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The Efforts of a Skin-Protection Task Force Significantly Decreases the Number of Hospital-Acquired Pressure Ulcers

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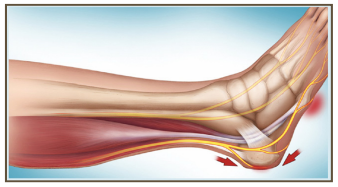
Background & Overview

Pressure ulcers (PUs) remain a critical health care issue, with reported incidence rates of 7% to 9%[1] and prevalence rates of 14% to 23.9% in acute care settings.[1,2] It appears that these rates are worsening:

- During the course of a 14-year study, the incidence of PUs as either a primary or secondary diagnosis increased from 34.5 to 71.6 per 100,000 acute care patients.[3]
- The Agency for Healthcare Research and Quality (AHRQ) reports that nearly 1 in 5 postacute care patients had PUs in 2003-2004.[4]

The sacrum and the heel are the most frequently reported sites affected by PUs. In a review of the literature, Whittington and Briones found that PUs occurred in the sacral area in 26% to 29% of patients and on the heel in 25% to 26% of patients.[1] In patients with spinal cord injuries or who have undergone surgery for hip fracture, PUs are more likely to occur in the sacral area, but are still very common on the heel, occurring in 17.4% of spinal cord patients and in 23% of hip surgery patients.[5,6]



PUs contribute to higher medical costs and an increased length of hospital stay. In a 2006 report from the Veteran's Health Administration, one facility reported hospitalization costs of $22,734 to $50,669 for patients hospitalized with PUs.[7] The cost for direct care has been reported to be $15,760 per PU.[8] In a recent observational study of 2,000 patients, the median excess length of stay attributable to PUs was 4.31 days.[9]

Most experts agree that the majority of hospital acquired PUs (HAPUs) can be avoided and are often viewed as quality-of-care indicators. Implementation of an effective PU prevention protocol can reduce the incidence of PUs.[10] Aspects of an effective prevention protocol include the following:

1. Frequent and systematic risk assessments
2. Frequent repositioning
3. Early implementation of pressure redistributing devices

Skin that is continuously wet increases the damaging effects of pressure, friction and shear.[11] The Institute for Healthcare Improvement (IHI)recommends incontinence management as one way to prevent pressure ulcers. IHI recommends cleansing at the time of soiling and at routine intervals with a pre-moistened, disposable wipe that cleans, moisturizes, and applies a skin protection barrier.[12]

Northwest Community Hospital is a 488-bed hospital offering a full range of medically advanced inpatient and outpatient services including the following:

- A center for specialty medicine
- Three treatment centers
- A day surgery center
- Home healthcare services
- An advanced imaging center

In March 2004 the Quality Assurance council identified HAPU prevalence to be above benchmark levels and sought an action plan. An acute care Wound, Ostomy, and Continence nurse specialist began working at the hospital in December of 2004. Using evidence-based practices focusing on prevention, we evaluated the effectiveness of new and improved methods of patient skin care:

- New bath product wipes and skin barrier cloths for incontinence care (7/05)
- A mandatory education project on the Braden scale (8/05)
- The introduction of advanced skin-care products (11/05)

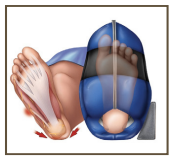
Purpose

To decrease the number of HAPUs by formulating hospital-wide skin care protocols using a standard set of skin-care products.

Methods

- In January of 2006, an interdisciplinary, cross-continuum Skin Protection Task Force (SPTF) was formed to develop, implement, and evaluate interventions to improve skin protection in Northwest Community Hospital.
- The team reviewed surface and skin-care products and updated skin-care protocols in February 2006 to incorporate evidence-based practices. A nursing education plan and updated patient assessment guidelines were implemented from March to June 2006. Resource binders were placed on units.
- A "Skintastics" team of representatives from each adult unit served as a resource for skin-care excellence and participated in quarterly PU prevalence studies.
- Advanced skin-care products, pressure reducing heel protectors, incontinence barrier cloths, pressure redistribution surfaces, and a fecal management system were introduced. Mattress covers and worn-out foam inserts were replaced.

- Intervention strategies for PUs included the use of specialty surfaces as needed, the positioning of patients to minimize or avoid pressure on all wounds, the correction of nutritional deficiencies, and the initiation of wound care per recommended guidelines. The use of pressure-relieving heel protector boots to prevent or treat heel ulcers was initiated in January 2006.



Results

Decreased prevalence of HAPUs

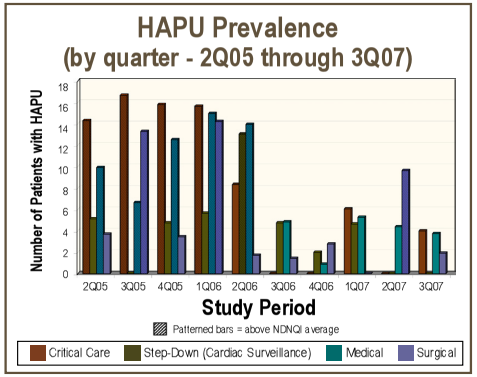
- The new skin-injury prevention protocols implemented during quarters 1 and 2 of 2006 (which included the efforts of the SPTF, the protocol directions, and the skin protection products) decreased the prevalence of PUs in nearly all units.
- The first quarter of 2007 marked 4 consecutive quarters of HAPU prevalence rates below benchmark levels.
- The critical care unit showed the greatest decrease in HAPUs, from 15.6 to 2.6. Wound-care consults also decreased.

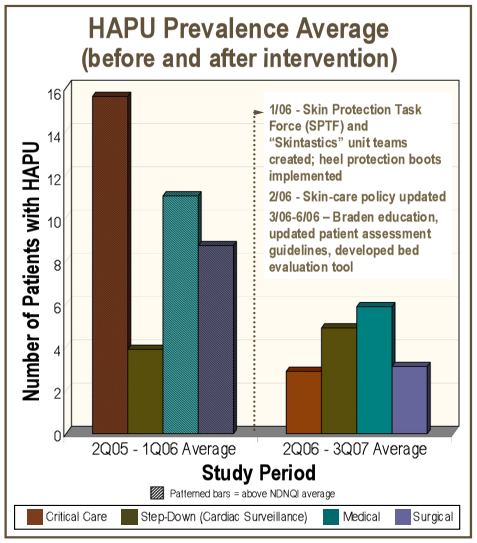
Average monthly compliance with the incontinence care protocol was high

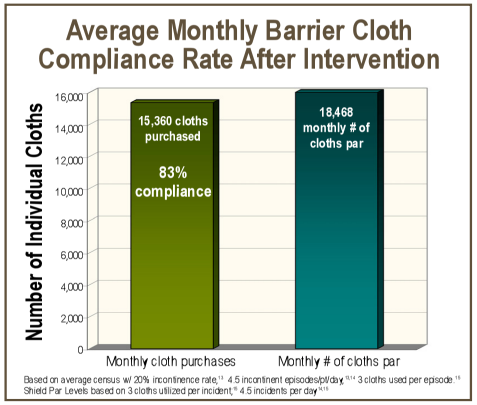
- Following implementation of the new improved skin-protection protocol, compliance with barrier application reached 83%.

Reduction in PU treatment cost

- The estimated annual treatment cost for heel PUs before the implementation was $1.99 million. The estimated cost after use of the heel pressure-relieving boots was $88,000 – an annual cost saving of $1,900,111.







Based on average census w/ 20% incontinence rate,[11] 4.5 incontinent episodes/pt/day,[10,14] 3 cloths used per episode.[15] Shield Par Levels based on 3 cloths utilized per incident,[15] 4.5 incidents per day[10,14]

Conclusions

New standardized skin-care protocols for the prevention of skin injury and HAPUs, coupled with new product technology and the efforts of the SPTF, increased staff compliance and reduced the prevalence of PUs.

Implications for Clinical Practice

The findings of this study demonstrate the effectiveness of the SPTF in improving methods of skin care and implementing new products:

- **Adaptation of clinical pathways over time is essential for positive patient outcomes.**

  New standardized skin-care protocols, the preventive use of the pressure-relieving heel protector boot and compliance with barrier application significantly reduced the incidence of HAPUs.

- **Significant annual cost savings**

  The use of the heel protector boot to prevent HAPUs resulted in an approximate savings of $1,900,111.

  Prevention of pressure injuries is critical because the Centers for Medicare & Medicaid Services has imposed strict rules concerning nonpayment for HAPUs.

- **Improves patient outcomes**

  The SPTF was successful in identifying care inconsistencies, developing a nursing education plan, and implementing evidence-based practice strategies that resulted in improved patient outcomes.

References

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1 Whittington KT, Briones R. National prevalence and incidence study: 6-year sequential acute care data. *Adv Skin Wound Care.* 2004;17:490-494.

2 Gunningberg L, Stotts NA. Tracking quality over time: what do pressure ulcer data show? *Int J Qual Health Care.* 2008 Apr 6 [Epub ahead of print].

3 Scott JR, Gibran NS, Engrav LH, et al. Incidence and characteristics of hospitalized patients with pressure ulcers: State of Washington, 1987 to 2000. *Plast Reconstr Surg.* 2006;117:630-634.

4 Agency for Healthcare Research and Quality. National Healthcare Quality Report, 2005. Figure 2.31. Available at: http://www.ahrq.gov/qual/nhqr05/fullreport/Index.htm#Contents. Accessed April 9, 2008.

5 Södergvist A, Ponzer S, Tidermark J. Cognitivie function and pressure ulcers in hip facture patients. *Scand J Caring Sci.* 2007;21:79-83.

6 Nogueira PC, Caliri MHL, Haas VJ. Profile of patients with spinal cord injuries and occurrence of pressure ulcer at a university hospital. *Rev Latino-Am Enfermagem.* 2006; 14:372-377.

7 VA Report No. 05-00295-109. Management of patients with pressure ulcers in Veterans Health Administration Facilities. VA Office of Inspector General. March 2006.

8 Kumar RH, Gupchup GV, Dodd MA, et al. Direct health care costs of 4 common skin ulcers in New Mexico Medicaid fee-for-service patients. *Adv Skin Wound Care.* 2004;17:143-149.

9 Graves N, Birrell F, Whitby M. Effect of pressure ulcers on length of hospital stay. *Infect Control Hosp Epidemiol.* 2005;26:293-297.

10 AHCPR Supported Clinical Practice Guidelines, Clinical Practice Guideline Number 3: Pressure Ulcers in Adults: prediction and prevention. AHCPR Pub. No. 92-0047; May 1992. Available at: http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat2.chapter.4409. Accessed on May 31, 2007. (No authors were available for this website.)

11 Grey JE, Harding KG, Enoch S. Pressure ulcers. *BMJ.* 2006; 332:472-475.

12 Institute for Healthcare Improvement. Getting Started Kit: Prevent Pressure Ulcers How-to-Guide. Institute for Healthcare Improvement 2007. Available at: www.ihi.org/IHI/Programs/Campaign. Accessed 5-15-08.

13 Junkin J, Selekof JL. Prevalence of incontinence and associated skin injury in the acute care inpatient. *J Wound Ostomy Continence Nurs.* 2007;34:260-269.

14 Bliss DZ, Zehrer C, Savik K, et al. An Economic evaluation of four skin damage prevention regimens in nursing home residents with incontinence. *J Wound Ostomy Continence Nurs.* 2007;34:143-152.

15 Nix D, Ermer-Seltun J. A review of perineal skin care protocols and skin barrier product use. *Ostomy Wound Manage.* 2004;50:59-67.

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