White Paper

Fusion Patient Care Underpad - The Future of Skin

Janice Carter Larson, BA, CLLM
Angelynn O'Connor, RN, BS, CLLM

Abstract

Major advances in reusable and disposable underpad technology have resulted in the development of new products that have superior abilities to manage incontinence while providing a more favorable microclimate for patient skin. This paper will explore the specific clinical advantages of a reusable underpad that incorporates a new laminating technology which eliminates the need for quilting. The result is an underpad with a smooth, soft facing and enhanced wicking capability, that delivers a safe and comfortable patient experience.

Introduction

An estimated 7% of all patients are at risk of developing pressure ulcers over the course of their hospital stay. The National Pressure Ulcer Advisory Panel (NPUAP) defines a pressure ulcer as a localized injury to the skin and/or underlying tissue pressure, or pressure in combination with shear, which interrupt blood flow to the skin and can lead to discoloration, loss of sensation, scarring, skin loss and tissue damage. The most serious pressure ulcers, categorized as Stage III and Stage IV, are on the list of Hospital Acquired Conditions, (HAC) for which the cost of care is not reimbursed to a hospital by the Centers for Medicare and Medicaid Services (CMS) if not present upon admission.

Pressure Ulcer Prevalence

Pressure ulcers are a potential complication of prolonged bed rest, particularly for the elderly, immobile and incontinent patients, who may be especially prone to skin breakdown if moisture is not appropriately managed. Skin breakdown occurs most often on the sacrum, perineum, coccyx (buttocks) and heels. Patients with fecal incontinence are 22 times more likely to develop pressure ulcers. Pressure ulcers increase hospital costs significantly. In the US, pressure ulcer care is estimated to approach $11 billion (USD) annually, with a cost of between $500 (USD) and $70,000 (USD) per individual pressure ulcer. According to Michelle Beaver, CMS reported over 250,000 cases of Stage III and IV pressure ulcers that developed after admission and resulted in additional treatment costs of $43,000 per hospital stay.

The Role of Linen Products

Linen products play a key role in the prevention of pressure ulcers and it is important that clinicians minimize exposure of the patient's skin to moisture by assessing and treating incontinence at the time of occurrence. Using an underpad with good wicking and absorption capabilities is essential since prolonged exposure to wetness can macerate the skin. Since moist skin is five times as likely to become ulcerated as dry skin, it is essential to maintain the driest possible surface under the patient.

New Technology

With increased awareness of the need to prevent pressure ulcers, healthcare product manufacturers have made many technological improvements in both reusable and disposable underpads. Most reusable underpads feature quilting to hold the facing, soaker and barrier layers together. However, there are some characteristics of quilting that can be detrimental to at risk patient skin. Quilting adds stitches and seams that can result in puckering and bunching between layers and create potential pressure points. The US Library of Medicine's patient information article on Preventing Patient Ulcers recommends that patients avoid seams that press on skin and anything that could bunch up or wrinkle, and that sheets and clothing should be dry and smooth, with no wrinkles.

The Fusion Reusable Patient Care Underpad was developed using soft, absorbent materials and a unique patented laminated construction technique that eliminates the need to quilt layers together, creating a smooth surface which helps maintain the position and shape of the underpad, providing a better microclimate for at risk patient skin.

Fusion's top facing layer is constructed of a 100% synthetic fabric that is soft against the skin and quickly wicks away moisture. The facing is laminated to the middle soaker layer, not quilted like typical reusable underpads, which facilitates the spread of moisture through the pad. The high capacity soaker continues to absorb fluid after an initial void. The bottom barrier layer, also laminated to the soaker, is made of impermeable brushed polyurethane which keeps the pad in place without bunching up under

the patient. Even shrinkage is attained with the combination of fabrics and fusing technology. The result is a reusable underpad with a very thin profile.

Proper Protocol

Each layer of linen on a hospital bed should be designed to promote skin integrity and patient comfort.

Superfluous layers are discouraged since they can render a pressure redistribution surface less effective, and create a source for added friction, pressure and maceration. Thin profile, unquilted underpads are designed to lie as flat as possible to minimize any potential pressure points and not affect the performance of pressure redistribution surfaces. Incontinent pads should also be large enough to ensure sufficient protection and Fusion's unique square shape can minimize confusion over placement direction.

Stay Dry Technology

Fusion's "Stay Dry" technology features distinct characteristics to promote skin care: rapid wicking, minimal liquid reflux (the counterpart to fluid retention) and high absorbency. Since wicking allows the moisture to spread through the pad and away from the body, rapid wicking translates into a shorter exposure of the skin to moisture. Liquid reflux, the weight of liquid that transfers from the soaker to the surface when pressure is applied (i.e. patient lying in bed) is in direct proportion to the fluid retention capacity of the soaker layer. In other words, the lower the volume of liquid reflux, the drier the skin. Lastly, absorbency is measured by both quantity of fluid and time needed for liquid to be absorbed. Many reusable underpads, it is important to note, can retain their absorption characteristics after one void. Disposable underpads that use absorbent polymers are often unable to absorb after an initial incontinent episode.

Environmental Considerations

Environmental concerns are also key. An article presented by Practice Greenhealth, explains that "America's hospitals generate 6,600 tons of waste each day. Hospitals that have chosen to use disposable products rather than reusables produce a substantially greater amount of solid and medical waste, costing them more in disposal costs." In fact, it is estimated that they dispose of more than 4 billion pounds of waste annually. As they care for patients, hospitals generate an average of 26 pounds of waste per staffed bed in the course of a day. Medical centers are the second-largest waste producers in the United States after the food industry. Hospitals bury and burn garbage composed of plastics, chemicals, paper, food, needles, packaging and electronics in an effort to dispose of this waste. However, amid rising concern about increasing waste removal fees, the mercury released from medical waste incinerators and pharmaceutical waste in drinking water, health systems are recognizing waste disposal can have a health impact on local communities.

Conclusion

Although patient care and patient satisfaction are top priorities, in this era of thorough product value analysis, hospitals must also balance financial and environmental concerns. Fusion's innovative unquilted technology provides a cost-effective, ecofriendly alternative to disposable incontinent underpads while providing superior patient safety and comfort.

References

The National Pressure Ulcer Advisory Panel. News Release: World Wide Pressure Ulcer Prevention Day 2015. September 18, 2015. Available at: http://www.npuap.org/world-wide-pressure-ulcer-prevention-day/

Beaver, Michelle, "CMS to Put Pressure on Providers for Decubitus Ulcer Prevention", Infection Control Today, 08/04/08

Centers for Medicare and Medicaid; http://www.cms.hhs.gov/HospitalAcqCond/06_Hospital-Aquired_asp

US National Library of Medicine; Preventing Pressure Ulcers; www.nlm.nih.gov/medlineplus/ency/patientinstructions/000147.htm

PracticeGreenhealth.org; Reusable vs. Disposable Textiles; http://cms.h2eonline.org/ee/waste-reduction/waste-minimization/textile/reusedispose/HospitalAcqCond/06_Hospital-quired_asp.

DiConsiglio J. Reprocessing SUDs reduces waste, costs. Materials Management in Health Care. 2008 Sep;17(9):40-2.

Johns Hopkins Medicine. News Release: Going Green in the Hospital. February 24, 2010. Available at: http://www.hopkinsmedicine.org/news/media/releases/Going_Green_In_The_Hospital

Healthier Hospitals Initiative. Less waste challenge. Available at: http://healthierhospitals.org/sites/default/files/IMCE/public_files/press_kit_pdf/hhi_less_waste_fact_sheet.pdf