New Turning and Positioning System Facilitates Patient Repositioning to Aid in Pressure Ulcer Healing

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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 (LTAC). Facility-acquired PU incidence for long-term care was approximately 5.0%. A cost-analysis on Medicare patients between 2005 and 2007 revealed excess expenditures related to PUs of $2.4 billion. The financial implications of facility-acquired PUs are substantial, as there is no longer any reimbursement from the Centers for Medicare and Medicaid for care related to facility-acquired PUs.

A large number of patients treated in LTAC units are elderly, nutritionally compromised, immobile with multiple comorbidities, placing them at increased risk for PU development. Furthermore, patients who are terminally ill have a higher risk of PU development, and PU prevention and treatment efforts directed toward terminally-ill cancer patients are important to enhance patient quality of life and comfort of care.

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, as well as a built-in Anti-Shear Strap to prevent patients from sliding in bed,
2) disposable Microclimate Body Pads to control heat and the many “sources of moisture” on the skin, and
3) two 30° Body Wedges to facilitate turning and positioning of patients at the recommended 30° angle.

Pressure Ulcer Prevention

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

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

**Patient description:** The patient was a 91-year-old male with an admitting diagnosis of aspiration pneumonia and past medical history significant for prostate cancer with metastasis to the bone.

**Bradenton score on admission:** 15 (high risk secondary to activity, mobility, friction/sheer and nutritional status)

**Laboratories on admission:** Pre-albumin 17, albumin 3.1

**Skin status on admission to hospital:** The patient has a stage II sacral PU measuring 3 x1.5 x 0.1cm, 0% epithelial tissue, and mild incontinence-associated dermatitis (IAD) treated with moisture barrier with zinc oxide.

**Continence status:** The patient was incontinent of both urine and stool, with external male catheter on admission, and placement of Foley catheter during hospitalization.

**Admission to long-term acute care (LTAC):** The patient was admitted to the LTAC primarily for intravenous antibiotics and wound care. He was also treated by speech therapy, physical therapy, and occupational therapy.

**Pain on admission to LTAC:** The patient’s pain was assessed q2h on a scale of 0 to 10, with 0 being the absence of pain and 10 being severe pain. On admission, the patient complained of significant pain in his back, reporting pain levels of 8 to 9 with repositioning, and consistently requested p.r.n. pain medication. The patient required N Morphine for pain control 2-3 times daily initially.

**Pain medication regimen on admission to LTAC:** The patient had a physician order for Darvocet p.o. b.i.d. p.r.n. or morphine IV q8h p.r.n.

**Initial wound care consultation:** 10/17/2010

**Turn and Position System initiated:** 10/22/2010

**Wound care protocol**

The patient was treated for a stage II sacral PU which was present on admission. The wound care protocol consisted of:

- Skin care with Remedy™ products consisting of cleansing foam, Calazime™ moisture barrier cream, and moisturizing lotion.
- Wound cleansed with normal saline.
- Wound dressed with Meplix® border changed every 3 days and p.r.n.
- Patient placed on a low air loss support surface.
- Patient repositioned with Prevalon® Turn and Position System q2h and as needed.

**Figure 1. Stage II pressure ulcer noted on sacrum with mild IAD.**

**Figure 2. Resolution of IAD and improvement of stage II sacral PU noted.**

**Pain on discharge from LTAC:** After the Turn and Position System was initiated and utilized, the patient reported a pain level of 0 consistently for the last 5 days of his LTAC stay. The last dose of p.r.n. pain medication was given on 10/28/2010.

**Skin status on discharge:** At the time of discharge from the LTAC, the patient’s wound had 70% epithelial tissue and IAD had resolved.

**Length of stay:** The patient’s length of stay at the LTAC was 19 days from 10/15/2010 to 11/02/2010.

**Caregiver Satisfaction**

The majority of caregivers stated:

1. They spent less time repositioning the patient with the Turn and Position System compared with time spent for usual repositioning without the system (3 of 4).
2. The Turn and Position System eased their usual physical efforts extended for patient repositioning (3 of 4).
3. They felt the design of the Turn and Position System helped maintain appropriate body mechanics with patient repositioning (3 of 4).
4. The Turn and Position System lessened the patient’s usual physical efforts extended for repositioning (3 of 4).
5. The Turn and Position System decreased patient pain associated with efforts of repositioning (3 of 4).
6. Use of the Turn and Position System helped them comply with a minimum of q2h and as needed patient repositioning (3 of 4).
7. The Turn and Position System prevented the patient from sliding down in bed (3 of 4).

**Clinical Implications**

- Reduction in pain during repositioning increases patient satisfaction.
- Increased patient tolerance of repositioning facilitates wound healing and wound prevention.
- Absorbent underpads facilitate resolution of IAD.
- Ease of use for caregivers increases compliance with patient repositioning.

**References**

2. Introduction to pressure ulcers: more initial than we thought! Adv Skin Wound Care.