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ABSTRACT—

Maintaining skin integrity and patient comfort are routine tasks for caregivers in the acute care setting. Avoidance of hospital-acquired pressure injury is on the entire team's radar, but linen selection and utilization are often overshadowed by treatment plans and workload. Since hospitalized patients experience excessive sweating or diaphoresis for a variety of reasons during their stay, choosing a patient gown that assists in moisture management and patient comfort is beneficial to maintain skin integrity and support patient satisfaction. The purpose of this article is to demonstrate the advantages of choosing a technologically advanced patient gown to manage moisture and provide the patient with a sense of dignity and comfort during their hospitalization.

CHALLENGE/PROBLEM—

Diaphoresis or excessive sweating is prevalent in many hospitalized patients. It can be caused by a variety of sources from medical conditions to medications and anxiety. Managing diaphoresis is a very real consideration for caregivers and, if left untreated, can contribute to health care acquired conditions, and negatively impact patient satisfaction and comfort.

In the 2011 *Journal of Wound, Ostomy & Continence Nursing* article entitled "Moisture-Associated Skin Damage: Overview and Pathophysiology", Gray et al. describe Moisture-Associated Skin Damage (MASD) as being caused by "prolonged exposure to various sources of moisture, including urine or stool, perspiration, wound exudate, mucus, saliva, and their contents".¹ The resulting localized inflammation sets the stage for further skin damage.

According to Shaked and Gefen, "patient repositioning when the skin is moist, e.g., due to sweat or urine may cause skin breakdown since wetness increases the skin-support coefficient of friction (COF) and hence also the shear stresses that are generated in the skin when the patient is being moved".²

Patient satisfaction and prevention of healthcare acquired conditions are high priorities in today's healthcare environment. Patient comfort is compromised with diaphoresis, since moisture, when trapped against the skin by a patient gown, can be uncomfortable and contribute to MASD. It is imperative that the healthcare industry consider high quality, technologically advanced patient gowns as important tools to reach these goals.

DESIRABLE PATIENT GOWN FEATURES—

Athletes understand the importance of attire that is breathable and wicks moisture away from the skin. The use of technologically advanced fabric is considered standard for today's athletic wear. In healthcare, efforts to maintain a healthy skin environment are bolstered when choosing breathable fabrics that wick away moisture resulting from perspiration, bodily fluids or accidental spills.

There are important considerations when selecting patient gowns. Historically, cotton and polyester fabrics were known to breathe less and interfere with the evaporation of perspiration, which is a key factor in regulating body temperature. Advanced technologies now provide fabrics with enhanced wicking capabilities that draw moisture away from the skin and distribute it across a greater surface area to enhance evaporation. Patient gowns must be soft and provide dignity with proper coverage and opacity. Other essential features are stain resistance, minimal shrinkage and color retention over the life of the garment. Poor quality gowns are abrasive, tear easily, stain, shrink, and impede evaporation of moisture.

In the past, the selection of patient gowns has been driven by functionality and cost. However, patient perception plays a key role in satisfaction scores. Hospitalization requires that patients interact with family, friends, caregivers and other patients. Providing a well-fitting gown that is visually appealing can ease anxiety associated with being a patient. It assures that the gown is not a source of psychological stress in addition to the pain and intrusiveness associated with hospitalization.³

SOLUS SOLUTION—

The Solus™ patient gown is part of the Revolution Linen System® that consists of technologically advanced, no-fold products, developed to support patient comfort, while maximizing efficiencies and reducing costs. The Solus gown is constructed from a woven synthetic fabric, which offers a unique alternative for patient comfort and coverage.

The Solus gown fabric is 50% softer than the traditional 55/45 cotton/polyester woven gown (TWG). The superior performance of the fabric lengthens the life of the gown and assures patient dignity with the wrap around design. It enhances moisture management with an absorption rate two times faster than the TWG. Once in contact with the fabric, moisture is wicked four times faster and then dissipated over three times the surface area of the TWG.

Feature	Woven Gown (TWG) 55/45 cotton/poly	Solus™ Woven Synthetic Gown	Test
Roughness	Length 7.172 Width 5.302	50% Softer (Length 3.865 Width 2.405)	Kawabata Surface test The lower the number the better
Moisture Management			
Absorption Rate	Bottom to Top 9.64%/sec	2 times faster Bottom to Top 5.28%/sec	Liquid Moisture Management Properties of Textiles Fabrics AATCC Test Method 195-2012 The lower the number the better
Maximum Wetting Radius	Bottom Fabric 5mm	3 times further (Bottom Fabric 15mm)	Liquid Moisture Management Properties of Textile Fabrics AATCC Test Method 195-2012 The higher the number the better
Wicking Speed	Bottom Fabric 0.55	4 times faster (Bottom Fabric 2.45)	Liquid Moisture Management Properties of Textile Fabrics AATCC Test Method 195-2012 The higher the number the better

Table 1: Clinical Benefits of Solus gown vs. traditional 55/45 cotton/polyester woven gown.

Feature	Woven Gown (TWG) 55/45 cotton/poly	Solus™ Woven Synthetic Gown	Test
Dry Time	Base	40% Faster	Manufacturer Testing
Stain Release	Blood 2/5	All 5/5	Manufacturer Testing - Tested 4 main stain types
Shrinkage	4% Length 3% Width	1% Length 2% Width	Manufacturer Testing - Results after 3 washes
Weight Loss	6-10%	1-3%	Manufacturer Testing -After 3-70 washes
Ironing or Folding Required	Yes	No	Manufacturer Testing
Color Retention over Life of Garment	No	Yes	Manufacturer Testing

Table 2: Laundering benefits of Solus gown vs. traditional 55/45 cotton/polyester woven gown.

(see Table 1), which assists in evaporation of moisture. The laundering attributes include minimal handling with no ironing or folding required. Drying times are 40% faster, and stain release tests revealed that stain release was achieved in all five categories versus the traditional woven gown which performed well in only two stain categories. The woven synthetic fabric retains color and opacity throughout the life of the gown with minimal shrinkage or weight loss/pilling (see Table 2).

CONCLUSION—

Caregivers in the acute care setting strive to maintain skin integrity, patient comfort, and satisfaction. Diaphoresis or excessive sweating, coupled with friction can lead to

skin breakdown and hospital-acquired pressure injuries. Hospital acquired conditions have a direct impact on cost, reimbursement, patient outcomes and satisfaction. Efforts to support skin health and patient satisfaction must include the use of technologically advanced healthcare textiles. High-quality patient gowns are breathable, wick moisture away from the patient and provide a sense of comfort, coverage, and dignity. The Solus patient gown is made from technologically advanced, woven synthetic fabric, developed to support patient comfort while maximizing efficiencies and reducing costs. Solus offers a unique alternative for patient comfort and coverage while delivering the perfect balance between patient satisfaction, comfort, and dignity.

REFERENCES—

¹Gray M, Black JM, Baharestani MM, Bliss DZ, Colwell JC, Goldberg M, Kennedy-Evans KL, Logan S, Ratliff CR. Moisture-Associated Skin Damage: Overview and Pathophysiology. *J Wound Ostomy Continence Nurs.* 2011;38(3):233-241. doi: 10.1097/WON.0b013e318215f798

²Shaked E and Gefen A (2013) Modeling the effects of moisture-related skin-support friction on the risk for superficial pressure ulcers during patient repositioning in bed. *Front. Bioeng. Biotechnol.* 1:9 doi:10.3389/fbioe.2013.00009

³Cho, K. (2006). Redesigning Hospital Gowns to Enhance End Users' Satisfaction. *Family & Consumer Sciences Research Journal*, 34(4), 332-349. doi:10.1177/107727X06286570

