What’s New in the 2014 Pressure Ulcer Prevention Guidelines?

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Strength of Evidence–Labeled A, B, C here

Strength of Recommendation-Labeled 2, 1, 0 here

Ranking of Recommendations

- A = direct evidence from well designed controlled trials
  - N = 6
- B = direct evidence from clinical series
  - N = 71
- C = indirect evidence (other wounds, healthy humans, animal models) and or expert opinion
  - N = 498

Strong positive recommendation
N = 247

Weak positive recommendation
N = 294

No specific recommendation
N = 34

Incidence and Prevalence

- Use a rigorous method to conduct P&I studies
  - Be clear on which patients (C/2)
  - Educate the assessors and check reliability
  - Two assessments per skin inspection
- Compare findings to data sets using similar methods (C/1)
  - Many studies included in guideline
- Use facility acquired rates rather than prevalence rates to evaluate pressure ulcer prevention programs (C/1)
Reporting Incidence and Prevalence

- Be clear on whether Stage 1 was included
- Present data by level of risk for risk adjustment
  - Braden Score
  - Unit ulcer acquired
  - 1000 patient days (C/1)
- Report by common anatomical locations
- Include data on medical device ulcers and mucous membrane ulcers
- Perform root cause analysis to determine avoidability
  - Identify unavoidable ulcers

Risk Assessments

- Conduct structured risk assessment as soon as possible, but within a maximum of 8 hours (C/2)
  - Repeat based on acuity or change in condition (C/1)
  - Several comments on this statement
  - Why wait 8 hours? What about 12 hour shifts?
- Do not rely on total risk assessment score alone, use subscales to plan preventive care (C/2)
- Use clinical judgement to refine risk assessment
  - No risk scale is perfect (C/2)

Risk Assessment Scales

- Braden, Norton and Waterlow most common
- Key Risk Factors of mobility/activity limitations and skin status
  - Braden has mobility, activity and friction/shear
  - Norton has mobility and activity
  - Waterlow has mobility
  - All 3 have nutrition and moisture risk factors
  - Only Waterlow has a partial measure of skin status
  - Only Waterlow has a partial measure of perfusion
Risk from Immobility

- Consider bedfast or chair-fast patients to be at risk (B/1)
  - This statement was in 2009 guideline
  - Powerful, crucial message for all providers
- Consider these aspects of immobility (B/2)
  - Mobility related ADLs
  - Factors affecting mobility
  - Friction and shear within mobility
  - Interface pressures

Risk from Prior Skin Injury

- Consider Stage 1 pressure ulcers to be a risk factor for progression to higher stages or development of new ulcers (B/1)
- Consider existing pressure ulcers to be a risk factor (B/2)
- Consider the general status of the skin (B/1)
  - Scar formation over prior healed full thickness ulcer
  - Injury from incontinence

Risk from Impaired Perfusion

- Consider the impact of impaired perfusion and oxygenation on risk (C/1)
- Use proxy variables to indicate risk
  - Peripheral arterial disease
  - Diabetic neuropathy
  - Stroke
  - Renal disease
  - History of smoking
Risk from Impaired Nutrition

- Food intake
- Low weight/Low body mass index
- Arm measurements
- Malnutrition diagnosis
- Weight loss
- Nutrition screening / dietician referral
- Nutrition assessment scale scores

  - Albumin and prealbumin are not predictive
    - In the acutely ill, these proteins are low when inflammation is present

Risk from Excessively Moist Skin

- Dual urinary and fecal incontinence.
- Skin moisture.
- Moisture subscale of a risk assessment tool.
- Fecal incontinence.
- Urinary catheter in use
- Urinary incontinence.

Other Risk Factors (C/1)

- Increased body temperature
- Advanced age
- Sensory perception
- Hematological measures
  - Abnormal urea and electrolytes
  - Low WBC, albumin, hemoglobin
  - Elevated C-reactive protein (inflammatory marker)
- General health status
  - Dependent in ADLs
  - DNR status
  - ASA score in surgical patients
  - APACHE score in ICU patients
Skin Assessment

› In individuals at risk of pressure ulcers, conduct a comprehensive skin assessment:
  • as soon as possible but within eight hours of admission (or first visit in community settings)
  • as part of every risk assessment,
  • ongoing based on the clinical setting and the individual’s degree of risk, and
  • prior to the individual’s discharge (C/1)

Skin Erythema

› Use the finger or disc method to assess (C/1)
› Differentiate the cause and extent of erythema—blanchable or nonblanchable? (C/2)
  • Blanchable erythema
    • normal reactive hyperemia and should disappear in several hours
    • May be inflammatory erythema
  • Nonblanchable erythema
    • indicates structural damage to the capillary bed/microcirculation
    • nonblanching erythema shown to be an independent predictor of Stage 2 pressure ulcer development

Skin assessment with medical devices

› Inspect the skin under and around medical devices at least twice daily (C/2)
  • Include skin assessment in handoff
› Conduct more frequent skin assessments at the skin-device interface in individuals vulnerable to fluid shifts and/or exhibiting signs of localized/generalized edema (C/2)
Preventing Medical Device Pressure Ulcers

- Result from the use of devices designed and applied for diagnostic or therapeutic purposes
  - Ulcer generally closely conforms to the pattern or shape of the device
- Mucous membrane is very vulnerable to pressure from medical devices
  - These ulcers are not staged

MDR-PrU Prevention

- Consider adults with medical devices to be at risk for MDR-pressure ulcers. (B/2)
  - 34.5% of ulcers in ICU were from Medical Devices
- Consider children with medical devices to be at risk for pressure ulcers. (B/2)
  - Rates vary by type of device and age of child
- Review and select medical devices based on the devices' ability to induce the least degree of damage from the forces of pressure and/or shear. (B/2)
  - A root cause analysis will identify the device and changes in device or practice may be needed

MDR-PrU Prevention

- Ensure that medical devices are correctly sized and fit appropriately (C/2)
  - Edema post application increases pressure
- Apply all medical devices following manufacturer's specifications. (C/2)
  - Return faulty devices
  - How can you, if you aren't tracking them?
- Ensure that medical devices are sufficiently secured to prevent dislodgement without creating additional pressure. (C/2)
  - Dressings may be needed for padding

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Daily care for prevention

- Reposition or rotate and support device to change pressure points (C/2)
- Remove device as soon as feasible (C/2)
- Keep skin clean and dry under device (C/2)

Preventive Skin Care

- Avoid positioning the individual on an area of erythema whenever possible (C/2)
  - A carry over from 2009, but a crucial message
- Keep the skin clean and dry (C/2)
  - Yes, this is new to the 2014 guideline!
- Use a pH balanced skin cleanser (C/2)
  - Yes, this is new to the guideline!
- Cleanse the skin promptly following episodes of incontinence (C/2)
  - Yes, this is new to the 2014 guideline!

Emerging Therapies for Prevention – Microclimate Control

- Microclimate is local tissue temperature and moisture at body/support surface interface
  - Metabolic rate rises with increased temperature and without increased perfusion due to pressure tissue will die
- Consider the need for additional features such as ability to control moisture and temperature when selecting a support surface and or surface cover (C/1)
- Do not apply heating devices directly on skin surfaces or pressure ulcers (C/1)
Emerging Therapies for Prevention – Prophylactic Dressings

- Consider applying a polyurethane foam dressing to bony prominences (e.g., heels, sacrum) for the prevention of pressure ulcers in anatomical areas frequently subjected to friction and shear (B/1)
- Lack of clarity in discussion about actual structure of dressing
  - Not all studies cited used polyurethane foam
  - Many polyurethane foam dressings on the market
  - Important to know how they work and if they can reduce pressure, shear or microclimate
- Dressings do not replace the rest of prevention! (C/1)

When selecting a prophylactic dressing consider (C/1)

- ability to manage microclimate
- ease of application and removal
- ability to regularly assess the skin
- anatomical location where the dressing will be applied
- the correct dressing size
  - Must be larger than area at risk
  - Pressure and shear forces are transmitted through the dressing

Fabrics

- Consider using silk-like fabrics rather than cotton or cotton-blend fabrics to reduce shear and friction (B/1)
  - Four studies examining effect of reduced friction from linen on pressure ulcer formation
Electrical Stimulation

- For muscle contraction in SCI patients (C/0)
  - Subjects used shorts with ES in them to cause contraction of gluteus and hamstrings
  - May have gotten a neutral response due to respondents not focusing on SCI

Nutritional Assessment

- Assess the weight status of each individual to determine weight history and identify significant weight loss
  - ≥ 5% in 30 days or ≥ 10% in 180 day (C/1)
- Assess the individual’s ability to eat independently (C/2)
- Assess the adequacy of total nutrient intake
  - Food, fluid, oral supplements and enteral/parenteral feeds (C/2)

Provision of calories

- Adjust energy intake based on weight change or level of obesity. Adults who are underweight or who have had significant unintended weight loss may need additional energy intake (C/2)
- Revise and modify/liberalize dietary restrictions when limitations result in decreased food and fluid intake (C/1)
Provision of Protein/Micronutrients

- 1.25 to 1.5 grams protein/Kg per day for both patients at risk and with ulcers (B-C/1)
- Assess renal function to ensure that high levels of protein are appropriate (C/2)
- Provide/encourage consumption of a balanced diet that includes good sources of vitamins and minerals. (C/2)
- Provide/encourage vitamin and mineral supplements when dietary intake is poor or deficiencies are confirmed or suspected. (C/1)

Provision of Fluids

- Provide and encourage adequate daily fluid intake for hydration consistent with the individual’s comorbid conditions and goals. (C/2)
- Monitor for signs and symptoms of dehydration (C/1)
- Provide additional fluid for individuals with dehydration, elevated temperature, vomiting, profuse sweating, diarrhea, or heavily exuding wounds. (C/2)

Repositioning

- Reposition all individuals at risk of pressure ulcers, unless contra-indicated. (A/2)
  - 3 RCTs discussed in the guideline
  - Bergstrom’s RCT was after the cut off date
  - A repeat from the 2009 guideline with changed wording, 2009 addressed duration and magnitude
- Consider the condition of the individual and the pressure redistribution support surface in use when deciding if repositioning should be implemented as a prevention strategy. (C/1)
  - When patients cannot be moved, change the mattress
Repositioning Frequency
- Consider the pressure redistribution support surface in use when determining the frequency of repositioning. (A/1)
  - Appeared in 2009 guideline stated differently
- Establish pressure relief schedules that prescribe the frequency and duration of weight shifts. (C/1)
  - Teach individuals to do ‘pressure relief lifts’ or other pressure relieving maneuvers as appropriate. (C/2)
- Do not leave the individual on a bedpan longer than necessary. (C/2)
  - Yes, this statement is in the guidelines!

Repositioning Techniques
- Use a split leg sling mechanical lift when available to transfer an individual into a wheelchair or bedside chair when the individual needs total assistance to transfer. Remove the sling immediately after transfer. (C/1)
- Do not leave moving and handling equipment under the individual after use, unless the equipment is specifically designed for this purpose. (C/2)
  - New NPUAP position on the breathability of slings

The angle of turns and HOBs
- Use the 30° tilted side-lying position (C/1)
  - No discussion of the efficacy of this position in bariatric patients
- Encourage patients who can reposition themselves to sleep in a 30° to 40° side-lying position or flat in bed (C/1)
  - Be certain the patient is actually turning
- Avoid HOB elevation that places patient in a slouched position
  - Maximal shear forces at 45 HOB elevation
Support surfaces and repositioning

- No support surface replaces turning/repositioning
  - They may help with "turn assist" features
  - They may lengthen the time interval

Repositioning in a Chair

- Use a pressure redistributing seat cushion for individuals sitting in a chair whose mobility is reduced. (B/2)
  - Examine your hospital bedside chairs for pressure redistribution and use chair cushions
  - Limit time sitting in a chair without pressure relief (B/2)
    - Not a new statement, but very important now with progressive mobility programs

Mobilization and chair

- Early mobility programs call for extended sitting

  Guideline:
  - Position patient for stability and ability to perform usual activities (SoE=C; SoR++)
  - Tilt the seat back to prevent sliding
  - Place feet on foot rest or foot stool

This patient is not safe in this chair; nor is he sitting on the chair cushion
Selecting Seating Surfaces

› Individualize the selection and periodic re-evaluation based on: (C/1)
  - body size and configuration;
  - the effects of posture and deformity on pressure distribution; and
  - mobility and lifestyle needs.

› Select a stretchable/breathable cushion cover that fits loosely on the top surface to dissipate heat and moisture (C/1)

› Inspect seating surface daily for wear

Chair cushion options

Air Cell  Foam  Gel  Air Columns

Wheelchair seating

› Individualize the selection and periodic re-evaluation of a wheelchair/seating support surface and associated equipment for posture and pressure redistribution with consideration to:
  - body size and configuration;
  - the effects of posture and deformity on pressure distribution; and
  - mobility and lifestyle needs. (C/2)

› Refer individuals to a seating professional for evaluation. (C/1)
Wheelchair seating
- Select a pressure redistribution cushion that:
  - provides contour, uniform pressure distribution, high immersion or offloading;
  - promotes adequate posture and stability;
  - permits air exchange to minimize temperature and moisture at the buttock interface; and
  - has a stretchable cover that fits loosely on the top cushion surface and is capable of conforming to the body contours (C/2)
- Assess other seating surfaces commonly used by the individual and minimize the risk they may pose to skin. (C/1)

Repositioning in Wheelchair
- Encourage the individual to reposition regularly while in bed and seated. (C/1)
  - Provide appropriate assistive devices to promote bed and seated mobility. (C/2)
- Establish pressure relief schedules that prescribe the frequency and duration of weight shifts. (C/1)
  - Teach patient to do ‘pressure relief lifts’ or other pressure relieving maneuvers as appropriate and consistent with the ability of the individual. (C/1)
- Promote and facilitate self-management for individuals with SCI. (C/2)

Repositioning After SCI
- Maintain proper positioning and postural control. (C/2)
  - Provide adequate seat tilt to prevent sliding forward in the wheelchair/chair, and adjust footrests and armrests to maintain proper posture and pressure redistribution. (C/2)
  - Avoid the use of elevating leg rests if the individual has inadequate hamstring length. (C/1)
- Use variable-position seating (tilt-in-space, recline, and standing) in manual or power wheelchairs to redistribute load off of the seat surface. (C/1)
  - Tilt the wheelchair before reclining. (C/1)
Mobilization

- Develop a schedule for progressive sitting according to the individual’s tolerance and pressure ulcer response. (C/1)
  - Commonly done after flap repair, this statement appears in the general guidelines
- Increase activity as rapidly as tolerated. (C/1)
  - One study found increased PrU with progressive mobility program that included HOB elevation to 45 degrees as part of the mobility intervention

Prevention of Heel Ulcers

- Risk factors for heel ulcers are not clearly identified
- Apply heel suspension devices per manufacturers instructions (C/1)
- Remove heel suspension device periodically to assess skin integrity (C/1)
  - Check skin more frequently in patients at higher risk due to PVD and neuropathy
- Do not use IV bags to float heels (C/2)

Support Surfaces

- Select a support surface that meets the individual’s needs, based on: (C/2)
  - level of immobility and inactivity;
  - need for microclimate control and shear reduction;
  - size and weight of the individual;
  - risk for development of new pressure ulcers
- Identify and prevent potential complications of support surface use. (C/1)
  - Entrapment
  - Falling with an overlay higher than side rails
  - High air loss leading to fluid loss
Choosing a support surface
- Review the characteristics of foam mattresses to ensure they are high specification. (C/2)
  - Depth = 6 inches thick
  - Density = 35-130 density hardness
  - Support factor = Inflection Density (IFD) 1.75 to 2.4
  - Cover MVTR = minimum 300 g/m²/24hrs
- Other features to consider
  - Multi layering alters the design
  - Memory foam may increase skin temperature
  - Cross cut foam may reduce shear
  - Stiffer side walls can facilitate transfers
  - Concave shape may prevent falls, but difficult to lift patient
  - Hinging system may improve ability to sit up in bed without shearing

Support Surfaces, Continued
- Choose positioning devices and incontinence pads, clothing and bed linen that are compatible with the support surface. Limit the amount of linen and pads placed on the bed. (C/2)

General Aspects of Care in Bariatric Patients
- Organizational Level
  - Provide safe, respectful care and avoid injuries to both the individual and health professionals. (C/2)
  - Maximize workplace safety by implementing organization-wide bariatric management strategies that address manual handling techniques. (C/2)
  - Provide pressure redistribution support surfaces and equipment appropriate to the size and weight of the individual. (C/2)
- Calculate BMI and classify obesity (C/1)
- Refer bariatric individuals to a registered dietitian (C/2)
Skin Assessment/Care in Bariatrics

- Assess all skin folds regularly. (C/2)
- Access adequate assistance (C/2)
- Differentiate intertriginous dermatitis from Stage 1 and 2 pressure ulcers. (C/1)
- Ensure the individual is provided with a bed of appropriate size (width) and weight capacity specifications. (C/2)
- Consider enhanced pressure redistribution, shear reduction and microclimate control (C/1)

Repositioning in Bariatrics

- Avoid pressure on skin from tubes, other medical devices and foreign objects. (C/2)
- Use pillows or other positioning devices to offload the pannus or other large skin folds and prevent skin-on-skin pressure. (C/1)
- Check the bed for foreign objects. (C/1)

Prevention in Elders

- Assessments and Care Planning
  - Consider the individual’s cognitive status when conducting a comprehensive assessment and developing prevention or treatment plan. (C/2)
  - Incorporate the individual’s cognitive ability into the selection of a pain assessment tool. (C/2)
  - Differentiate from other skin injuries, particularly incontinence-associated dermatitis or skin tears. (C/1)
  - Set goals consistent with the values and goals (C/1)
    - Engage the family or legal guardian when establishing goals of care and validate their understanding of these goals. (C/1)
  - Educate the individual and his or her significant others regarding skin changes in aging and at end of life. (C/2)
Care of Aged Skin

- Protect aged skin from skin injury associated with pressure and shear forces. (C/2)
- Use a barrier product to protect aged skin from exposure to excessive moisture in order to reduce the risk of pressure damage. (C/1)
- Select atraumatic wound dressings to reduce further injury to frail older skin. (C/1)
- Develop and implement an individualized continence management plan. (C/1)

Repositioning Elders

- Regularly reposition the older adult who is unable to reposition independently. (A/2)
  - Same evidence as was used for repositioning
- Exercise caution in position selection and manual handling technique when repositioning. (C/1)
- Frequently reposition the head of older adults who are sedated, ventilated or immobile. (C/1)

Prevention in Palliative Care

- This section was in the treatment component of the 2009 guideline
- No new recommendations
  - Rewording of some of them
Implementing the Guideline

- Facilitators, Barriers (C/2)
  - Knowledge and attitudes of professional staff
  - Available equipment and access to it
  - Awareness of medical devices leading to pressure ulcers
  - Staffing levels/staff cohesion

- Implementation Strategy (C/1)
  - Conduct regular monitoring of FAPU rates/Inform staff
  - Optimize work procedures
  - Tailored staff education
  - Wound care champions
  - Nurse led QI programs
  - Cues to perform preventive care
  - Awareness campaign
  - Improved documentation systems

Summary

- Two prevention recommendations are an A level
  - Consider support surface when planning
  - Repositioning using data from European studies
- Using Electrical stimulation for prevention was the lowest rated item at C/0
- Greater majority of statements are C/1 level

Save the date

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