Pressure Ulcer Care: Specific Actions for Improved Prevention and Treatment
Barbara M. Bates-Jensen PhD, RN
School of Nursing & David Geffen School of Medicine,
Division of Geriatrics, UCal &
VA Greater Los Angeles Healthcare System,
Geriatric, Research, Education, Clinical Center

WHY ACT NOW?

California is rated 41st for pressure ulcers
State PU rate = 13.5 %
National PU rate = 12%
Based on 4th quarter 2008 CMS measures

Quality data is transparent with publicly reported measures
Evidence exists that quality improvement processes can improve care
National attention on improving pressure ulcer care
New regulations & policy changes provide external motivation to improve pressure ulcer care
8 KEY ACTIONS FOR PRESSURE ULCER IMPROVEMENT

1. Update staging definitions
2. Conduct standardized risk assessment on admission, weekly for 4 weeks, and quarterly with MDS
3. Institute pressure ulcer prevention program that includes: pressure redistribution support surface use & scheduled repositioning programs, daily skin inspection, incontinence care
4. Nutrition assessment for 'at risk' patients
5. Standardize wound assessment
6. Provide staff feedback weekly
7. Institute multi-disciplinary PU team
8. Involve resident & family

National Pressure Ulcer Advisory Panel new staging definitions 2007

- A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction.
- A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors is yet to be elucidated.
Stage 1

• Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area.

• The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Stage I may be difficult to detect in individuals with dark skin tones. May indicate “at risk” persons (a heralding sign of risk)

Stage 2

Partial thickness loss of dermis 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.
Stage 2
- Presents as a shiny or dry shallow ulcer without slough or bruising.*
  - This stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation.
  - *Bruising indicates suspected deep tissue injury

Stage 3
- Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.

Stage 3
- The depth of a stage 3 pressure ulcer varies by anatomical location.
  - The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and stage III ulcers can be shallow.
Stage 4

- Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling.

Stage 4

- The depth of a stage 4 pressure ulcer varies by anatomical location.
  - The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow.

Unstageable

- Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed.
Unstageable

• Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore stage, cannot be determined.
  – Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as "the body’s natural (biological) cover" and should not be removed.

Suspected Deep Tissue Injury

• Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure &/or shear.
• The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.

Suspected Deep Tissue Injury

• Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with treatment.
What do we know about DTI?

- Most common location
  - Pelvic-99%; Sacrum-74%
- Hospitalized, critically ill, elders admitted with:
  - Pneumonia
  - Sepsis
  - Failure to thrive & dehydration
- Comorbidities
  - Anemia, Heart failure, Diabetes, Peripheral Vascular disease, End stage renal disease

What happened when they entered the hospital?

- 14% intubated in ER
- Mean time spent in ER 11.7 hours on a stretcher
- 31% admitted to critical care units
- Median LOS: 25 days
  - 45% discharged back to nursing home
  - 34% died
- What happened to the DTI site?
  - 73% deteriorated into full thickness ulcers, 46% of which were unstageable

2. Conduct standardized risk assessment on admission, weekly for 4 weeks, and quarterly

8 KEY ACTIONS FOR PRESSURE ULCER IMPROVEMENT
Braden Scale

- Score range:
  - 6-23
- Low score = High risk
- Score of 16 or below indicates risk (acute care)
- Score of 18 or below indicates risk (LTC)
- Score of 10 or below indicates HIGH risk
- **BUT choose the cut score that works for your setting & population**

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3. Institute pressure ulcer prevention program that includes: pressure redistribution support surface use & scheduled repositioning programs, daily skin inspection, incontinence care

**8 KEY ACTIONS FOR PRESSURE ULCER IMPROVEMENT**

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If At Risk...

- Consistently implement a prevention plan:
  1. Daily skin inspection
  2. Pressure redistribution chair & bed
  3. Repositioning only for those who can’t move
  4. Nutrition assessment
  5. Incontinence care
Level of evidence: Prevention programs

- Turning and/or repositioning has high face validity
  - No well-designed controlled trials that examine its effect in the absence of other interventions.
- Regular skin inspection and assessment
- Improved mobility
- Adequate nutritional intake
- Documentation of the skin examination
- General educational interventions for hospital staff
  - All supported by before-after study designs
- Use of pressure reduction support surfaces
  - Supported by RCTs and clinical trials

How do you make sure it occurs?

- Turning clocks
- Visual cues in room & medical record
- Auditory cues
- Grand turning rounds to audit process
- Monitor transfers and hand-offs

Pressure Redistribution

- Support Surfaces part of standard equipment
  - Relative reduction of pressure ulcers by 60% compared to standard hospital mattresses
- Wheelchair support surfaces; lower pressure ulcer incidence
  - BUT much harder to implement support surfaces on chairs vs. beds
  - Easy to audit process
4. Nutrition assessment for ‘at risk’ residents

8 KEY ACTIONS FOR PRESSURE ULCER IMPROVEMENT

Nutrition Support

- 30-40 cal & 1-2 gms protein/kg/day if consistent with goals
- Adequate fluid intake
- Multi-vitamin supplement
- Tube feedings NO effect on ulcers

- No evidence for additional supplementation of nutrients (Vitamins A, E, C, Arginine, Zinc)
- Supplements may decrease unfavorable outcomes because reverse nutritional deficits but may not decrease pressure ulcers

5. Standardize wound assessment

8 KEY ACTIONS FOR PRESSURE ULCER IMPROVEMENT
Bates-Jensen Wound Assessment Tool (formerly the PSST)

- 15 items
- 2 non-scored
  - location & shape
- 13 items rated on 1-5 scale
  - 1=best & 5=worst for the item
- Sum for total score (13-65 range)
- Add 13 item scores to obtain total score & plot on continuum
  - Available from author

Bates-Jensen Wound Assessment Tool (BWAT)

- Size
- Depth
- Edges
- Undermining & tunneling
- Necrotic tissue type & amount
- Exudate type & amount

- Surrounding Tissue Characteristics
  - Color
  - Induration
  - Edema
  - Granulation
  - Epithelialization

BWAT Tool
How to evaluate wound size

- Measure weekly in centimeters
  - Length × Width
  - Longest aspect of visible wound multiplied by perpendicular Widest aspect of visible wound
  - Do the math to get surface area; get a calculator if needed

BWAT Depth item; similar to staging VISIBLE depth at time of assessment:

1 = Non-blanchable erythema on intact skin
   - Tissues damaged but no break in skin surface
2 = Partial thickness skin loss involving epidermis &/or dermis
   - Superficial, abrasion, blister or shallow crater. Even with, &/or elevated above skin surface (e.g., hyperplasia)
3 = Full thickness skin loss
   - Involving damage or necrosis of subcutaneous tissue; may extend down to but not through underlying fascia; &/or mixed partial & full thickness &/or tissue layers obscured by granulation tissue (deep crater with or without undermining of adjacent tissue).
4 = Obscured by necrosis
   - Visualization of tissue layers not possible due to necrosis
5 = Full thickness skin loss with extensive destruction
   - Tissue necrosis or damage to muscle, bone or supporting structures (supporting structures include tendon, joint capsule)

Edges

Indistinct, diffuse, none clearly visible
Edges

- Edges attached to wound base
- Edges not attached to wound base

Edges

- Rolled under, thickened edges.

Edges

- Fibrotic, scarred edges
- Hypertrophic edges
Undermining

- Advance cotton-tipped applicator under wound edge until unable to gently probe further
- Measure distance from edge of wound to point where applicator can be palpated on skin surface
- Note percent of wound edge involved in undermining process

50% edge involved
5 cm. distance

Undermined beyond 4 cm; the 2 ulcers are connected
50% of wound edge involved in undermining process

Measure this distance
Necrotic Tissue: Slough

Necrotic Tissue: Eschar

Necrotic Tissue Amount

- Determine what percent of wound covered with necrotic tissue.
- Assess using 4 quadrants

62% Necrotic
Exudate Type

- Serous, Serosanguineous
- Purulent

Exudate Amount-Key Points

1. **Check the dressing, failing to do so can give the wrong impression.**
2. Make your evaluation of exudate before you clean the wound!
   - **None** = Wound & dressing are Dry
   - **Scant** = Look for Sheen/Shine indicating moisture is present, dressing is Damp
   - **Small** = Moist to Wet surface with drainage contained within the edges of the wound, dressing moist
   - **Moderate** = Definitely Wet, exudate expands beyond the wound bed, dressing is wet.
   - **Large** = Drainage Dripping out of the wound bed, dressing Leaking.

Exudate Amount

- Use clinical judgement
- Evaluate the wound dressing before discarding
- Evaluate the wound prior to cleansing
- Look for signs of excess exudate like maceration of surrounding skin
Evaluate Surrounding Skin Characteristics

- Surrounding skin color
  - Observe color in tissues/skin around wound
- Peripheral tissue edema & induration must be palpated around the wound
  - Palpate surrounding tissues starting with healthy, normal tissue and working your way in towards the wound
  - Determine the type of edema (pitting versus non-pitting)
  - Judge how far from the wound the process extends (less than or greater than 4cm?)

Surrounding skin color

- Bright red and/or blanches to touch
- Dark red, purple and/or non-blanchable
- Pink or normal for ethnic group

Granulation Tissue

- Observe color
- Determine percent of wound filled with new growth
  - Bright beefy red, <75% - >25% filled
Epithelialization

- Observe for new growth at wound edge
- Measure extent of new growth into wound or judge how much of wound is re-surfaced with new skin
- 50% to <75% covered, epithelial tissue extends 0.5 cm into wound

*Granulation: bright beefy red >75% filled

Total Score

- Add 13 item scores to obtain total score
- Plot total score on continuum to see progress

Pain Assessment

- Pain
  - Procedural—Dressing changes & debridement
  - Non-procedural pain—Living with wound
- Pressure Ulcer Pain Detection tool
  - Do you have pressure ulcer pain now?
  - Does pressure ulcer pain keep you from doing the things/activities you enjoy?
  - Does pressure ulcer pain keep you from sleeping?
  - Do you have pressure ulcer pain every day?
Most recent data on pressure ulcer pain used for comparison...

- Patients from hospitals, nursing homes, outpatient clinics with stage II, III, & IV pressure ulcers, post-op tissue flap for stage III/IV, diabetic ulcers
- McGill Pain questionnaire & NRS (0-100)
- 35% of stage III/IV reported pain
- 17% of stage II
- Mean NRS
  - Stage III/IV: 54.2
  - Stage II: 47.5

Implementation Process Strategies

- General education sessions (NOT effective)
  - RATHER: Target unit by unit using peer leaders
    
    Education does not change behavior

- General reminders (NOT effective)
  - RATHER: Targeted feedback showing you listen to what they say and are consistently refining the program, removing barriers

Outcomes are expected by specific time points

- All ulcers heal faster first 3 months
- Stage II 5.2 times more likely to heal in 6 months than stage III/IV ulcers
- Stage III/IV improve slower than Stage II ulcers
- In 60 Days:
  - 75% stage II heal
  - < 20% stage III/IV heal
  - Best reported healing rate: 59% at 6 months of treatment
  - What percent of your stage II PU patients have healed in 60 days?
7. Institute multi-disciplinary PU team

8 KEY ACTIONS FOR PRESSURE ULCER IMPROVEMENT

Communication essential to success

- Include key stakeholders:
  - physician
  - wound nurse
  - treatment nurse
  - Dietician
  - physical therapy
  - nurse aide
  - Supervisor
  - administrator
- Weekly wound care rounds
- Hand-offs & Transitions are key!

Have you turned me to check my skin???