

The Use of a Heel Protector Reduces Facility-Acquired Heel Pressure Ulcers By 66%

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Overview

Objective of Intervention:

The North Florida/South Georgia Veterans Health System implemented a clinical intervention in an effort to determine whether early implementation of heel pressure-relieving devices would decrease the prevalence of facility-acquired heel pressure ulcers (FAHPUs) in acute care patients.

Inspiration Behind Intervention:

During an initial 5-month trial of using the Prevalon™ pressure-relieving heel device on all high-risk patients (Braden Scale score 12 or less) in extended-care units, the rate of FAHPUs dropped 93% (see Figure 1).

Background

Pressure Ulcers (PUs) & FAHPUs in Acute Care

- National incidence of PUs ranges from 7 to 9%,¹ and prevalence of PUs ranges from 14% to 17%.¹
- Approximately 30.3% of PUs are located on the heel.²
- Patients with PUs are at increased risk of death.³
- Septicemia is present in about 40% of patients with PU-associated deaths.⁴
- In March 2006, a VA report⁵ looked at 24 VHA facilities (240 patients with PUs) and found that the following were needed:
 - System-wide comprehensive PU prevention management and guidance
 - More consistent reporting, tracking, and cost analysis
 - Improved patient and staff education
 - One facility in the analysis reported a cost per patient PU of \$22,734 to \$50,669
- A June 2006 VHA handbook⁶ for assessment and prevention of PUs stressed the importance of preventing FAHPUs and reported an estimated cost for treatment of PUs of \$1.3 to \$3.6 billion annually in all hospitalized patients.
- Costs to treat PUs range in the literature from \$2,000 to \$30,000 and can be as high as \$70,000 for a complex full-thickness PU.⁷
- One of the goals in the 5 Million Lives Campaign, sponsored by the Institute for Healthcare Improvement (IHI), is prevention of hospital-acquired PUs. Minimization of pressure is listed as a key step in that effort.⁸
- Incorporating a FAHPU prevention protocol – combined with early, aggressive implementation of pressure-relieving devices and early identification of high-risk patient populations – has been proven to reduce the rate of FAHPUs.⁹

The Veterans Administration does not endorse products used in study for research purposes.

Intervention/Methods

A written protocol was established to identify at-risk patients based on a combination of low Braden Scale scores and comorbidities known to put the patient at greater risk of FAHPUs. These comorbidities included diabetes mellitus, cerebrovascular accident, peripheral vascular disease, low albumin, and hip fracture.

At risk (Score of 15-18)	Moderate risk (Score of 13-14)	High risk (Score of 12 or less)
<ul style="list-style-type: none"> ➢ Turn patient Q 2H. Use intact skin surfaces. Use 30 degree side-lying position. ➢ Limit HOB elevation to 30 degrees if not medically contraindicated. ➢ Assess heels daily for signs of pressure. ➢ Float heels w/pillows under calves or Prevalon boots (SPD). ➢ Place on Zone Air bed if available. ➢ Toilet Q 2H & PRN ➢ EUD-change QD & PRN ➢ Absorbent briefs, check Q 2H & PRN. Use Sage wipes and skin protectant. ➢ Inspect all skin surfaces daily, particularly bony prominences. ➢ Limit time in chair to 2H intervals, with frequent weight shifting. ➢ If wound present, complete skin/wound assessment template and initiate wound consult. ➢ Assess pain and medicate as needed. ➢ Teach patient/family prevention/treatment of PUs. 	<ul style="list-style-type: none"> ➢ Turn patient Q 2H. Use intact skin surfaces. Use 30 degree side-lying position. ➢ Limit HOB elevation to 30 degrees if not medically contraindicated. ➢ Assess heels daily for signs of pressure. ➢ Float heels w/pillows under calves or Prevalon boots (SPD). ➢ Place on Zone Air bed if available. ➢ Toilet Q 2H & PRN ➢ EUD-change QD & PRN ➢ Absorbent briefs, check Q 2H & PRN. Use Sage wipes and skin protectant. ➢ Inspect all skin surfaces daily, particularly bony prominences. ➢ Limit time in chair to 2H intervals, with frequent weight shifting. ➢ Initiate PT consult for pressure-reducing seating cushion. ➢ Assist with meals/provide snacks. ➢ Initiate nutritional consult. ➢ If wound present, complete skin/wound assessment template and initiate wound consult. ➢ Assess pain and medicate as needed. ➢ Teach patient/family prevention/treatment of PUs. 	<ul style="list-style-type: none"> ➢ Turn patient Q 2H. Use intact skin surfaces. Use 30 degree side-lying position. ➢ Limit HOB elevation to 30 degrees if not medically contraindicated. ➢ Assess heels daily for signs of pressure. ➢ Float heels w/pillows under calves or Prevalon boots (SPD). ➢ Place on Zone Air bed if available. ➢ Toilet Q 2H & PRN ➢ EUD-change QD & PRN ➢ Attends diapers, check Q 2H & PRN. Use Sage wipes and skin protectant. ➢ Inspect all skin surfaces daily, particularly bony prominences. ➢ Limit time in chair to 2H intervals, with frequent weight shifting. ➢ Initiate PT consult for pressure-reducing seating cushion. ➢ Assist with meals/provide snacks. ➢ Initiate nutritional consult. ➢ If wound present, complete skin/wound assessment template and initiate wound consult. ➢ Assess pain and medicate as needed. ➢ Initiate wound consult for specialty bed. ➢ Teach patient/family prevention/treatment of PUs.

The Prevalon heel protector boot provides complete off-loading of the heels and reduces friction and shear against the heel. On the basis of the early positive results with its use in extended-care units, the wound-care team began using the pressure-relieving heel device on all high-risk patients in acute care units in January 2007. Pre- and post-intervention prevalence rates of facility-acquired PUs and FAHPUs were determined and compared.

Quarterly facility-acquired PU prevalence surveys measured the following:

- All extended-care facility-acquired PUs before and after intervention
- Extended-care FAHPUs before and after intervention
- All acute care facility-acquired PUs before and after intervention
- Acute care FAHPUs before and after intervention



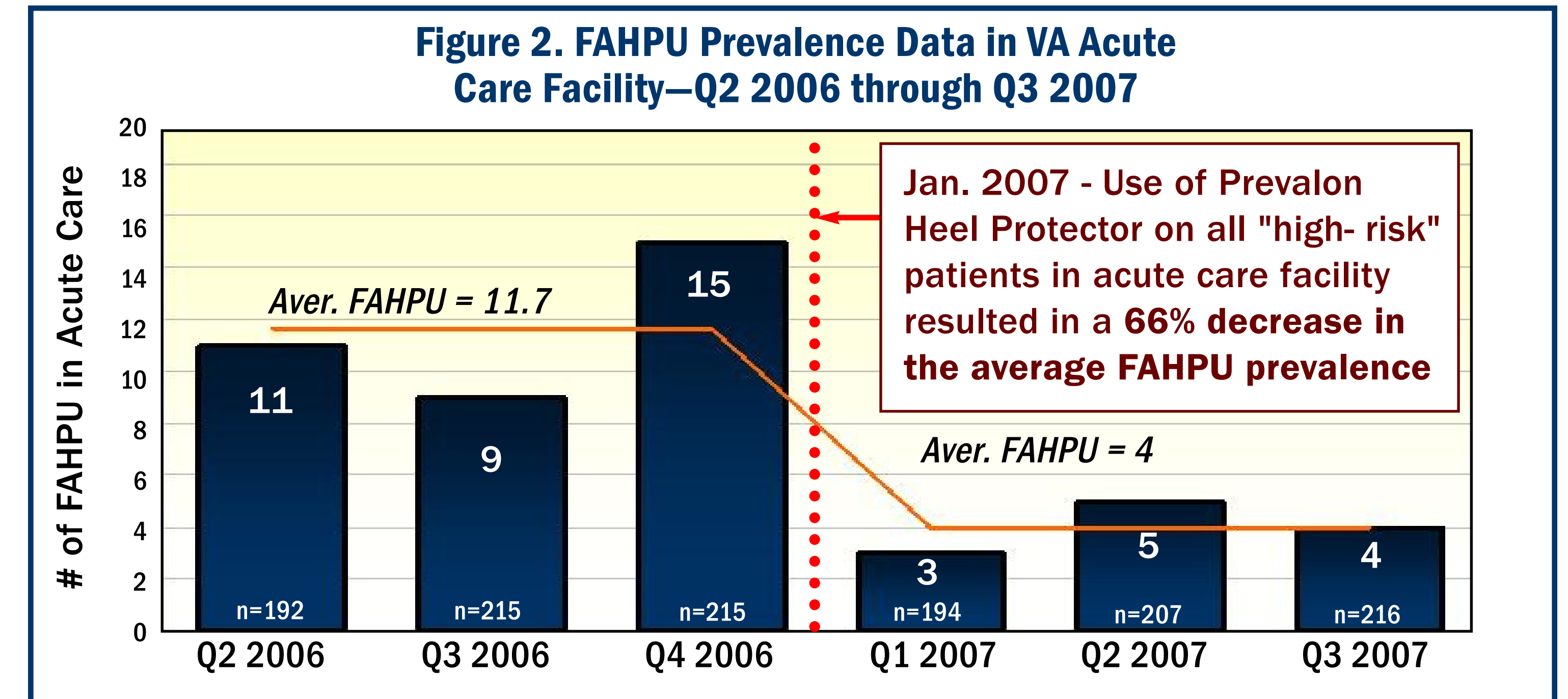
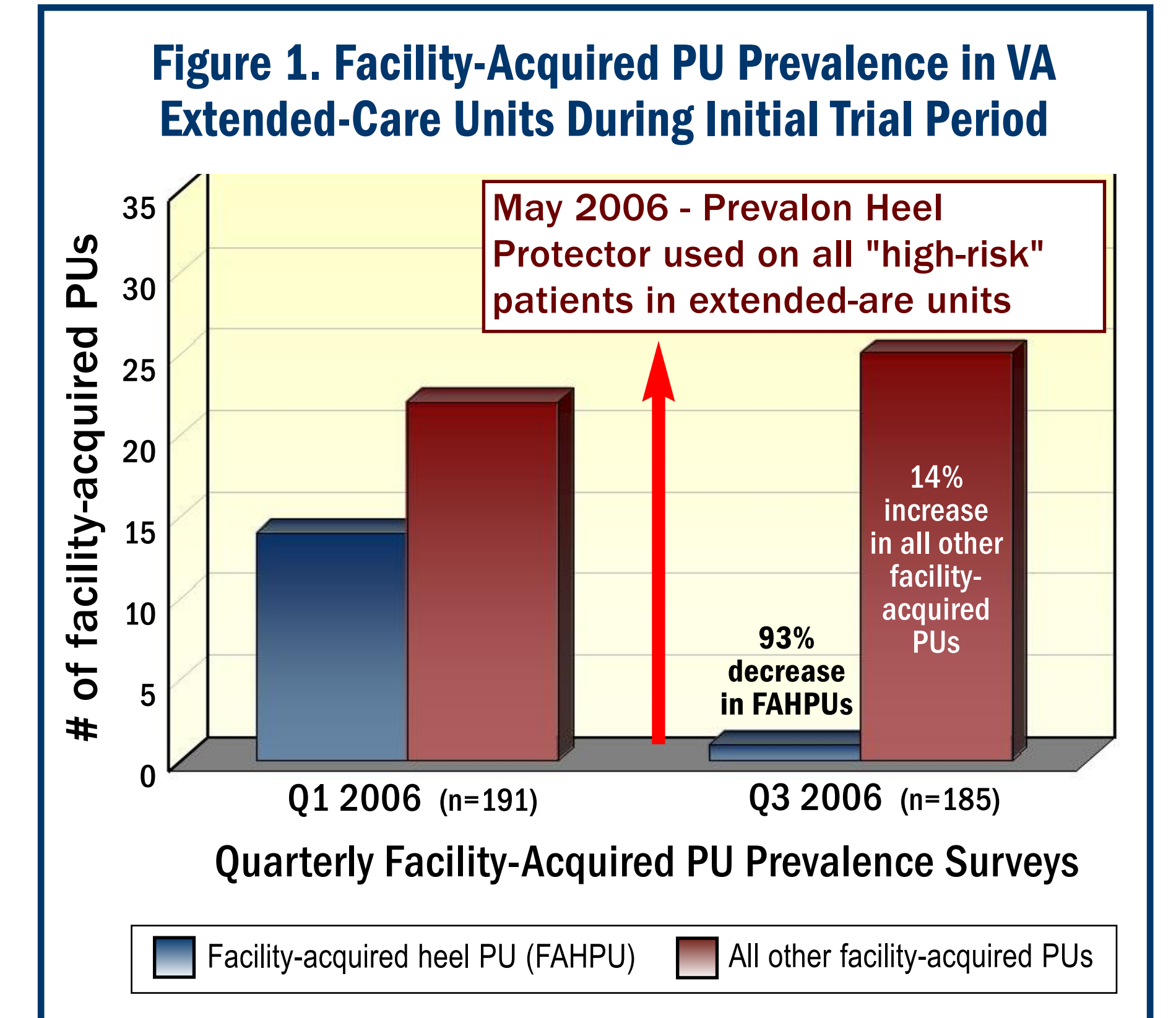
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Results

During the initial trial in the extended-care unit, the prevalence of FAHPUs decreased from 14 in Q1 2006 (before trial) to 1 in Q3 2006 (1 month after trial began)—a 93% decrease in FAHPUs. The prevalence of all other facility-acquired PUs increased by 14% (from 22 in Q1 2006 to 25 in Q3 2006).

On the basis of that success, the wound-care team began using the Prevalon pressure-relieving heel device on all high-risk patients in acute care units beginning in Q1 2007. The result was a 66% reduction in FAHPU, decreasing from an average prevalence rate of 12 FAHPUs in the 3 quarters before implementation to an average prevalence rate of 4 FAHPUs in the 3 quarters after implementation (see Figure 2). The prevalence of all other facility-acquired PUs increased.



Lessons Learned

Use of a pressure-relieving heel protector device early and consistently in all at-risk patients results in a reduction in FAHPUs.

- Given the success of this study, the North Florida/South Georgia Veterans Health System has started using the Prevalon pressure-relieving heel protector device on all at-risk patients system-wide. The decrease in FAHPUs resulted in significant cost savings.
- During the study period (3 months), the decrease in FAHPUs accounted for an estimated cost savings of between \$21,848 and \$302,400 (for 8 avoided FAHPUs).^{10,11}
- Establishing a written protocol to treat at-risk patients preventatively may help ensure consistent application of a heel protector. The protocol should identify at-risk patients based on a combination of low Braden Scale scores and comorbidities known to put the patient at greater risk of developing FAHPUs.
- The educational program that covered proper use of the heel protector device and identification of at-risk patients contributed to staff support of, and compliance with, the protocol.