guide to the first steps in conducting a pelvic skin assessment. It is targeted at all healthcare personnel who may be required to perform pelvic skin assessments, from unregistered carers through to registered nurses. [Figure 2] guides clinicians through the subsequent steps in assessment,

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including the identification of any pelvic skin injury aetiology and subsequent classification of that injury using appropriate classification systems. This resource is targeted at registered nurses who are primarily responsible for the assessment and classification of pelvic skin injury; however, the information provided will be of value to a range of healthcare providers. This second algorithm proposes a series of prompts to guide clinicians through the complex assessment process and poses questions that focus on the clinical appearance of skin changes and the presence of causative and risk factors. It also supports clinical decision-making regarding the differentiation and classification of a PI, IAD or both by using appropriate internationally-agreed nomenclature found in the Ghent Global IAD Categorisation Tool (GLOBIAD) (Beeckman et al, 2017) and international classification system for PI (EPUAP et al, 2019).

# What is the difference between risk assessment and skin assessment?

It is important to understand the difference between these two types of assessment. Risk assessment is aimed at identifying patients susceptible to pelvic skin injury, underpins the prevention of skin injury, and identifies the multiple and often inter-related factors that interact and result in vulnerability to skin injury (Campbell et al, 2016b). Several tools are available to guide structured systematic PI risk assessment, including the Braden Scale (Bergstrom et al, 1987), the Norton Risk Assessment Tool (Bale et al, 1995) and Waterlow Risk Assessment Tool (Waterlow, 2005). Several IAD risk assessment tools have been published — one incorporated within an IAD classification tool (Nix, 2002) and another, more recent tool developed to predict IAD risk in the intensive care patient (Wei et al, 2019). However, these IAD risk assessment tools are not widely used in clinical practice.

Risk assessment is the critical first step in skin injury prevention and informs the development of individualised skin injury prevention care plans. Skin assessment involves direct observation and examination for signs and symptoms of change or injury and is an integral component of risk assessment.

Why is it important to differentiate between PI and IAD? Inaccurate classification of pelvic skin

### Box 2: Elements of a structured skin assessment (Carville, 2017; Zuklowski, 2018).

- Skin colour
- Skin temperature
- Erythema (blanchable or non-blanchable)
- Oedema or turgor
- Moisture
- Lesions
- Breaks in skin integrity or presence of woundsSkin rash
- Drvness
- Pain

injuries can result in the implementation of inappropriate prevention and management strategies. This may result in poor outcomes for the patient and expose them to further complications. Misclassified pelvic lesions can also lead to suboptimal use of healthcare resources, imprecise data that inform quality improvement activities and benchmarking, and the potential for financial loss associated with the development of hospital-acquired complications (Independent Hospital Pricing Authority, 2018).

Assessment and accurate classification of PI and IAD is complex. PI and IAD often coexist and can be co-located.

IAD can often be misclassified as a stage 1 or 2 PI or suspected deep tissue injury (Beeckman et al, 2007; Doughty et al, 2012; Beeckman, 2015; Francis, 2018). It can also be mistaken for other skin conditions such as contact dermatitis, infections such as herpes simplex or intertrigo, a skin tear or medical adhesive-related skin injury (Beeckman, 2015; EPUAP et al, 2019).

A recent Australian hospital study found inaccuracies in diagnosing, classifying and reporting PI, with more than half (69.7%) of individuals with a skin condition misreported as a HAPI (Barakat-Johnson et al, 2018b).

#### **PI and IAD classification**

PIs are classified according to the depth of tissue loss and visual and palpatory identification of the tissue, using an internationally-agreed classification system (EPUAP et al, 2019). Categories or stages include 1–4, unstageable PI and suspected deep tissue injury. The classification system should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation (EPUAP et al, 2019).

The authors advocate for the use of the GLOBIAD tool [*Table 2*] to categorise

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Figure 1. Pelvic skin assessment bedside tool.



IAD (Beeckman et al, 2017). This tool was developed by 34 experts from 13 countries using a three-round Delphi process. It categorises IAD severity based on visual inspection of affected skin areas and symptom assessment, and assesses persistent redness, skin loss and clinical signs of infection (Beeckman et al, 2018). Discussion of risk assessment and skin assessment in anatomical locations other than the pelvic region is beyond the scope of this paper. How to differentiate between PI and IAD

The process of differentiating between PI and IAD is a complex clinical task but is of critical importance to ensure appropriate management strategies are implemented. Accurate differentiation begins with a holistic patient assessment and risk assessment. When differentiating PI from IAD, it is important to understand the aetiological factors and clinical presentation of each skin injury [Table 1]. The complex interplay of risk factors for these two Figure 2. Assessment of pelvic region skin injury flowchart (Beekman et al 2017; EPUAP et al 2019).



Note: Redness is the primary skin sign of PI or IAD, however in individuals with darker skin colour, it may appear as 'discolouration'. Individuals may present with *non-blanching erythema*, that is, when pressed the skin discolouration does not fade.

Categorise and stage skin injury according to local peak body guidelines.

skin injuries means that accurate and definitive differentiation may not always be achievable; a management plan may need to be instigated, with response to treatment indicating the condition that is present (Beeckman, 2015).

The distinguishing characteristics of PI and IAD are outlined in [*Table 3*]. A pelvic skin injury that develops in the absence of exposure to urine and/or faeces is not IAD and further investigation should be undertaken to determine the aetiology of the injury (Beeckman, 2015). A pelvic skin injury that develops when a patient is continent is not IAD (Beeckman, 2015).

#### Involving the patient

A holistic assessment of the patient is an integral element of the assessment process. In addition to symptoms of pain or discomfort associated with PI or IAD, patients may also experience other sequalae such as odour, infection, loss of function, fear, shame, isolation or impact on wellbeing. Including the patient experience of pain or other symptoms, priorities, concerns and questions is fundamental to assessment and to ongoing care planning (Dowsett et al, 2015; Lindsay et al, 2017). The patient can be empowered to become an equal partner in their assessment

Table 1. Definitions for pelvic skin assessment terms and wound aetiologies.			
Term	Description		
Skin assessment	A regular and systematic inspection of patient skin (head to toe) to identify normal skin and changes that may indicate early signs of injury (Edsberg et al., 2016; Carville, 2017). Skin assessment also includes the assessment symptoms particularly pain, itching and burning (Beeckman, 2015).		
Pelvic skin assessment	A regular and systematic inspection of patient skin in the pelvic region to identify normal skin and changes as well as symptoms such as pain itching and burning that may indicate early signs of injury (Edsberg et al, 2016; Carville, 2017).		
Risk assessment	A regular and systematic process aimed at identifying individuals at risk of skin injury (EPUAP et al, 2019). There are a range of risk assessment tools available to guide clinicians in the risk assessment for PI, including Braden, Norton and Waterlow; however, risk assessment tools are not currently widely used in clinical practice for IAD.		
Pressure injury	Localised damage to the skin and/or underlying tissue, usually over a bony prominence or related to a device or other object. Injury occurs as a result of intense or prolonged pressure, or pressure in combination with shear (EPUAP et al, 2019).		
Incontinence- associated dermatitis	A type of irritant contact dermatitis (inflammation of the skin) found in individuals with faecal and/or urinary incontinence (Beeckman, 2015) with the distribution of injury consistent with the location of the irritant in contact with the skin.		

and care via collaborative and flexible decision-making, open disclosure and the provision of information, with the ultimate goal of improving patient outcomes (Dowsett et al, 2015; Lindsay et al, 2017).

#### **Ongoing assessment**

A continuous cycle of comprehensive assessment is required to maintain skin integrity in the vulnerable patient. This cycle is underpinned by the nursing process (Ackely and Ladwig, 2014). It includes ongoing skin and risk assessment, diagnosis, care planning, implementation and evaluation of the outcomes. If the outcomes are not met, the care plan should be reviewed and changed as needed.

Skin assessment in individuals at risk of PI should occur as soon as possible after admission/transfer to the healthcare service (or first visit in community settings); should increase in frequency in response to any deterioration in overall condition; and should occur as part of every risk assessment (EPUAP et al, 2019). A skin assessment should occur each time the skin is cleansed following an episode of incontinence.

Accurate, comprehensive documentation of care is required as a component of assessment

Table 2. Ghent Global IAD categorisation tool (adapted from Beeckman et al, 2017).			
Category 1: Persistent redness	Category 2: Skin loss		
1A: Persistent redness without clinical signs of infection	2A: Skin loss without clinical signs of infection		
<b>Critical criterion:</b> Persistent redness (various tones of redness may be present; darker skin may be paler or darker than normal or purple)	<b>Critical criterion:</b> Skin loss (may present as skin erosion, denudation or excoriation); pattern of damage may be diffuse		
Additional criteria: - Marked areas of discolouration from previous skin defect(s) - Shiny appearance - Maceration - Intact vesicles and/or bullae - Tense/swollen skin on palpation - Burning, tingling, itching or pain	<ul> <li>Additional criteria:</li> <li>Persistent redness (various tones of redness may be present; darker skin may be paler or darker than normal or purple)</li> <li>Marked areas of discolouration from previous skin defect(s)</li> <li>Shiny appearance</li> <li>Maceration</li> <li>Intact vesicles and/or bullae</li> <li>Tense/swollen skin on palpation</li> <li>Burning, tingling, itching or pain</li> </ul>		
1B: Persistent redness with clinical signs of infection	2B: Skin loss with clinical signs of infection		
<ul> <li>Critical criteria:</li> <li>Persistent redness (various tones of redness may be present; darker skin may be paler or darker than normal or purple)</li> <li>Signs of infection, eg white scaling (suggesting fungal infection); or satellite lesions (pustules around the lesion suggesting <i>Candida albicans</i> infection)</li> <li>Additional criteria: <ul> <li>Marked areas of discolouration from previous skin defect(s)</li> <li>Shiny appearance</li> <li>Maceration</li> <li>Intact vesicles and/or bullae</li> <li>Tense/swollen skin on palpation</li> <li>Burning, tingling, itching or pain</li> </ul> </li> </ul>	<ul> <li>Critical criteria:</li> <li>Skin loss (may present as skin erosion, denudation or excoriation); pattern of damage may be diffuse</li> <li>Signs of infection, eg white scaling (suggesting fungal infection); or satellite lesions (pustules around the lesion suggesting <i>Candida albicans</i> infection); wound bed contains slough (yellow/brown/greyish), has a green appearance (suggesting <i>Pseudomonas aeruginosa</i> infection) or appears shiny; or there are excessive exudate levels or purulent exudate</li> <li>Additional criteria:</li> <li>Persistent redness (various tones of redness may be present; darker skin may be paler or darker than normal or purple)</li> <li>Marked areas of discolouration from previous skin defect(s)</li> <li>Shiny appearance</li> <li>Maceration</li> <li>Intact vesicles and/or bullae</li> <li>Tense/swollen skin on palpation</li> <li>Burning, tingling, itching or pain</li> </ul>		

Beeckman, 2015).			
Parameter	Incontinence-associated dermatitis	Pressure injury	
History	Urinary and/or faecal incontinence	Exposure to pressure/shear	
Symptoms	Pain, burning, itching, tingling	Pain	
Location	Affects perineum, perigenital area; buttocks; gluteal fold; medial and posterior aspects of upper thighs; lower back; may extend over bony prominence	Usually over a bony prominence or associated with location of a medical device	
Shape/edges	Affected area is diffuse with poorly defined edges; may be blotchy	Distinct edges or margins	
Presentation/ depth	Intact skin with erythema (blanchable or non-blanchable), with/without superficial or partial-thickness skin loss; slough may be present	Presentation varies from intact skin with non-blanchable erythema to full thickness skin loss; slough and/or eschar may be present	
Other	Secondary superficial skin infection (eg candidiasis) may be present	Secondary soft tissue infection may be present	

Table 3. Differences between incontinence-associated and pressure injury (adapted from

and provides a legal and chronological record of risks, assessments, clinical progress and outcomes. Documentation ensures continuity of care delivery and facilitates the ability to review goals of care determined in a collaborative decision-making process with the patient, their family and clinical team members (Wounds Australia, 2016).

#### **Discussion and conclusion**

Skin assessment is a key component of skin integrity maintenance and the prevention of harm to vulnerable patients. It is complex and relies on clinical knowledge, clinical judgement, and the systematic and detailed implementation of the procedure. Keeping skin safe from injury requires ongoing risk assessment, care planning and evaluation. Maintaining skin integrity and preventing skin injury are essential components in a complex and ongoing cycle that is dependent upon the clinical knowledge and skills of all members of the healthcare team. This paper presents a guide to support clinicians in the optimum conduct of skin assessment in the pelvic region.

Skin assessment is conducted by a range of healthcare providers. Regular, systematic skin assessment is critical to patient safety. It is essential for every member of the healthcare team to have the requisite knowledge and skills to conduct a skin assessment, and that they have an appreciation that this procedure underpins optimum patient and healthcare outcomes.

#### WINT

Acknowledgements The authors thank Belinda Butcher BSc(Hons) MBiostat PhD of WriteSource Medical Pty Ltd, Sydney, Australia, for providing medical writing/editorial support by preparing the manuscript outline, developing the first draft and collating and incorporating author comments. Medical writing support was funded by Paul Hartmann Pty Ltd, Sydney, Australia, in accordance with Good Publication Practice (GPP3) guidelines (www.ismpp.org/ gpp3).

#### **Declaration of interest**

Jill McLean was an employee of Paul Hartmann Pty Ltd when this article was written, which manufactures wound care and continence management products. The study working party was sponsored by Paul Hartmann Pty Ltd.

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