

**“In the Know with RNAO”  
Assessment and Management of Pressure Injuries for the Interprofessional Team, Third Edition**

**October 4, 2016 from 12 pm to 1 pm**

**Opening Remarks:**

Irmajean Bajnok, RN, PhD  
Director  
International Affairs and Best Practice Guidelines Centre  
Registered Nurses' Association of Ontario

**Presenters:**

R. Gary Sibbald, MD, M.Ed, D.Sci(Hons), FRCPC (Med. Derm),  
FAAD, MAPWCA  
Expert Panel Co-Chair  
Professor of Public Health/Medicine  
Director- IIWCC & MSc. Comm. Health  
Dalla Lana Faculty of Public Health  
Women's College Hospital  
Trillium Health Care Partners  
University of Toronto

Karen E. Campbell, RN, PhD  
Expert Panel Co-Chair  
Field Leader MCIScWH, & Wound Project Manager  
Western University  
ARGC Lawson Research Institute

Grace Suva, RN, MN  
Program Manager/Guideline Development Lead  
International Affairs and Best Practice Guidelines Centre  
Registered Nurses' Association of Ontario

The guideline Assessment and Management of Pressure Injuries for the Interprofessional Team is available on the RNAO website at: <http://rnao.ca/bpg/guidelines/pressure-injuries>

Questions and Answers from the Webinar:

Questions	Answers	Supporting Guideline Recommendations
<p>I worked in Afghanistan for 6 months 2005 and saw many pressure ulcers; they were packed with either honey or sugar and covered. But the family had to stay awake all night to make sure the rats didn't come for the sugar.</p> <p>Honey and sugar can be food for bacteria as well as rats!</p>	<p>Honey is hyperosmolar and with a low PH will be antibacterial. When the honey is diluted with wound fluid it becomes hypo-osmolar and then actually serves as bacterial food. The gram negative and anaerobic organisms then are responsible for the odor and increased discharge. The Cochrane review on honey indicates that there is not enough evidence to use honey in routine wound care.</p> <p>Sugar again is hyperosmolar but then becomes hypo-osmolar when diluted with wound fluid, again produces odour due to bacterial proliferation of gram negatives and anaerobes. Sugar would be best mixed with povidone iodine (a very popular wound treatment in Japan) that increases the antibacterial properties of sugar and this would be a much better combination in low resource and developing country practice. If iodine is used over large areas for prolonged periods of time, thyroid function should be monitored.</p>	<p>Recommendation 3.4 provide local pressure injury care: Moisture balance Infection control – hyperosmolar state with sugar supplemented with povidone iodine- also antibacterial debridement – autolytic with hyperosmotic materials</p>
<p>Does zinc supplementation have a role to play in healing the wound?</p> <p>Only recommended for rare cases of zinc deficiency</p>	<p>Sarah Bradbury in Wounds 2006 concluded:</p> <ul style="list-style-type: none"> <li>* Zinc is a significant trace element in the wound healing process due to its multiple functions on a cellular level</li> <li>*The evidence to support routine oral zinc supplementation is generally poor and inconclusive</li> <li>*Some evidence suggests oral zinc supplementation may have a beneficial effect on wound healing in patients who have an existing zinc deficiency</li> <li>*Some trial findings suggest excess zinc might actually impair wound healing</li> <li>*Larger, more rigorous patient centred trials are required to draw more accurate conclusions</li> </ul> <p>Acrodermatitis enteropathica (rare genetic disorder) in children with diarrhea, an inflammatory rash around the mouth and/or anus, and hair loss. Zinc deficiency may also rarely arise in adults: glucagonoma (<u>Necrolytic migratory erythema</u>), inadequate zinc in the diet (alcoholic), and previously, with intravenous nutrition), intestinal malabsorption (inflammatory bowel disease, intestinal bypass surgery, pancreatic disease), nephrotic syndrome (excessive urinary loss of zinc) and catabolic states (trauma, burns, extensive surgery, cirrhosis).</p> <p>For more details see New Zealand Medical Association website- zinc deficiency.</p>	<p>Not recommended in the guidelines</p>
<p>Why is laser therapy not recommended?</p> <p>No evidence for Laser but there is good evidence for electrical stimulation as an adjunctive therapy</p>	<p>Laser therapy has a low level of evidence. There are a number of random controlled trials (at least 4) where laser was no better than sham treatment or standardized care. There is however good evidence that electrical stimulation (when available) can be used as an adjunct to best practice wound care in order to speed healing and promote wound closure in stalled but healable stage 2, 3 and 4 pressure ulcers.</p>	<p>2.6 - laser therapy (not recommended) 3.5 - provide electrical stimulation</p>
<p>Is there still a place for wound care to use in whirlpool therapy?</p> <p>There is too low a level of evidence and too high a risk of nosocomial evidence to recommend whirlpool in routine wound</p>	<p>Whirlpool is a form of mechanical debridement where infection with bacteria including pseudomonas outweighs the benefit of the therapy. As stated by: Hanz Tao, SPT, a Jaime P. Butler, MSPT, b and Tammy Luttrell, PhD, MSPT, CWS, FCCWSc,d,* in J Am Coll Clin Wound Spec. 2012 Mar; 4(1): 7–12: The Role of Whirlpool (WP) in Wound Care: <i>“The risk of nosocomial infection associated with WP therapy is too significant to overcome the limited evidence supporting its benefits in wound care. In the presence of several treatment alternatives, evidence-</i></p>	<p>Not recommended in the guideline</p>

<p>care.</p>	<p><i>based practice (via best-available scientific evidence) does not support the use of WP for wound care”</i></p>	
<p>What is the plan for guideline dissemination, can we help?</p>	<p>To help with the dissemination of the guideline you may promote the following materials in you newsletters, web pages, word of mouth, email, Face book, Twitter:</p> <ul style="list-style-type: none"> <li>• Assessment and Management of Pressure Injuries for the Interprofessional Team, Third Edition (PDF guideline): <a href="http://rnao.ca/bpg/guidelines/pressure-injuries">http://rnao.ca/bpg/guidelines/pressure-injuries</a></li> <li>• Health Education Fact Sheet: <a href="http://rnao.ca/bpg/guidelines/fact-sheets/taking-pressure-preventing-managing-pressure-injuries">http://rnao.ca/bpg/guidelines/fact-sheets/taking-pressure-preventing-managing-pressure-injuries</a></li> <li>• Archived presentation introducing the guideline: <a href="http://rnao.ca/bpg/guidelines/pressure-injuries">http://rnao.ca/bpg/guidelines/pressure-injuries</a></li> <li>• Nursing order sets for the pressure injury guideline: <a href="http://rnao.ca/ehealth/nursingordersets">http://rnao.ca/ehealth/nursingordersets</a></li> <li>• Wound Care Institute: <a href="http://rnao.ca/events/wound-care-institute-foundational">http://rnao.ca/events/wound-care-institute-foundational</a></li> </ul>	
<p>What is the difference between a skin wound category II injury and a stage II pressure ulcer?</p> <p>Most stage II pressure ulcers or Stage 2 pressure injuries are not ulcers by the dermatological definition – loss of epidermis with a dermal or deeper base – they are often blisters or erosions.</p> <p>The new definition includes many of the differential diagnoses that are commonly erroneously diagnosed as pressure injuries</p>	<p>Categories of injury (e.g. pressure injury) is specific to a wound type. The old pressure ulcer <u>definition Stage II: Partial thickness loss of dermis</u> presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister’ (NPUAP).</p> <p>Note that the true definition of an ulcer dermatologically is a loss of epidermis with a dermal or deeper base. Most Stage II pressure injuries are erosions- loss of epidermis with an epidermal base or a blister and not a true ulcer. The pressure injury term is preferred. The new definition includes exclusion of a number of conditions that are confused with a pressure injury and the Roman Numeral II is replaced with the number 2.</p> <p><u>Stage 2 Pressure Injury: Partial-thickness skin loss with exposed dermis</u> 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. This stage should not be used to describe moisture associated skin damage (MASD) including incontinence associated dermatitis (IAD), intertriginous dermatitis (ITD), medical adhesive related skin injury (MARS), or traumatic wounds (skin tears, burns, abrasions).</p>	<p>Appendix E reviews the new pressure injury staging system announced by the NPUAP in April 2016 after a consensus meeting.</p>
<p>Based on the wound packing slides is it a recommendation now to use PHMB gauze for fluffing the wound cavity?</p> <p>PHMB provides antibacterial action + moisture balance but gauze only provides moisture balance</p>	<p>PHMB (PolyHexaMethylene Biguanide) is an antibacterial molecule related to chlorhexidine. It is a large molecule bound to gauze rolls or pads that is not released when moistened. The molecule will kill bacteria by destroying the bacterial cell wall and therefore there are no viable organisms left to become resistant. If the gauze is put in dry, it will absorb exudate and keep the compartment above the wound relatively sterile preventing further bacterial contamination of the wound surface. The PHMB does not penetrate the wound surface and therefore cannot cause tissue toxicity (non-release). If the gauze is moistened prior to application, it can donate water to the wound surface. If the gauze is applied dry, it will absorb moisture to achieve moisture balance. Normal saline soaked or dried gauze can provide moisture balance but it will not provide any antibacterial action- the moist gauze promotes bacterial growth.</p>	<p>Recommendation 3.4 Provide local pressure injury care:</p> <ul style="list-style-type: none"> <li>• Moisture balance</li> <li>• Infection Control (critical colonization – can be treated topically)</li> </ul>
<p>Can you talk more about the PUSH assessment tool?</p>	<p>The PUSH tool is a simple to use method for assessment and evaluation that most clinicians can easily implement into their work life with pressure injuries. It is comprised of only the assessment of only 3 items and takes 2 minutes to complete. It is one of the assessment tools recommended for use in the BPG for determining if the pressure injury is getting better or worse.</p>	<p>Recommendation 1.3</p>

<p>Are there recommendations for fluid needs?</p> <p>Fluid needs are included in a valid and reliable assessment tool</p> <p>Loss of excess fluid- check for infection or low albumin, anemia, chronic disease</p>	<p>The nutrition recommendations include:</p> <p>a) Screen all people with pressure ulcers for risk of malnutrition using a valid and reliable screening tool on first examination and if there is a delay in pressure ulcer healing.</p> <p>b) Determine the nutritional status of people at risk for malnutrition using a valid and reliable assessment tool within 72 hours of initial examination, and whenever there is a change in health status and/or the pressure ulcer(s).</p> <p>c) Perform a comprehensive nutrition assessment of people with poor nutritional status within 72 hours of initial examination, and if there is a change in health status or delayed healing.</p>	<p>Recommendation 1.5</p>
<p>As staging of a pressure injury is more than non-blanchable redness the reliability of interpreting it may be more difficult. Should stage 1 be included in prevalence and incidence audit of pressure injuries?</p> <p>Due to frequent errors never include stage 1 in incidence + prevalence studies</p>	<p>Stage 1 pressure injury definition has changed: 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.</p> <p>There are at least 2 dozen skin conditions that may be associated with non- blanchable erythema and this erythema is very difficult to identify on pigmented skin (brown, black) so that <b>only non-blanchable erythema that is oval in shape and over a pressure point should be classified as a stage 1 pressure injury.</b></p> <p>It is best not to include stage one in prevalence and incidence studies.</p>	<p>Appendix E reviews the new pressure injury staging system announced by the NPUAP in April 2016 after a consensus meeting.</p>
<p>How do you measure pressure in the feet and toes?</p> <p>Outside – pressure surfaces and footwear</p> <p>Inside - arterial</p>	<p>Are you referring to internal pressure of the arterial blood supply or external pressure from shoes, orthotics, beds and other surfaces?</p> <p>For shoes and orthotics, a Foot scanner has a transducer that is similar in appearance to an overhead transparency - this is placed between the orthotic and the foot in the shoe. The patient or test subject walks and 950 pressure points can be measured simultaneously and converted into colors with red indicating high pressure, blue medium pressure and yellow/white areas of low pressure. This type of test can reveal where plantar pressure redistribution devices may need to be altered. Callus on the plantar or dorsal surface of the foot also indicates an area of high pressure.</p> <p>A similar X scanner can measure pressures between the feet and the bed or other surfaces for patients that are insensate or cannot move their limbs normally.</p> <p>For the circulation - a palpable dorsalis pedis pulse can equal a pressure of 80 mm Hg or higher, the portable hand held Doppler can measure the Ankle Brachial Pressure Index (ABPI) at the bedside (ABPIs between 0.5- 1.3 are usually adequate for healing). Toe pressures are measured with a small cuff that can be applied to some specialized hand held Doppler's (a toe pressure of 55 is adequate for healing in most patients). More accurate sequential lower leg Duplex Doppler tests are performed in the vascular lab.</p>	<p>Recommendation 1.7: Perform a vascular assessment (i.e., medical history, physical exam) of people with pressure ulcer(s) in the lower extremities on initial examination.</p>
<p>Can Dr. Sibbald talk about the significance of surgical intervention for pressure injuries and potential timelines for consultation for surgery?</p>	<p>Surgical intervention of pressure ulcers is only successful when the cause has been adequately treated (infection, pressure relieving surfaces, transfers, incontinence, nutrition, mobility), patient centered concerns addressed, Wound Bed Preparation optimized, and the wound is healable but stalled. These are stage 3 and stage 4 pressure ulcers.</p>	<p>Surgery is not mentioned specifically in the recommendations</p>

<p>Stalled healable stage 3 and 4 pressure injuries with optimized treatment</p>	<p>The surgical program must start with a rehab assessment prior to surgery and a planned rehab program post-surgery for up to 12 weeks. Deep pressure ulcers with a base including bone with often not heal by secondary intension and need surgery for healing. There is a high recurrence rate (up to 75%) especially if treatment and rehab. Programs are not optimized.</p>	
<p>Two Questions: 1.Can you comment on oxygen therapy for wound healing? 2. Was hyperbaric O2 assessed?</p> <p>There is insufficient evidence to recommend HBOT in pressure injuries &amp; other chronic wounds</p>	<p>The Cochrane Database Syst Rev. 2004;(2):CD004123. On Hyperbaric oxygen therapy (HBOT) for chronic wounds. (Kranke P1, Bennett M, Roeckl-Wiedmann I, Debus S) concluded that Hyperbaric oxygen therapy (HBOT) on chronic wounds associated with other pathologies (other than Diabetic Foot Ulcers), <b>any benefit from HBOT will need to be examined in further, rigorous randomized trials. The routine management of such wounds with HBOT is not justified by the evidence in this review.</b></p>	<p>HBOT is not recommended in this guideline</p>
<p>Is there a recommendation for sitting time in a chair with a regular cushion or a pressure distribution cushion – is it the same?</p>	<p>All patients with pressure ulcers on the sacral/ ischial tuberosities/ pelvic and trochanter region with decreased mobility should sit on pressure redistribution cushions. They should shift their weight frequently that may depend on a rehabilitation assessment and often is every 10-20 minutes. Transfers avoiding friction and shear are also important when moving from a seated to recumbent position in bed.</p>	<p>Recommendation 1.8: Conduct a mobility and support surface assessment on initial examination and whenever there is a significant change in the person’s medical condition, weight, equipment, mobility, and/or pressure ulcer healing.</p>
<p>Please comment on insulin for treatment.</p> <p>There is no evidence for effectiveness</p>	<p>There is a very old and small study- topical insulin improved pressure ulcer healing (SR Van Orf, RM Gerber with 6 Insulin treated and 8 control) but 2 larger negative results-RM Gerber1979- 29 Geriatric patient RCT with no difference in Topical insulin vs. control at day 7 and 15 for wound healing of pressure injuries and Ebrahimifard 2015 with 44 patients compared to normal saline also found no significant difference.</p>	<p>Not recommended and not mentioned in the guideline</p>
<p>With implementation are there plans to reach family care givers to educate on pressure injury prevention particularly in CCAC's who have cut back on nursing/PSW services due to budget cuts?</p>	<p>There is a chance with Ontario Home Care services moving from Community Care Excess Centers to Local Health Integrated Networks to create a new home care paradigm that may include:</p> <ul style="list-style-type: none"> <li>• Education to empower patients and their circles of care for increased self-management</li> <li>• Re-examine nursing services with more assessment function and co-treatment for local wound care</li> <li>• Have homecare staff move out of the office and into the community where they could act as patient navigators/ advocates.</li> </ul>	<p>Recommendation 6.2: Lobby and advocate for investment in pressure ulcer management and treatment as a provincial strategic quality and safety priority in order to improve health outcomes for people with pressure ulcers.</p>
<p>Please post the reference to the Canadian Nutrition screening tool.</p>	<p><a href="http://nutritioncareincanada.ca/resorces/">http://nutritioncareincanada.ca/resorces/</a> Two questions: 1. Have you lost weight in the past 6 months without trying to loose this weight? 2. Have you been eating less than usual for more than a week? A person that answers yes to both questions is considered to be at nutritional risk.</p>	<p>Appendix M of the Guideline</p>
<p>When staging, injuries is it still considered a worsening stage 2 as it progresses and a healing stage 2 as it heals or do we stage it as its' current level?</p>	<p>A pressure injury is staged, then in your assessment you evaluate your findings and state that it is either healing or deteriorating, based on evidenced based assessment findings as listed or using something like the PUSH Tool, PWAT or other listed in Appendix I.</p>	<p>Recommendation 4.2: Use the initial wound assessment tool to monitor a person’s pressure injuries for progress toward person-centred goals on a regular basis and at dressing changes.</p> <p>Recommendation 1.3: See ‘pressure injury staging’ section The NPUAP staging system is not</p>

		intended to be used to characterized other types of wounds, or to describe the progression of a wound through the healing process.
--	--	--