A PART OF WOUND SOURCE™ practice accelerator

A CLINICAL GUIDE TO

Pressure Injury Risk Assessment & Prevention

NOVEMBER 2017

A Clinical Guide to Pressure Injury Risk Assessment & Prevention

By Cheryl A. Carver, LPN, WCC, CWCA, CWCP, DAPWCA, FACCWS, CLTC
Wound Care Educator

Pressure injuries (ulcers) are a major burden on our patients, families, caregivers, and the health care system. It is reported that 95% of pressure injuries are preventable, and 22 of every 100 patients will have a pressure injury. We as clinicians must be focused on prevention programs not only for our patients, but also because of the monumental cost to the health care system. Treatment for a full-thickness pressure injury can cost $44,000 to $90,000. If prevention measures were initially implemented, the cost would be substantially less.

The goal of pressure injury prevention is to maintain skin integrity. Developing a comprehensive pressure injury program should be evidence-based and consist of an action plan to promote prevention. Identifying a patient's specific risk factors and immediate implementation of preventive measures will decrease the risk of pressure injury significantly.

Risk Assessment, Monitoring and Screening

Use a validated risk assessment tool such as the Braden Scale for Predicting Pressure Sore Risk® (Braden Scale) or Pressure Ulcer Scale for Healing (PUSH) Tool. Depending on the risk assessment your facility or clinic is using, you will want to screen your patient for the following components:

- ☐ Impaired mobility (bedfast, chairfast)
- ☐ Incontinence and moisture (urine, stool, perspiration)
- ☐ Nutritional deficits (malnutrition, feeding difficulties)
- ☐ Altered level of sensory perception
- ☐ Advanced age
- ☐ Ability to communicate
- ☐ Comorbidities (diabetes mellitus, peripheral vascular disease, malnutrition, dementia, obesity, etc.)
- ☐ Diseases that cause contractures
- ☐ History of pressure injury

Note: Risk assessment frequency varies by health care setting.

Use a validated risk assessment tool such as the Braden Scale for Predicting Pressure Sore Risk® (Braden Scale) or Pressure Ulcer Scale for Healing (PUSH) Tool.

TIPS FOR CLINICIANS:

React to ANY change in skin color. Not all skin tones manifest pressure injury the same. Consider using wound images to identify descriptors of stage 1 and deep tissue pressure injuries of light and dark skin tones. The National Pressure Ulcer Advisory Panel (NPUAP) has published updated guidelines and photos that are available to download. Clinicians should always use good lighting when assessing patients.

LIGHTING: Pen lights or handheld mirrors with lights are a plus.

LOOK: Take your time during assessments, conducting a full body skin sweep and looking in folds and creases. Document any change in color or temperature of skin.

LISTEN: Listen to your patients. Many times, our patients can tune us into what is going on.

FEEL: Feel for bogginess, induration, and warmth on the skin. Remember: dark skin tones rarely blanch. These are all changes that could indicate pressure injury development.

REPORT: Report to the nursing supervisor, physician, and family. Immediately initiate a treatment and care plan.

Minimizing Mechanical Stress – Offloading and Patient Repositioning

Mechanical stress is any stress that produces friction, shear, or pressure. Mechanical stress will also delay wound healing progress. The degree of the mechanical stress depends on design of the support surface. Any distortion causes tissue destruction. Support surfaces used for prevention and treatment (beds, mattresses, overlays, or cushions) should redistribute weight equally in a three-dimensional manner. Patients with decreased or absent sensation are at highest risk for pressure injury.

Support surfaces used for prevention and treatment ... should redistribute weight equally in a three-dimensional manner.

Pressure Injury Prevention Turning and Repositioning Tools

Cuing Innovations – The following tools provide the body location to offload and position minimum of every two hours:

- Turning and repositioning clock with an alarm to cue
- Clock charts at the nursing station that are signed off by Unit Manager
- Music/bells over the loudspeaker to cue every two hours
- Turning and repositioning labels placed on the ends of the patient's bed as a reminder
- Tracking, logging and charting tools (these are signed off by the nursing assistant and nurse)

Wireless Sensor Monitoring System – A sensor is placed on the patient's chest. The sensor monitors and tracks the patient's activity. There is a generated report available for survey as well.

Turning and Repositioning (TAPS) – This is the most common pressure injury prevention protocol. The problem is that unless it is closely monitored, the program is not as successful. Utilizing extra resources and tools as mentioned will help implementation be more consistent.

Tissue Tolerance Test Tool – The State Operations Manual Appendix PP - Guidance to Surveyors for Long Term Care Facilities defines tissue tolerance as "the ability of the skin and its supporting structures to endure the effects of pressure, without adverse effects."

There is normally a three-phase process to this test. In Phase I, after the one-hour interval, staff repositions the resident off the area exposed to pressure and observes/documents any areas of redness. Recheck the area after 30 to 45 minutes. If there is persistent red skin, stop the test. Consider the area to be a stage I, notify the physician and obtain applicable treatment orders. The resident will

require repositioning at an interval shorter than one hour. If there is no persistent redness, continue to Phase II, extending the interval time to one and one-half hours and test as mentioned earlier. If there is no persistent redness, you can then extend interval time to two hours for turning and repositioning. This is Phase III.

Turning and Reposition Positioners – There are a variety of devices, pads, and slings that make turning easier and positioning more secure while helping to reduce pressure injuries.

Pressure Visualization System – Advancements in technology have made visual monitoring of the patient for pressure injury risk an option for health care providers. Current technology on the market includes a device that recognizes and tracks body position and pressure affecting all 12 bony prominences, provides feedback and alerts, and generates detailed data reports. It is also compatible with most support surfaces.

Pressure Redistribution & Support Surfaces

Support surfaces and cushions aid in the prevention of pressure injuries by redistributing pressure and offloading injury-prone areas (specifically bony prominences). Low air loss mattresses utilize continuous forced air through small pinholes in the mattress surface to manage the moisture and heat in between the individual and the mattress. Alternating pressure support surfaces use individual cells or air bladders that inflate in alternating patterns to shift pressure from one area to another on a timed schedule. Air fluidized mattresses employ the circulation of filtered air through silicone-coated ceramic beads, creating the characteristics of fluid for flotation of the patient on the surface. Static (or non-powered) support surfaces make use of air, water, foam or gel to redistribute pressure from vulnerable areas.

Support surfaces and cushions aid in the prevention of pressure injuries by redistributing pressure and offloading injury-prone areas ...

Comparison of Support Surface Features

Performance Characteristics	Low Air Loss	Alternating Pressure	Air Fluidized	Static Flotation (Air or Water)	Static Flotation (Foam)	Standard Mattress
Pressure Injury Stage	Stage 1-2	Stage 3-4	Stage 4, flap, graft	Stage 1-3	Prevention	——
Increased support area	YES	YES	YES	YES	YES	NO
Low moisture retention	YES	NO	YES	NO	NO	NO
Reduced heat accumulation	YES	NO	YES	NO	NO	NO
Shear reduction	YES	YES	YES	VARIABLE	NO	NO
Pressure redistribution	YES	YES	YES	YES	YES	NO
Dynamic	YES	YES	YES	NO	NO	NO

A Comparison of Seat Cushions

Foam	Gel	Air
ADVANTAGES: • Light weight • Inexpensive • Various densities • Waterproof fabric • No leakage • Low maintenance • Non-slip cover	**ADVANTAGES:** • Conformity • Pressure distribution • Waterproof cover • Minimizes heat • Easy to clean • Contoured postural support • Non-slip cover	**ADVANTAGES:** • Light weight Highly compressible • Impermeable membrane • Adjustable • Lateral stability • Durable • Absorbs shock
DISADVANTAGES: • Shorter wear time • Loses its shape • Bottom out risk	**DISADVANTAGES:** • Chance of leakage • Less absorbing impact • Heavy weight	**DISADVANTAGES:** • Chance of puncture • Chance of leakage • Maintenance of air level

Skin-protecting dressings ... can help protect the skin from repeated friction, but they will not help reduce pressure.

Other Forms of Mechanical Stress – Shear and Friction Identification and Prevention

Shear and friction play an important role in the development of pressure injuries. Friction usually, but not always, accompanies shear. Friction is the force of rubbing two surfaces against one another. Friction to the most commonly affected areas can be reduced with protective devices. Skin-protecting dressings, such as transparent films, hydrocolloids, and bordered foam dressings, can help protect the skin from repeated friction.

Shear is a gravity force pushing down on the patient's body with resistance between the patient and the chair or bed. Shear injury is created when the deeper fatty tissues and blood vessels are damaged by a combination of friction and gravity. The best way to avoid this type of injury is to avoid a semi-Fowler and upright position in bed or to use correct positioning in a chair. Take precautions to ensure that your patients do not slide down while in bed. You can do this by raising the foot of the bed and propping the knees up with pillows or positioning devices while also offloading the heels.

HELPFUL CHECKLIST OF WAYS TO REDUCE FRICTION AND SHEAR

- [ ] Pad and protect vulnerable areas with transparent, hydrocolloid, composite, foam dressings.
- [ ] Use heel or elbow protectors for hospice/palliative patients.
- [ ] Educate caregivers and nursing staff on how to identify key factors for pressure injuries.
- [ ] Ensure that support surfaces provide for an individual's needs: pressure redistribution, shear reduction and/or microclimate control.
- [ ] Utilize positioning devices in wheelchairs or chairs to reduce shearing.
- [ ] Establish a risk assessment per facility protocol (Braden Scale, PUSH Tool).
- [ ] Use draw sheets to pull up, transfer and position your patient. Do not drag.
- [ ] Pad edges of casts, splints, and /or braces.
- [ ] Keep the head of bed flat or below 30 degrees if at all possible.
- [ ] Use a mechanical lift for transfers.

Moisture Control to Prevent Pressure Injury

Basic steps for controlling and balancing moisture include:

1. Cleanse skin gently after every incontinence episode, using a pH-balanced, no-rinse skin cleanser. Cleansers lessen the cleansing time than traditional cleansing with soap and water. Many cleansers already contain a variety of additives, simplifying the cleansing process. Examples: antiseptics, emollients, humectants and moisturizers.

2. Moisturize dry skin to maximize lipid barriers. Moisturize at minimum twice daily.

3. Protect with a moisture barrier as indicated. Most common skin barriers used are petrolatum (if urine only); otherwise, dimethicone and zinc oxide.

Nutrition and Hydration

There is a strong correlation between nutritional/hydration deficits and pressure injury. Refer all patients at risk for pressure injury to a Registered Dietitian. Nutrition and hydration are important for maintaining healthy skin. Encourage foods that are calorie, vitamin, and protein rich. Provide nutritional supplements and fluids between meals and with medication pass, unless contraindicated.

There is a strong correlation between nutritional/hydration deficits and pressure injury.

Ongoing Pressure Injury Education

We can utilize the tools mentioned earlier, but unless we educate, mentor, empower, and monitor, a prevention program will not be successful. Protocols should be followed consistently to provide a strong structured prevention program. New and current nursing staff training should include documentation methods related to pressure injury, current treatments, and prevention management. Use helpful resources provided by the NPUAP to maximize implementation as well. The NPUAP provides complimentary webinars, illustrations, posters, white papers, policies and standards.

What Can You Do to Bolster Pressure Injury Prevention?

1. Provide mandatory educational in-services, lectures, and activities for nursing staff.
2. Provide education to patients and their families.
3. Develop specific policies and procedures related to pressure injury prevention and treatment.
4. Complete weekly rounding on high-risk and current wound patients with the physician, nurse practitioner, and charge nurse.
5. Perform spot checks with nursing staff to ensure that prevention practices are being carried out.
6. Organize prevalence and incidence audits.

Use helpful resources provided by the NPUAP to maximize implementation as well.

Sources

Cooper KL. Evidence-based prevention of pressure ulcers in the intensive care unit. *Crit Care Nurse*. 2013 Dec;33(6):57-66. doi: 10.4037/ccn2013985.

Lyder CH, Ayello EA. Pressure Ulcers: A Patient Safety Issue. In: Hughes RG, ed. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville, MD: Agency for Healthcare Research and Quality; 2008.

Watanabe L. Shear: Physics, Risks, Assessment & Management of a Long-Time. Mobility Management. https://mobilitymgmt.com/articles/2012/04/01/shear.aspx. Published April 1, 2012. Accessed October 24, 2017.

National Pressure Ulcer Advisory Panel (NPUAP) announces a change in terminology from pressure ulcer to pressure injury and updates the stages of pressure injury. National Pressure Ulcer Advisory Panel. https://www.npuap.org/national-pressure-ulcer-advisory-panel-npuap-announces-a-change-in-terminology-from-pressure-ulcer-to-pressure-injury-and-updates-the-stages-of-pressure-injury/. Published April 13, 2016. Accessed October 24, 2017.

Shear: A contributory factor in pressure. National Pressure Ulcer Advisory Panel. http://www.npuap.org/wp-content/uploads/2012/03/Shear_slides_with_animation.pdf. Accessed October 24, 2017.

International review. Pressure ulcer prevention: pressure, shear, friction and microclimate in context. A consensus document. Wounds International. http://www.woundsinternational.com/media/issues/300/files/content_8925.pdf. Published 2010. Accessed October 24, 2017.

Bennett G, Dealey C, Posnett J. The cost of pressure ulcers in the UK. *Age Ageing*. 2004 May;33(3):230-5.

Rapp MP. Tissue Tolerance Testing and the Braden Scale: A Comparison of Methods to Reduce Pressure Ulcer Risk. Long Term Care Medicine, March 2011, Tampa, Florida, USA, Poster. Abstract available at http://www.jamda.com/article/S1525-8610(10)00501-3/abstract

CMS MDS 3.0 RAI Manual. Centers for Medicare & Medicaid Services. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/MDS30RAIManual.html. Accessed October 24, 2017.

The National Pressure Ulcer Advisory Panel - Support Surface Standards Initiative (S3I). Terms and Definitions Related to Support Surfaces. The National Pressure Ulcer Advisory Panel. http://www.npuap.org/wp-content/uploads/2012/03/NPUAP_S3I_TD.pdf. Published January 29, 2007. Accessed October 24, 2017.

Pressure Injury Prevention Points. The National Pressure Ulcer Advisory Panel. http://www.npuap.org/wp-content/uploads/2016/04/Pressure-Injury-Prevention-Points-2016.pdf. Published April 2016. Accessed October 24, 2017.

WOUND SOURCE™

2017 Advisory Board Members

WoundSource™ Team

STAFF

Publisher/President | Jeanne Cunningham
jeanne@kestrelhealthinfo.com

Vice President | Brian Duerr
brian@kestrelhealthinfo.com

Print/Online Production Manager | Christiana Bedard
christiana@kestrelhealthinfo.com

Editorial Director | Miranda Henry
miranda@kestrelhealthinfo.com

HOW TO REACH US

Corporate Office
P.O. Box 189 – 206 Commerce St.
Hinesburg, VT 05461
Phone: (800) 787-1931
E-mail: info@kestrelhealthinfo.com
Website: www.woundsource.com
Editorial inquiries: editorial@kestrelhealthinfo.com
Advertising inquiries: sales@kestrelhealthinfo.com

For more information on pressure injury prevention, click here.

FOLLOW US: