

Evidence-based prevention: a study evaluating the efficacy of a uniquely delivered skin protectant on incontinent patients and the formation of sacral/buttock pressure ulcers

Kimberly Clever, RN, Gloria Smith, RN, Carol Bowser, RN, and Kurt Monroe, MA, PhD Candidate

1 problem

- Improvement needed in prevention of sacral/buttock pressure ulcers
- Multidisciplinary pressure ulcer prevention protocol emphasized skin protectant use for treatment only, not prevention
Use of barrier cream tubes for prevention was perceived as cost-prohibitive



- Process variation: inconsistent administration of skin protectant
Barrier almost never applied for treatment due to time constraints and inconvenience of barrier cream tubes

2 importance

- Pressure ulcers are seen as quality indicators (CMS, State Regulators and JCAHO)
- Increased patient discomfort
- Contribute to decline in patient's overall health
- 45% of all pressure ulcers form on the sacrum or ischium¹
- Average costs to treat pressure ulcers range from \$1,000 to \$10,000,² and can be as high as \$55,000 per ulcer³
- Fecal incontinence can increase the risk of developing pressure ulcers by 22 times⁴

3 action

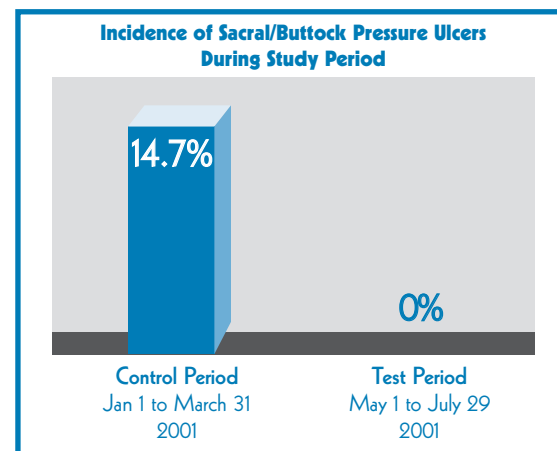
- Quality Improvement Team established to develop pressure ulcer reduction strategies
- Needed a new method of delivering skin protectant to help meet AHRQ Guidelines
- Implemented use of a skin protectant as a preventive measure for all incontinent patients, as part of a multidisciplinary pressure ulcer prevention strategy
- Assessed impact of skin protectant on incontinent patients by measuring rate of pressure ulcers in sacral/buttock area



- 1 Amlung S, Miller W, Bosley L, "The 1999 National Pressure Ulcer Prevalence Survey: A Benchmarking Approach," *Advances in Skin & Wound Care*, 14(6):297-301, 2001.
- 2 Xakellis G and Frantz R, "The Cost of Healing Pressure Ulcers Across Multiple Health Care Settings," *Advances in Wound Care*, 9(6):18-22, 1996.
- 3 Pompeo M, "The Role of 'Wound Burden' in Determining the Costs Associated with Wound Care," *Ostomy/Wound Management*, 47(3):65-71, 2001.
- 4 Maklebust J and Magnan M, "Risk Factors Associated with Having a Pressure Ulcer: A Secondary Data Analysis," *Advances in Wound Care*, 7(6):25-42, 1994.

4 results

- Reduced incidence of pressure ulcers in study from 14.7% to 0%



- Decreased process variation and improved compliance
- Met AHRQ Guidelines and facility protocol
- Simultaneous cleansing and application of skin protectant
- Increased patient satisfaction
- Increased nursing acceptance/satisfaction

Comfort Shield® Nursing Satisfaction Survey Results (Product Evaluation)

SURVEY ITEM	Strongly Agree	Agree	Disagree	Strongly Disagree
Comfort Shield was easy to use.	67%	22%	11%	
The Comfort Shield method saved considerable time vs. the current method.	38%	50%	12%	
The perineal skin was not irritated as a result of using Comfort Shield as existing irritations improved.	67%	33%		
I recommend Comfort Shield for incontinence care over current products.	63%	25%	12%	

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Abstract

Pressure ulcers are common adverse effects of healthcare, however, the appropriate management of risk factors can assist in their prevention. Measures that focus on the skin care of incontinent patients can impact the incidence of pressure ulcer formation over the sacrum and ischium, where a majority of ulcers form. However, little research evidence exists to support the AHRQ guidelines for the use of skin protectants to minimize the injurious effects of moisture due to incontinence. A 57-bed long-term

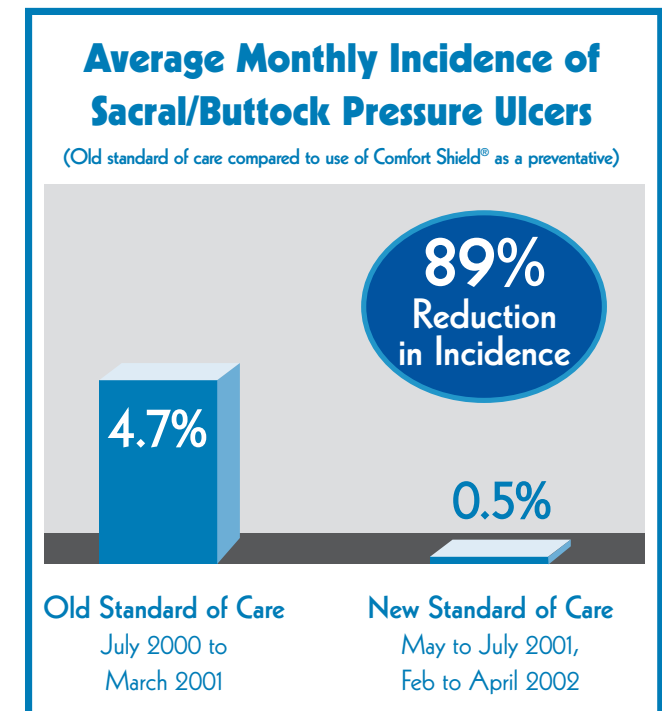
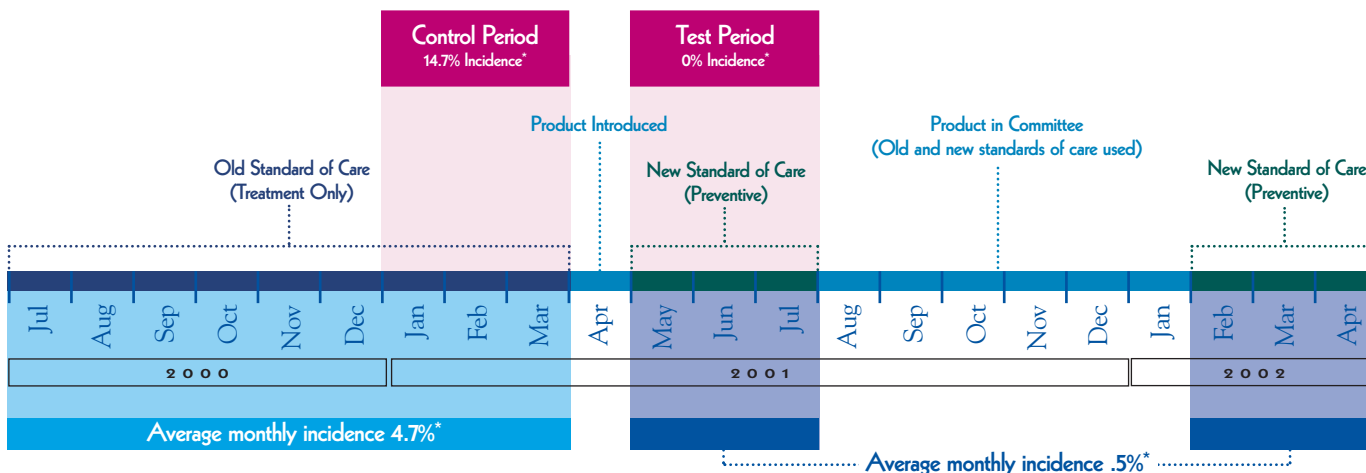
care (LTC) skilled nursing facility, attached to an acute care medical center, conducted a retrospective study to determine if the application of a uniquely delivered skin protectant (3% dimethicone) on incontinent patients decreased the incidence of nosocomial pressure ulcers in the sacral/buttock area, while controlling for other preventive measures and patient risk.

During the study period, none (0%) of the 30 patients treated with the uniquely delivered skin protectant developed pressure ulcers, while five (14.7%) of the 34 control patients developed pressure ulcers. This was a significant decrease

(McNemar's chi-square = 4.786, df = 1, Phi = -.273, p = .015) and it shows a significant association between consistent application of the skin protectant and not forming pressure ulcers. Analysis of average monthly incidence for sacral/buttock ulcers, over longer time frames, reveals an average monthly incidence of 4.7% for incontinent patients not treated with a protectant moisture barrier that drops by 89% to 0.5% when this skin protectant is applied. This study demonstrates that in the presence of a multidisciplinary pressure ulcer prevention program, the consistent use of a 3% dimethicone skin protectant can significantly reduce the incidence of nosocomial sacral/buttock pressure ulcers.

Study Timeline

This study demonstrated a 100% reduction in the incidence of sacral/buttock pressure ulcers. For a more practical representation of long-term implications, the average monthly incidence under the old standard of care was compared with the use of a skin protectant in a preventive manner. The figure to the right illustrates an 89% reduction. To define historical monthly incidence under the old standard, medical records were reviewed for all incontinent residents for a 9-month period. A six month period of data represents the new standard of care.



* Incidence of sacral/buttock pressure ulcers
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