Pressure Ulcer Statistics

Pressure ulcers (PUs) increase the risk of patient mortality, extend patient hospital stay, and result in excess costs of care and litigation. In 2009, overall PU prevalence in the United States ranged between 11.8% in long-term care to 29.3% in long-term acute care. Facility-acquired prevalence was approximately 5.0%. A cost-analysis on Medicare patients between 2005 and 2007 revealed excess expenditures of $2.4 billion related to PUs.

Pressure Ulcer Prevention

Effective PU prevention and treatment requires multiple efforts in the clinical environment to address external contributing factors. Pressure, moisture, shear forces, and friction contribute to PU development and impede PU healing. The joint European Pressure Ulcer Advisory Panel (EPUAP) and National Pressure Ulcer Advisory Panel (NPUAP) guidelines in 2009 provide extensive guidance on PU prevention and treatment. The importance of appropriate patient repositioning and control of skin microclimate (local tissue temperature and moisture) are discussed. The EPUAP/NPUAP recommendations include (but are not limited to) the following:

- Repositioning of the patient should relieve or redistribute pressure.
- The patient should be positioned off of a PU whenever possible.
- The patient’s skin should not be subjected to pressure and shear forces.
- Repositioning should be undertaken using the 30° tilted side-lying or prone position.
- Transfer aids should be used to reduce friction and shear. Patients should be lifted – not dragged – during repositioning.
- For existing PUs, the support surface should improve pressure redistribution, shear reduction, and microclimate (local tissue temperature and moisture) control.

Prevalon® Turn and Position System

A new device, the Prevalon® Turn and Position System, has been developed to assist nurses with patient repositioning, sacral off-loading, and skin microclimate control within a facility’s established turning and PU prevention protocol. The system includes:

1) One Low-Friction Glide Sheet with grip surface and integrated handles to reduce the effort needed to turn patients and a built-in Anti-Shear Strap to prevent patients from sliding in bed
2) disposable Microclimate Body Pads to control heat and assist with moisture control, and
3) two 30° Body Wedges to facilitate turning and positioning of patients at the recommended 30° angle.
Case History

**Patient description:** An elderly female was admitted to the hospital in the fall of 2010 with ischemic bowel. Her Braden score was 18.

**Comorbidities:** Atrial fibrillation, coronary artery disease, anxiety and depression

**Support surface on admission to hospital:** Pressure redistribution mattress

**Skin status on admission to hospital:** Stage 1 coccyx PU

**Continent status:** Continent on admission; liquid diarrhea started on day 4 of the hospital stay

**Surgery:** Left hemicolectomy and right lower quadrant colostomy performed on day 6

**Transferred to critical care unit (CCU) post-operatively:** on day 6 with a Braden of 13-14

**Skin status on admission to CCU:** Stage II coccyx PU

**Support surface on admission to critical care:** Low air-loss mattress

**Prevalon® Turn and Position System initiated:** Day 6

**PU therapy in CCU:** Clear acrylic absorbent dressing, changed every 3-5 days

**Duration of Turn and Position System use:** 20 days

**Length of stay:** Day 20 with Turn and Position System

**Discharged to extended care facility:** Day 20 with Turn and Position System

**Surgical unit:** Post-surgical unit from Day 9

**Initial wound care consultation:** Day 8

**Skin status on admission to hospital:** Pressure redistribution mattress with turn and Position System in use.

**Support surface on admission to post-surgical unit from CCU:** Low air-loss mattress

**Initial wound care consultation:** Day 8

**Transfer to post-surgical unit from CCR:** Day 9

**Support surface on admission to post-surgical unit:** Pressure redistribution mattress with turn and Position System

**Discharged to extended care facility:** Day 20 with Turn and Position System

**Length of stay:** 20 days

**Duration of Turn and Position System use:** 14 days

**Figure 1. Day 8- sacral stage 2, 6x1cm with areas of dark purple on left sacral, open stage 2, 1x1cm**

**Patient Satisfaction**

The patient indicated to the wound, ostomy and continence nurse that she felt the Turn and Position System made turning easier, less cumbersome, less painful, and improved her experience with repositioning.

**Caregiver Satisfaction**

Nurses (N=6) reported the following benefits with the use of the Turn and Position System:

1. Repositioning was easier. Handles were easy to grasp and you could more easily handle the patient.
2. Nurses felt positively about compliance with as-needed repositioning and q2h repositioning because the experience was easier for the caregiver and less traumatic for the patient. Patient satisfaction empowered the nursing staff to comply with the facility’s repositioning protocol.
3. The nurses utilized less linen with the Turn and Position System, which allowed compliance with the evidence-based recommendation of the 3-layer rule. This also supported the facility initiative to decrease unnecessary linen use.

**Clinical Implications**

- The Turn and Position System allows caregivers to adhere to EPUAP/NPUAP evidence-based recommendations by avoiding pressure, friction, and shear forces during repositioning.
- Staff are more compliant with turning and repositioning because the practice is much easier, with less strain and injury risk for the nurse. Patients are more satisfied with less pain and less fear of being moved in the bed.
- Use of the Turn and Position System supported healing of the sacral area skin breakdown by facilitating compliance to our repositioning protocol, helping to avoid shear and friction forces on the skin, and controlling skin microclimate.

**Figure 2. Day 16-sacral/coccyx area - resolving: blanchable pink intact skin, 7x8 cm**

**Wound care protocol**

- **Patient received facility protocol wound therapy; patient was repositioned q2h and as needed in CCU. The Turn and Position System was used for patient repositioning on days 6 through 20.**
- **The Turn and Position System allowed nurses to adhere to “3-layer rule” (only 3 layers between the patient’s skin and the therapeutic surface) and did not interfere with the wound healing process. The Turn and Position System allowed them to adhere to repositioning requirements per facility protocol.**
- **A total of 1-2 Micromaxure Body Pads were utilized each day, dependent on the patient status (pads are changed with every incontinent or moisture/soiling episode).**

**References**