



Skincare

Pressure Ulcer Prevention Program

Cano A, Anglade D, Stamp H, Joaquin F, Lopez JA, Lupe L, Schmidt SP, Young DL. Improving Outcomes by Implementing a Pressure Ulcer Prevention Program (PUPP): Going beyond the Basics. *Healthcare*. 2015; 3:574-585.

Abstract: <http://www.mdpi.com/2227-9032/3/3/574>

Purpose: A multidisciplinary process improvement program was initiated at the University of Miami Hospital (UMH) in 2009 to identify the prevalence of hospital-acquired pressure ulcers (HAPU) at the institution and to implement interventions, including the implementation of PUPP, now part of Skintegritty, to reduce the incidence of HAPU.

Conclusion: At UMH the HAPU rates were maintained below its targeted benchmark of 3.1% for 25 consecutive months in part because of the utilization of new skin care products and continuing re-education.

Young DL, Berry KM, Falconio-West M. A prevention initiative to decrease HAPUs at two acute care hospitals. *Nurs Manage*. 2015 Nov;46(11):33-8.

Preview: http://journals.lww.com/nursingmanagement/Citation/2015/11000/A_prevention_initiative_to_decrease_HAPUs_at_two.9.aspx

Purpose: At two acute care hospitals in the Phoenix, Ariz., metropolitan area, the purpose of this study was to reach the National Database of Nursing Quality Indicators® (NDNQI®) benchmark or less for HAPUs in 4 months by implementing a comprehensive PU prevention program.

Conclusion: For each hospital, there was a significantly lower prevalence of HAPUs when comparing postprogram (0% and 2.38%) with preprogram (38.2% and 14.89%) prevalence rates.

Cano A, Fortunata J, Lopez JA, Lupe L, Moss S, Stamp H. Implementation and Outcomes of a Pressure Ulcer Prevention Program (PUPP) at a 560-bed Academic Medical Center. Presented at the Wound, Ostomy and Continence Society's Conference; Nashville, TN; June 2014. (Ask your Medline representative for a copy of this poster, LIT581R)

Pressure ulcers (PU) affect 1 to 2.5 million people each year, with an estimated cost of \$11 billion. The cost of care is between \$500 and \$70,000 in the United States. Morbidity and mortality can be attributed to PUs, and data indicates that 60,000 people die each year from complications related to PUs. The purpose of the study was to implement and evaluate the effect of a comprehensive Pressure Ulcer Prevention Program (PUPP) at a large academic medical center. PUPP included online education with a pre-test and post-test, and outcome measures included PU prevalence surveys. The average pre- PUPP PU prevalence was 13.4%, and post-PUPP PU prevalence was 12.1%, giving approximately a 10% relative improvement. The pre PUPP hospital acquired PU(HAPU) averaged 4.8%, and the post PUPP HAPU rate was 2.8%, giving a 41.7% relative improvement. In clinical staff, there was a statistically significant increase in scores on the knowledge test from 74% to 88%. Savings on PU care was estimated to be between \$131,731.89 and \$470,060.17 per year. The study concluded



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that the program was successfully implemented and had the desired effect of HAPU reduction. In the 2.5 years since implementation, the reductions in HAPU have saved the academic medical center \$1.18 million in health care costs.

Young DL, Borris-Hale C, Falconio-West M, & Chakravarthy D. A Single Long-Term Acute Care Hospital Experience with a Pressure Ulcer Prevention Program. *Rehabilitation Nursing Journal*. 2014; 0: 1–11.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/25224816>

Purpose: The purpose of this study was to evaluate the Medline Pressure Ulcer (PU) program by comparing the pre-program PrU incidence data from 99 facilities and to post-program PrU incidence data.

Conclusion: The mean pre-program PrU incidence was 6.18 and the mean post program incidence was 2.82, yielding a statistically significant 54% improvement.

Bagnall SA. Improving Pressure Ulcer Prevention Programming at the Front Lines – Nursing Assistants Do Make a Difference. Presented at the Wound, Ostomy and Continence Society's Conference; Seattle, WA; June 2013. (Ask your Medline representative for a copy of this poster, LIT1065)

The purpose of the study was to enhance the skills of nursing assistants by providing consistent pressure ulcer prevention education and testing their skill improvements. After the implementation of the Medline Pressure Ulcer Prevention Program (PUPP), the education testing results for 94 participants increased from 79% to 89%, which showed a statistically significant difference ($p = 0.048$ for a two-tailed analysis and $p = 0.024$ for a one-tailed analysis). Though the baseline was fairly high, the study concludes that the staff is more invested than ever in pressure ulcer prevention.

Gerard M. The results of a comprehensive approach in reducing and keeping pressure ulcer incidences low in an acute care setting: The value of the use of the right products to help manage MASD. Presented at the Symposium on Advanced Wound Care, Spring; Orlando, FL; April 2014. (Ask your Medline representative for a copy of this poster, LIT354)

To reduce the incidence of Hospital Acquired Pressure Ulcers (HAPU), several changes were instituted in an acute care setting. Since January 2013, changes include education of the nursing staff on issues that impact HAPU incidence, an insistence on the use of proper diagnostic techniques, and the use of appropriate wound and skin care products, notably the use of a new skin protectant formulated with micronutritional ingredients and white petrolatum as the active ingredient (Remedy Clear-Aid Skin Protectant, Remedy Foaming Body Cleanser) to protect, cleanse and relieve skin from Moisture Associated Skin Damage (MASD). MASD prevention was measured by the presence/absence of incontinence associated dermatitis (IAD)/Intertriginous dermatitis (ITD). During the previous regime when tight controls and the use of the appropriate skin protectant were not in place, the number of ulcers per 1000 patient days was 0.44 in the months. Following the changes, the number of ulcers per 1000 patient days reduced to 0.26. MASD rates decreased from 0.53 to 0.33 per 1000 patient days. These results have meaningful financial impact. The use of the micronutrition containing barrier ointment made a notable impression and it appears that both MASD as measured by IAD/ITD incidence measurement, and HAPU rates, were consistently low during the period of monitoring.



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Brown TL, & Kitterman J. Developing a cost-effective pressure-ulcer prevention program in an acute-care setting: This successful program reduced pressure ulcers and saved money. *Wound Care Advisor*. 2013; 2(5): 31.

Open access; full article publically available online: http://woundcareadvisor.com/wp-content/uploads/2013/09/DEVELOPING_S-O13.pdf

Purpose: The purpose of the study was to determine if the pressure ulcer prevention program (mPUPP) reduced pressure ulcers (PrU) through nurse education, product optimization, integration of best practices for all nurses, and measurement of clinical and economic outcomes.

Conclusion: The mPUPP was effective in reducing PrU incidence in participating hospitals, which may result from a combination of program features such as individualized assessment of facility needs, caregiver education, and the use of specific skin and wound care product

Remedy Olivamine

Hunter SM, Langemo D, Thompson P, Hanson D, Anderson J, Oh IE, Paulson R, Rustvang D, Dorman S, Roth DL. Observations of Periwound Skin Protection in Venous Ulcers: A Comparison of Treatments. *Advances in Skin & Wound Care*. 2013; 26:62Y66.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/23337645>

Purpose: The objective of this study was to examine the effectiveness of Remedy Nutrashield and Cavilon Moisturizing Lotion on venous ulcer periwound skin.

Conclusion: For periwound size, the decrease for the group using Cavilon was significantly greater than the attenuated decrease for the retrospective cases, and the decrease for the Remedy group was also significantly different from zero. For the ulcer size model, the estimated rates of change were -0.272 cm/d and -0.130 cm/d for the experimental and retrospective groups, but there was no significant difference between prospective and retrospective cases in the rates of reduction in ulcer size.

Remedy Phytoplex

Cabot S, Young DL, Debashish C. A Single-Center Evaluation of a Dermal Management Product Suite to Prevent Pressure Ulcers and Skin Tears. Presented at the Symposium on Advanced Wound Care, Fall; Las Vegas, NV; September 2015. (Ask your Medline representative for a copy of this poster, LIT071WC)

The purpose of this study was to measure the impact on hospital acquired pressure ulcers (HAPU) and skin tears of a new skin care regimen, which included Remedy Phytoplex Hydrating Cleansing Gel, Remedy Phytoplex Nourishing Skin Cream & HydraGuard Skin Cream, Remedy Phytoplex Z-Guard Skin Protectant Paste, FitRight Plus and Marathon, in a skilled nursing facility. During this 5-month retrospective and 3-month prospective study, all reported HAPU and skin tear occurrences were recorded. There was a statistically significant reduction in the monthly mean HAPUs, pre-product HAPUs mean=12.2, SD=5.78 to post-product HAPUs mean=4.7, SD=0.58, $p=0.04$. This represents a 61.7% reduction in HAPUs following the newly implemented skin care regimen. Though there was no statistically significant difference in the monthly mean



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skin tears, pre-product skin tears mean=2.4, SD=1.67 to post-product mean=2.0, SD=1.00, there was a 16.7% reduction in skin tears following the newly implemented skin care regimen. Overall, the use of the new skin care regimen resulted in a reduction of HAPU and skin tear occurrences.

Curran D, Young DL, Chakravarthy D. Standardization of Skin Care Products for OhioHealth. Presented at the Symposium on Advanced Wound Care, Fall; Las Vegas, NV; October 2014. (Ask your Medline representative for a copy of this poster, LIT019WC)

In acute care hospitals, skin care products facilitate prevention of skin infections and breakdown such as dermatitis and pressure ulcers, but a lack of unified and comprehensive product lines led to inconsistent use of products such as cleansers and moisturizers. The purpose of the study was to identify products and their cost used for skin care (cleansers, moisturizers, protectants) in the OhioHealth System. Two products lines, Product Line A (Remedy Phytoplex) and Product Line B (Coloplast skin care products), were trialed. Product Line A's educational materials were clearer than Product Line B's materials. Health care providers were more satisfied with Product Line A with regards to ease of removal, moisturization, odor control, and cleansing ability, and less satisfied, not significantly, with regards to application ease, barrier protection and patient reaction. Product Line A was chosen as the new product line for skin care in the OhioHealth system.

Gabriel O. The use of a silicone blend skincare product in the management of an inpatient population with venous ulcers. Presented at the Symposium on Advanced Wound Care, Fall; Las Vegas, NV; October 2014. (Ask your Medline representative for a copy of this poster, LIT018WC)

Providing a smooth, breathable film that moisturizes and nourishes the periwound area can help with skin health. The purpose of the study was to evaluate a silicone blend skincare product (Remedy Phytoplex Hydraguard) designed to provide nutritional elements and a moisturizing film to the skin surface around venous ulcers in 30 inpatients over the course of a month. Skin problems resolved in 23 venous etiology patients after an average of 3.09 days and partially resolved in 7 venous etiology patients after an average of 4.43 days while using the silicone blend skincare product.

Livingston M, Chakravarthy D. The Use of a Hypoallergenic Moisturizing and Protective Lotion in the Management of Acute Eczema in Patients with Venous Leg Ulcers. A version of this was presented at the Symposium on Advanced Wound Care, Spring; Orlando, FL; April 2014. (Ask your Medline representative for a copy of this poster, LIT350R)

Lotions that can provide a barrier to help reduce the transepidermal water loss are used to moisturize the dry skin of patients with venous leg ulcers. The purpose of this 7 patient case series was to evaluate a skin protectant containing botanical micronutrients and white petrolatum designed to moisturize and protect the skin, providing relief to symptoms associated with acute eczema in patients with venous hypertension, under a 4 layer compression wrap. The average treatment duration was 15.4 days, with an average time of resolution of erythema of 13.6 days. The erythema resolved in less than 15 days for 5 of the 7 patients, and for 3 patients, their erythema resolved by day 8. The mean wound size at start of treatment was 40.9 cm² with a mean overall reduction of 52.4%.



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Young, D., & Chakravarthy, D. A controlled laboratory comparison of 4 topical skin creams moisturizing capability on human subjects. *Journal of Wound, Ostomy, and Continence Nursing: Official Publication of The Wound, Ostomy and Continence Nurses Society / WOCN.* 2014; 41(2): 168-74.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/24595179>

Purpose: This study compares human skin capacitance (moisture) readings after the application of 4 different, commercially available, topical skin creams.

Conclusion: In this study, sites tested with Remedy Phytoplex Hydrating Cleansing Gel Shampoo and Body and Nourishing Skin Cream had a greater skin capacitance reading than the other tested products. Sooth and Cool Fresh Shampoo and Body Wash combined with Soothe and Cool Skin Cream had similar capacitance readings to Aloe Vesta 2 n 1 Body Wash and Shampoo combined with Aloe Vesta Skin Conditioner.

Livingston M, Falconio-West M. The use of a topical hypoallergenic skin protectant in the management of acute eczema in patients with venous leg ulcers. Presented at the Clinical Symposium on Advances in Skin & Wound Care; Orlando, FL; October 2013. (Ask your Medline representative for a copy of this poster, LIT919)

Acute eczema, associated with venous hypertension, can be exacerbated by using ointments formulated with potential irritants. The aim of the study was to evaluate the use of topical hypoallergenic skin protective ointments (Remedy Phytoplex) in the skin care management of patients with venous ulcers. In this four patient case study, the hypoallergenic protective ointment moisturized the skin of each patient with various etiologies without causing redness, itching, burning, or excoriation.

Chaiken N. The Use of a Micronutrient Containing Moisturizing Lotion to Promote Skin Health in Patient Undergoing Radiation Treatment for Breast Cancer. Presented at the Clinical Symposium on Advances in Skin & Wound Care; Orlando, FL; October 2013. (Ask your Medline representative for a copy of this poster, LIT1054)

The purpose of the study was to evaluate the use of a micronutrient based skin care product (Remedy Phytoplex Nourishing Skin Cream) in moisturizing the skin of five breast cancer patients. The main measurement was whether radiation treatment was interrupted due to radiation dermatitis. In the third quarter of 2012, there were 5 interruptions of radiation therapy due to skin conditions in a population of 10 patients. After the initiation of the micronutrient based skin care product, during the month of January 2013, none of the patients had their treatment interrupted due to radiation dermatitis. Since April 2013, there has not been a case of radiation dermatitis requiring radiation treatment interruption. The study concludes that the cost is not high, and the product is being used on all radiation oncology patients.

Lo AE, Walker R, Chakravarthy D. The Use of a Micronutrient Containing Skin Care Regimen in Managing Periwound Skin Condition seen in a Wound Center Population. Presented at the Symposium on Advanced Wound Care, Spring; Denver, CO; May 2013. (Ask your Medline representative for a copy of this poster, LIT1053)

The purpose of the study was to evaluate a new cleanser (Remedy with Phytoplex Hydrating Spray Cleanser)



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and skin protectant barrier (Remedy Z-GUARD Skin Protectant Paste). The skin condition of 12 patients was assessed after management with the cleansing spray followed by a skin protectant paste and compression treatment. The patients had periwound skin in poor health. The results demonstrate that in each patient, skin improvement occurred in the first week.

Remedy Basics

Chakravarthy D, Roman M. A Moisturizing Capability Comparison Between Two Commercially Available Products. Presented at the Clinical Symposium on Advances in Skin & Wound Care and the Symposium on Advanced Wound Care, Fall. New Orleans, LA & Las Vegas, NV. September 2015. (Ask your Medline representative for a copy of this poster, LIT068WC)

This study compares skin hydration levels in human skin after applications of Remedy Basics Moisturizing Body Lotion or Aloe Vesta® Skin Conditioner that were used with complementary skin care product line cleansers. The skin of 21 subjects was conditioned and marked with 3 test sites randomized for moisturizing Product 1 or 2 and a control area, which did not receive any intervention. Each moisturizing product was applied following the use of a cleanser from the same product line. The skin areas subject to the study were tested for initial moisture content, cleansed with a cleanser, dried, tested again for moisture content, subjected to complementary product line moisturizer application, and finally tested again for moisture content. The mean change in capacitance was 10.9 ± 7.5 for Remedy Basics Moisturizing Body Lotion, 7.5 ± 4.3 for Aloe Vesta Skin Conditioner, and -1.4 for the control site. Remedy Basics Moisturizing Body Lotion significantly increased skin moisture compared to Aloe Vesta and the control.

Kushner M, Schlesinger R, Roman M, Chakravarthy D. Comparative Assessment of Skin protectant barrier Performance using an in vitro Test Methodology. Presented at the Clinical Symposium on Advances in Skin & Wound Care; Las Vegas, NV; September 2014. (Ask your Medline representative for a copy of this poster, LIT005WC)

Prolonged exposure to caustic fluids such as urine, stool, perspiration, and wound exudate can cause the surface of the skin to become over-hydrated and macerated, and thus more susceptible to breakdown. A randomized, controlled study compared and quantified barrier performance of various commercially available skin protectants under controlled conditions that reflect the conventional application and removal of skin protectant in real life settings. A series of circles were tattooed on swine skin flaps, and the skin barrier was applied on top except to the control site. Then, foam with dye was compressed on these sites. The circles were then photographed and quantified for mean gray value (MGV) to compare the permeability of competing skin protectant products. The control group presented an MGV of 18.32 ± 3.7 . Product A (Remedy® Basics Protective Barrier Ointment) had a MGV of 80.01 ± 15.7 which was significantly greater than Product B (Aloe Vesta® Protective Ointment), C (Periguard® Skin Protectant Ointment), D (Sensicare® Protective Barrier Cream), E (Baza Protect Cream), and F (3M Cavilon™ Durable Barrier Cream) (33.36 ± 12.6 , 44.07 ± 20.1 , 36.41 ± 14.5 , 22.88 ± 6.3 , 37.73 ± 11.7 , respectively ANOVA $p < 0.0001$). However, Product E was not significantly different from the control (ANOVA $p = 0.0978$). Overall, Product A demonstrated significantly greater occlusive properties than all other competitive products, and since no significant difference was seen between Product E and the control, it may indicate a lack of protective properties.



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These publications were presented at various wound care conferences to share research and clinical results within a scientific community. The information is intended for healthcare professionals in the US only. It is provided for informational purposes and is not intended to replace a discussion with a healthcare provider. All decisions regarding patient care must be made with a healthcare provider and consider the unique characteristics of each patient.

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