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ABSTRACT—

Maintaining skin integrity, while providing patient safety and comfort, are routine tasks for caregivers in the acute care setting. Avoiding hospital-acquired pressure injury (HAPI) is a concern for the entire clinical team, but linen selection and utilization may be 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 contributes to moisture management and patient comfort benefits both skin integrity and patient satisfaction. The purpose of this article is to demonstrate the advantages of choosing a technologically advanced patient gown with safety features that manage moisture while providing the patient with a sense of dignity and comfort during hospitalization.

CHALLENGE/PROBLEM—

Diaphoresis is prevalent in many hospitalized patients and can be caused by a variety of medical conditions, medications or anxiety. Managing diaphoresis is a real concern for caregivers and, if left untreated, can contribute to healthcare-acquired conditions (HAC), and negatively impact patient outcomes and satisfaction.

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

Preventing HAC and increasing patient satisfaction are two of the major goals of the current 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 essential tools to reach these goals.

DESIRABLE PATIENT GOWN FEATURES—

Athletes understand the importance of attire that is breathable and wicks moisture away from 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 also improved when choosing breathable fabrics that assist perspiration, bodily fluids or accidental spills.

Breathability: Historically, cotton/polyester blend fabrics were known to breathe less than 100% cotton fabrics and interfere with the evaporation of perspiration, a key factor in regulating body temperature. Advances in textile manufacturing now provide synthetic textiles with enhanced breathability which regulates the microclimate of the skin.

Softness and Appearance: Patient gowns must also be soft and provide proper coverage and opacity. They should experience minimal shrinkage and maximum color retention over the life of the garment. Poor quality gowns are abrasive, tear easily, shrink, fade, and impede evaporation of moisture.

Patient Satisfaction: In the past, the selection of patient gowns has been driven primarily by functionality and cost. Since hospitalization requires that patients interact with family, friends, caregivers and other patients, providing a comfortable, 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 adding to the pain and intrusiveness associated with hospitalization.³

THE ENCOMPASS PERFORMANCE POLY™ GOWN—

The Encompass Performance Poly™ (P2) gown is made of 100% polyester fabric and was specifically developed to address the goals of enhanced patient safety, comfort and coverage.

The P2 gown has a high breathability rate which results in a drier microclimate for the skin.

The P2 gown is 50% softer than a cotton/polyester blended Traditional Woven Gown (TWG) providing superior patient comfort.

Feature	Test	Traditional 55/45 Cotton/Poly Gown	Performance Poly P2	
Breathability	ASTM E96	33.36 g/sq m/24 hrs	1172 g/sq m/24 hrs	The higher the number, the greater the water vapor transmission.
Roughness	Kawabata Surface Roughness Test	6.23 micron	3.11 micron	P2 is 50% softer than the cotton/poly gown.
Shrinkage	AATCC96	3-5%	0%	P2 does not shrink over the life of the gown, assuring full patient coverage and dignity.

Table 1: Clinical Benefits of P2 vs. Traditional 55/45 Woven Gown.

Feature	Test	Traditional 55/45 Cotton/Poly Gown	Performance Poly P2	Interpretation
Drying Time	AATC 199	25.1 mins	13.5 mins	Less drying time with a reduction of resource utilization.
Moisture Retention	AATCC 199	145.00%	96.70%	Results in shorter drying time.
Pilling	ASTM 3512	5	5	Lint reduction and patient satisfaction.
Weight Loss	AATCC 96	0.18%	0.03%	P2 gown maintains weight throughout the life cycle.
Shrinkage	AATCC 96	3-5%	0%	P2 does not shrink over the life of the gown, reducing replacement costs
Stain Release	AATCC 130	5.0	5.0	Test results show that the P2 gown has the best stain removal rating for synthetic blood, Hibiclens, Betadine and Iodine.

Table 2: Laundering Benefits of P2 vs. Traditional 55/45 Woven Gown.

The features of the P2 gown enhance patient satisfaction while providing comfort and dignity.

The features listed in Table 2 demonstrate significant attributes for laundering as well. Linen processors will see faster drying times and reduced costs associated with the laundering of P2. The proprietary design and special printing technique assures that color retention lasts through the life of the gown. Testing shows that P2 has very minimal shrinkage or color fading for 50 washings and demonstrates high level stain removal characteristics. The superior performance of the fabric lengthens the life of the gown and assures patient dignity with the comfort and coverage feature.

CONCLUSION—

Caregivers in the acute care setting strive to maintain skin integrity, patient safety and patient satisfaction. Diaphoresis coupled with friction can lead to skin breakdown and HAPI which have a direct impact on cost, reimbursement, patient outcomes and satisfaction. Efforts to support skin health and patient satisfaction must include the use of high quality, technologically advanced synthetic patient gowns that are breathable and provide enhanced comfort, coverage, and dignity. The Encompass P2 patient gown delivers the perfect balance of patient safety, comfort and dignity while maximizing laundering efficiencies and reducing costs.

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:10.1177/1077727X06286570