

## The Use of Multilayer Component Foam Dressings for Pressure Ulcer Prevention:

ORIGIN, DATA, and INTERNATIONAL CONSENSUS

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### Objectives

- Describe the risks of OR acquired pressure ulcer development
- Discuss the results of prophylactic dressing use and OR association
- Describe how a dressing's construction may or may not result in pressure ulcer prevention
- Discuss the development of guidelines for the use of dressings in pressure ulcer prevention by an expert consensus panel

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### Pressure Ulcers: High Volume & High Cost

- U.S. acute care facilities treat approximately 2.5 million patients with PU per year
- Approximately 60,000 patients die each year of PU complications
- Approximately \$12 billion per year is spent treating PU
  - Federal estimate only, does not include state or private insurance figures (Lyder 2012)
  - \$500-100,000 per ulcer
    - Depends on continuum of care
    - Infected ulcer may cost upwards of \$250,000



Ayello & Lyder, 2007, 2012

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### Studies on ICU and PU Risk

- Surgical Intensive Care (Nijs, et al., 2008)
  - History of Vascular disease
  - Use of Dopamine (≤ 5 ug/kg/min)
  - Intermittent Hemodialysis (IHD)
  - CVVHD
  - Mechanical Ventilation
- Surgical ICU
  - Braden +following risk factors: (Slowikowski & Funk, 2010)
    - Age >70
    - Diabetes Mellitus
    - Unable to turn, hemodynamically unstable
- Feuchtinger et al, (2007) Cardiac Surgery ICU
  - Restraints in activity, mobility, nutrition, mechanical ventilation
  - 90% were at risk via Braden within first 4 post surgical days
    - Use to identify patient specific risk factors

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Publication Available from WCET Journal Regarding Early STICU Trial and Results:  
  
Volume 30, 1, January-April 2010 Issue.




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### Operating Room PrU Incidence

- Incidence 12-66%<sub>(1)</sub> 4-45%<sub>(2)</sub> Average 25%<sub>(3)</sub>
- 1.3 million PPrU with 1 million stage II or worse
- Surgical Patients account for 42% of all HA Ulcers<sub>(1)</sub>
- **CABG 466,000/yr (29%)**<sub>(4)</sub>
- Total Hip Replacement 235,000/yr (42-55%)
- Schoonhoven (2002) OR 52.9% heel ulcers
- Scott-Williams (2005) OR 52% heel ulcers
- Lindgren Study (Hips & Knees) 11% developed heel ulcers

Sources: <sup>1</sup> Aronovitch, <sup>2</sup> Price, <sup>3</sup> Scott-Williams, <sup>4</sup> NCHS 2005  
<http://www.cdc.gov/nchs/fastats/insurg.htm>  
 Fowler F, Scott-Williams S, McGuire J. Practice recommendations for Prevention Heel Pressure Ulcers. *ONM* 2008; 54(10):42-57  
 Property of Suzy Scott-Williams  
 soozq77@aol.com

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## OR Pressure Ulcers

1. Transfer (shear)
2. Time
3. Position
4. Patient (size/shape/risk factors)

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### Operating Room PU: Incidence

Reported Incidence in Literature Over Time

3-h surgery: 5.8% <sup>40</sup>
4-5 h: 8.9%
5-6 h: 9.9%
>7 h: 13.2% <sup>40</sup>

Schoonhoven and colleagues<sup>40</sup> report that for every 30 min surgery is prolonged over 4 h, risk of developing pressure ulcers is increased by 33%.<sup>40</sup>  
(95% CI 13%-56%)



J. Howard/Obstet. Continence Nurs. 2012; 19(2): 115-142. Published by Lippincott Williams & Wilkins

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Is it an OR PRESSURE ULCER:  
48-72 hours post op?  
Associated with OR position?



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**Think Ahead:**  
**NPUAP Recommendations**<sup>(1)</sup>

- Pre-operative positioning
- Consider pressure redistribution mattresses in the perisurgical unit
  - **POSITION**
    - What position will the patient be in during surgery?
      - Instruct patient to lay in an alternate position until being taken back!
- Skin Assessment/Risk Assessment

**What else can we do?**

Source: <sup>1</sup>National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel. Prevention and treatment of pressure ulcers: clinical practice guideline. Washington DC: National Pressure Ulcer Advisory Panel; 2009. (pg 43)

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**Cardiac Surgery ICU**

- Cardiac Surgery Patients Incidence of PU: 29.5%
- RISK IS ELEVATED SECONDARY TO:
  - OPERATING ROOM
    - Cardiac surgery specific risk factors
    - Comorbidities
- Treatment Interventions

Source: Feuchtinger, 2006

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**Cardiac Surgery Specific Risk Factors**

- Intraoperative Risk: (Shoemaker, 2007).
  - Patient Morbidity
  - Type of Surgical Procedure
  - Hypothermia
    - USE OF WARMING BLANKETS\*
  - Anesthesia/Anesthetic agents
  - Hemodynamics
  - Time on oR table
  - Body Position
  - Shear
  - Intensity and duration of pressure
  - Moisture/pooled solutions
  - Impaired sensory perception
- Extracorporeal circulation:
  - Cooling, reheating, cooling time to normothermia. (Feuchtinger, 2006).

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### Study Design:

- Study Length: 3 Months
- Sample Size: 100
- 85 Met Criteria
- Standard Care: 35
  - 4/39 removed
- Intervention Group (MBS): 50
  - 6/56 removed
  - 5 lost forms of unknown group

- **Standard PU prevention protocol** applied to all patients including provision of specialised support surface
- **All patients received Mepilex Border during surgery** – standard care group; dressing removed on admission to ICU, intervention group retained Mepilex Border insitu
- **Intervention group underwent daily skin checks** (lifting and replacing dressing); dressing replaced every 3 days unless required earlier

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### LIMITATIONS of Study: OR Prevention

"We acknowledge that subjects in intervention and comparison groups who underwent cardiothoracic procedures had the dressing applied during their surgical procedures. We observed that no PU developed until 6 days following surgical procedure in either group, suggesting that the dressing may have influenced the intraoperative risk of PU development."

**TABLE 1**  
Surgery Questionnaire: Comparison of Length of Surgery in Study vs Reported Incidence Rates in Literature

	Standard Care Group	Intervention Group	Reported Incidence in Literature Over Time
Number of cases < 4 h duration	30/39 (77%)	36/56 (64%)	14 among 1,000*
Number of cases > 4 h duration	17/39 (43%)	20/56 (36%)	4 to 6, 6.9% 3 to 6, 6.9% 1 to 3, 12.5%†
Length of case (hours)	78.65 (no pressure ulcer developed)	71.7 (no pressure ulcer developed)	Meta-analysis and colleagues <sup>10</sup> report that for every 10 min increase in surgical time, risk of developing pressure ulcers is increased by 2.7%. <sup>10</sup> (95% CI 1.76-4.09)

\*With control and experimental groups (total of 100 cases) from 1980s; higher incidence reported in literature.

Brindle et al JWOON 2012

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### Primary Question Clinician May Have:

- "Did not reach statistical significance"....WHY?
  - Failed to achieve adequate POWER and SAMPLE SIZE
  - OR Limitations
- Multicenter study
- After VCU completion
  - 1 Facility had 6 mo. of QI data showing PU reduction using MBS, therefore their IRB wanted consent to NOT use the dressing
  - 2<sup>nd</sup> Facility had to drop out due to previous study approval for incontinence dermatitis study in same population

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**How is this possible?**

- Why would this dressing be beneficial?
- Can you use just any dressing?
- Do all foams work?

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**Dressings for Prevention of Pressure  
Ulcers?**

- Fact or Fiction?
- How would it work?
- Has this ever been done before?
- Can you show me some proof?

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**How would a runner reduce  
friction and shear...**



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What if the dressing reduced friction and shear...would that be enough?




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So would just ANY dressing work?  
So would just ANY dressing work?

- Nakagami, G., Sanda, H., Konya C., Kitagawa, A., Tadaka, E., Tabata, K. (2006) Comparison of Two Pressure Ulcer Preventive Dressings for Reducing Shear Force on the Heel. *JWOCN*; 33: 267-272.
  - Film vs. hydrocolloid-ceramide-film
  - Conclusion: dressings may reduce shear force, but do NOT affect pressure and CANNOT substitute heel elevation.




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What Does the Data Say About Pressure?-  
Switch to foam

- Ashford RL, Fearar ND, Shippe JM. An in-vitro study of the pressure relieving properties of four wound dressings for foot ulcers. *J Wound Care*. 2001; 10 (2) 34-38
  - Reduction of impact pressures
- Bots, T., Apotheker B.F.G. (2004) The prevention of heel pressure ulcers using a hydropolymer dressing in surgical patients. *J Wound Care*; 13(9): 375-378
- Chokalingam, N., Ashford, R. (2004). A pilot study of the reaction forces at the heel during walking with the application of four different wound dressings. *J Tissue Viability*; 14 (2): 63-66
- Chokalingam, N., Ashford, R.L., Dunning, D. (2001) The influence of four wound dressings on the kinetics of human walking. *J Wound Care*; 10 (9): 371-374

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**DOES JUST ANY FOAM WORK?  
NO....Construction Matters.**

**A DRESSING SHOULD:**

- Depend on Body Location?
  - Callaghan, S., Trapp, M. (1998). Evaluating two dressings for the prevention of nasal bridge pressure sores. *Prof Nurse*. 13 (6): 361-4.
- Larger than the bony prominence
- Redistribute Pressure
- Redistribute Shear
- Reduce coefficient of Friction
- Adequately manage microclimate (heat+moisture)

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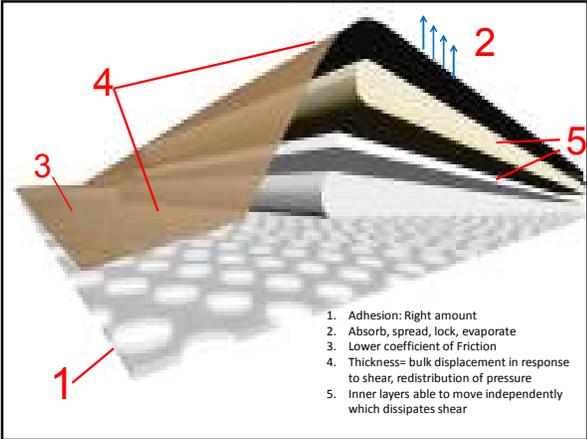
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**Can a Dressing Reduce the Impact of Moisture and Heat**

Dressing applied to artificial skin that can sweat !

Measurement of moisture at skin interface and on top of dressing

Moisture that escapes reduces microclimate effect

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- Original Study:
  - Septic Patient with anasarca
  - Dressing saturated with fluid
  - Patient losing 4+ liters of fluid daily
- Explains why her skin remained dry and intact under dressing.




Mepilex® Border Sacrum

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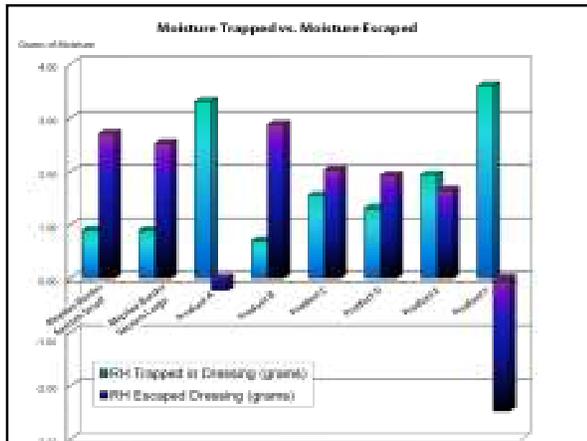
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### Can a Dressing Reduce the Impact of Pressure?

Direct pressure applied to "skin" with sensor

Pressure normally creates a "cone" of impact as tissue absorbs force

Deflection of pressure measured



Mepilex® Dressing

In Vitro Comparison of the Prophylactic Properties of Two Leading Commercially Available Wound Dressings. Poster Presented at SAWC #012 by Evan Call et al.

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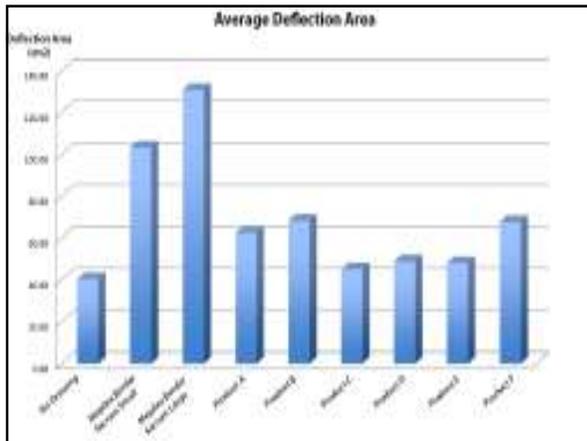
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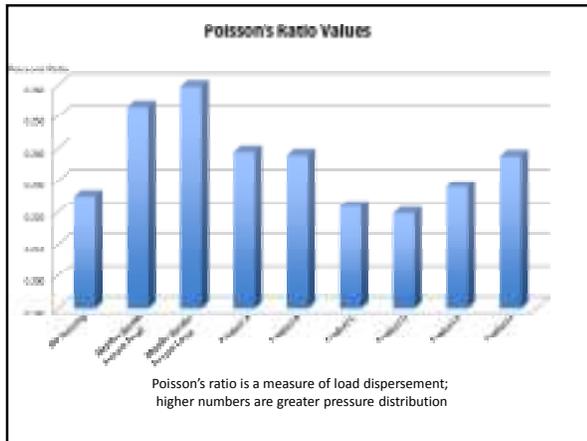
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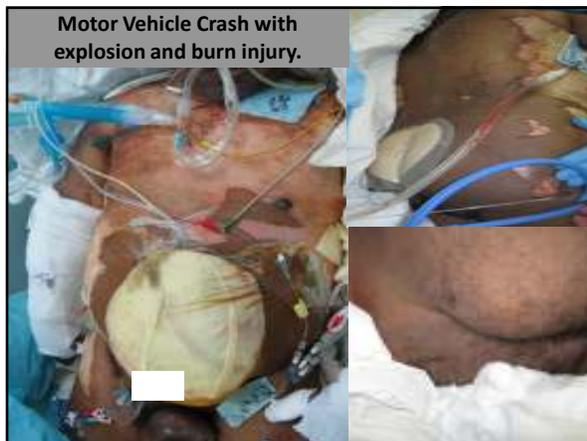
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**Use of a Soft Silicone Bordered Sacrum Dressing to Reduce Pressure Ulcer Formation in High Risk Patients: A Randomized Clinical Trial**

Presented by  
Peggy Kalowes RN, PhD, CNS, FAHA  
Principal Investigator  
Director, Nursing Research and  
Evidence Based Practice

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**Research Study Team**

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**Background of the Problem**

- Pressure ulcers (PUs) cause harm to patients, causing pain, infections and extended lengths of stay; Increase health care cost and personal burdens; and involve legal and liability issues; <sup>1</sup>
- In 2007, the U.S. Center for Medicaid and Medicare Services (CMS) reported 257,412 cases of preventable pressure ulcers as secondary diagnoses. The average cost for these cases was **\$30,000 to \$43,180** per hospital stay; <sup>2</sup>
- Hospital acquired pressure ulcers (HAPUs) occur in 3% to 12.7% of acute care and intensive care patients; Around 70,000 people die each year from complications of PUs; <sup>1</sup>
- [Our hospital Baseline Pressure Ulcer Prevalence data \(3.57 – 6.90\) 2010-2011.](#)

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### Primary Aim

- The aim of this randomized controlled trial (RCT) was to determine whether a prophylactic application of a self-adherent \*Silicone Border Sacrum dressing (Intervention) would reduce the incidence of Pressure Ulcer(PU) formation in high-risk, intensive care unit (ICU) patients, when compared to a group (Control)



\*PRODUCT NOTATION: Meditech® Border Sacrum Dressings, provided by Molyckle Health Care, Inc. US, LLC, Norcross, GA. (MHC-2012-490) for the pilot phase of this study.  
\*\*SKIN Bundle: Gibbons et al. Eliminating facility-acquired pressure ulcers at Ascension Health. Joint Commission Journal on Quality and Patient Safety. 2006;32:488-496

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### Secondary Aims

- To describe patient characteristics and examine the role of multiple variables (age, sex, condition related factors; treatment and patient related factors) as potential correlates to development of pressure ulcers.

**Secondary Endpoints:**

- Reduction in length of stay (LOS), resource utilization and incremental cost effectiveness.
- Evaluate the effectiveness of the Braden Scale<sup>8</sup> and our proposed skin care policy interventions for prevention.

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### Methodology

**Design**

An experimental, two-group study design was used to randomize (1:1 basis) a total of **367** patients into the study. (**N=184**) enrolled in the intervention group receiving the SKIN\*\*Bundle and application of the Silicone Border Sacrum dressing, and (**N=183**) Control Group receiving usual care, including SKIN\*\* Bundle.

**Setting**

Study was conducted over a 10-month period in 2011, at large, urban, academic teaching hospital, in the 31-bed Medical / Surgical/ Trauma intensive care unit; and a 23-bed cardiac care unit (CCU).

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## Methodology cont.

### Inclusion Criteria

All patients admitted to the intensive care unit and cardiac care unit with a Braden Scale<sup>8</sup> Score  $\leq 13$ , and intact skin, were study eligible.

- If eligible, patients/families were verbally consented (*Approved Institutional Review Board (IRB) Script*), then randomized to either the intervention or control group.

### Exclusion Criteria

- Braden Scale Score  $\geq 14$
- Existing sacral pressure ulcers or moisture related skin damage
- Patients receiving end-of-life care or withdrawal of life-sustaining treatments

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## Measurement

1. **Demographic Recording Tool** – Investigator tool to record data on study variables from the electronic medical record (EMR), (age, date of birth (DOB); race; primary language; religion; gender; family status; length of stay (LOS); co-morbidities; length of ICU and hospital stay, diagnosis and risk factors).
2. **The Braden Scale** - Used as enrollment index. Braden Scale<sup>8</sup> is used for Predicting Pressure Sore Risk, and is a validated tool that allows nurses and other health care providers to reliably score a patient's level of risk for developing pressure ulcers.
3. **Daily Skin Assessment**; study team evaluated subject's skin condition daily for signs of breakdown; and for use of SKIN\*\* Bundle; and reviewed whether nurses applied the appropriate interventions per policy and procedure.
4. **Acute Physiology and Chronic Health Evaluation (APACHE) IV**: APACHE IV is a successful scoring system predicting severity of illness and prognosis of ICU patients, and is used for hospital mortality assessment for today's critically ill patients. The first 24-Hour score is most predictive of survival. Range (.60-.90%) is high risk for death.<sup>5,6</sup>

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## SKIN\*\* Bundle

Protect Your Patient's SKIN Pressure Ulcer Prevention

**Surface:** Specialty Mattress

**Keep Turning:** Reposition at least every two hours; Offload heels; Remove pressure-generating devices every shift

**Incontinence:** Perineal care every two hours Moisture barrier; Avoid diapers except for excessive stool, urine

**Nutrition:** Dietary consult for nutritional deficits; Carry out orders

TISSUE INJURY MORE THAN SKIN DEEP

\*\*Gibbons et al. Eliminating facility-acquired pressure ulcers at Ascension Health. Joint Commission Journal on Quality and Patient Safety. 2006;32:488-496.

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### Study Procedures

**Intervention (Experimental) Group**

•Received *Usual Care* (daily Braden Risk Assessment; use of SKIN\*\* Bundle 7 protocol and the application of the Border Sacrum dressing.

•Study RN(s) were responsible for the initial application of Border Sacrum dressing; and changed it every 3 days and when it was dislodged or soiled.

- Use of the SKIN\*\* Bundle and skin assessment of sacral area beneath the dressing, and the condition of the Border Sacrum dressing.
- **Note-** When the patient was discharged from the ICU, the bedside nurse removed the dressing, prior to transfer to regular ward.

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### Study Procedures

**Control Group (usual care)**

•Received *Usual Care* to include (daily Braden risk assessment & preventive care per the SKIN\* Bundle 7 protocol)

•**On-A-Daily Basis** -all patients were assessed until discharge from the ICU or CCU. Registered Nurses (RNs) and study team used the National Pressure Ulcer Advisory Panel’s 2009 updated staging system.<sup>10</sup>

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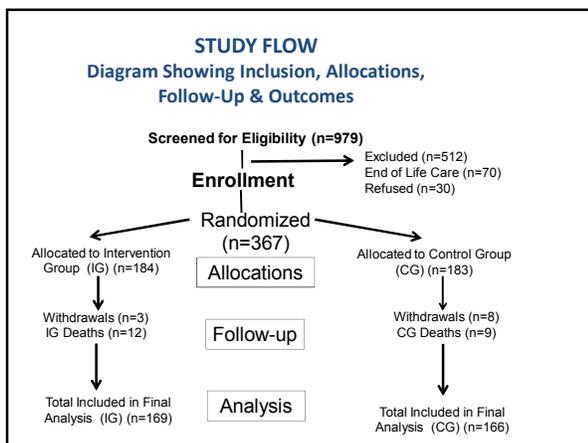
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STUDY CHARACTERISTICS (N=367)	
Age; Mean ± (SD)	67.5 (15)
<b>Gender</b>	
Male	60.3%
Female	39.7%
Braden Score Mean ± (SD)	11.2 (1.12)
Co-Morbidities >4 (%)	70%
<b>Mechanical Ventilation</b> (%) of Patients who Developed PUs	54%
Continuous Sedation/Paralyzing Medication >48 hours	146 (40%)
Use of Vasopressor Medications >48 hours	245 (67%)
<b>Mortality</b>	
Intervention Group (184)	12 (6%)
Control Group (183)	9 (4%)
ICU Length of Stay [LOS] Range (0-120 days)	6.5 days
<b>APACHE IV Mortality Risk (%)</b> Mean range study cohort	(.60-.90)

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### Study Results

- **8 Pressure Ulcers** developed during the 10-month study
- 7 in the Control Group and 1 in the Intervention Group

CONTROL GROUP (N=7)		INTERVENTION GROUP (N=1)	
PU Location	PU Final Stage	PU Location	PU Final Stage
Coccyx	Unstageable		
Coccyx	Stage 2	Coccyx	Deep Tissue Injury
Buttock	Stage 2		
Buttock	Deep Tissue Injury		
Coccyx/Sacrum	Unstageable		
Coccyx	Stage 2		
Coccyx	Stage 2		

NPUAP Staging Guidelines Used<sup>10</sup>

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### Risk Factors as Predictors of Pressure Ulcers

**Other risk factors found to be strong correlates ( $r = 0.72$ ) among patients who developed PUs were:**

Altered Level of Consciousness

- Increased Length of Stay
- Vasopressors
- Mechanical ventilation
- 4+ Comorbidities

**Key Dressing Points**

- Easily Applied and Painless to patient
- Remained in place, yet allowed daily inspection
- Atraumatic to skin
- Impermeable to stool and urine
- Absence of fungal Infection or dermatitis beneath the dressing

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## Study Conclusions

- This RCT tested the efficacy of using Silicone Border Sacrum dressing as a preventive therapy among critically ill patients, to reduce the risk of hospital acquired, sacral PUs. Findings were statistically significant at (P=.001) among the treatment group.
- Our incidence rate among 367 study patients included the development a total of eight pressure ulcers (1- Intervention group and 7-Control Group); and a 2.2% prevalence rate among the study cohort.
- More than half the sample had >4.13, number of Comorbidities; and were on vasopressor medications.
- Approximately 54% of those who developed HAPUs were mechanically ventilated.
- Our overall findings validate recent studies <sup>1,2,3,4</sup>, thus early adoption of this unique, low cost dressing for prevention is warranted.

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## Applying the Evidence to Clinical Practice: Business Case to End Users

Nationally, over 900 hospitals in U.S. (>250 beds) have adopted the Silicone Sacrum Dressing for prevention

Cost of Border Sacrum Dressing - \$30,000/annually  
Compared to:

Cost of Treating (1) Pressure Ulcer

Increased nursing time, LOS; Legal fees; Average cost for PU cases was  
cost of settlement; patient pain and \$30,000 to \$43,180 per hospital  
suffering; even death stay

★ If Mepilex® was applied to all high risk patients; there would have been an estimated \$210,000.00 cost savings by preventing the (7) pressure ulcers among the control group during the course of the study.

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## References

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10. National Pressure Advisory Panel (NPUAP, 2007). Updated Pressure Ulcer Staging System 2007.

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## Should dressings be added to the prevention guidelines?

Joyce Black, PhD, RN, CWCN, FAAN  
University of Nebraska Medical Center  
Omaha, NE



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## Disclosure

- The ideas and work being presented in this talk are from a consensus panel sponsored by Mölnlycke
- Panelists working on this project include
  - Nick Santamaria, Australia
  - Michael Clark, UK
  - Carol Dealey, UK
  - Tod Brindle, US
  - Evan Call, US
  - Paulo Alves, Portugal

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## How are we doing with pressure ulcer prevention?

- Over the past 30 plus years, studies on prevention have not found a sustainable method of reducing ulcers
  - 10 guidelines on pressure ulcers in past decade
- NPUAP monograph to be published later this year did not find significantly lower rates of pressure ulcers in any area
- Brindle discovered that the use of a composite soft silicone dressing reduced ulcers in the high risk patients in ICU and patients in OR

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### Adult ICU Risk Factors

- 347 pts admitted to ICU over 7 months (10/2008-5/2009)
  - Retrospective Correlational Design
  - Risk Factors
- Age
  - Length of Stay
  - Mobility
  - Friction/Shear
  - Nor-epinephrine Infusion
  - Cardiovascular Disease
- 18.7% ulcer rate (65/347)
  - 58% of PrU were sacral



• Cox, J. (2011) Predictors of Pressure Ulcers In Adult Critical Care Patients

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### Evolution in dressings for prevention

- Use of dressings for friction long-standing
- Foam applied to the skin reduced shear
  - Normal subjects
    - Ohura, Takahashi from Japan
  - Mepilex prevented sacral ulcers in ICU patients
    - 93 patients in 2 groups
    - No ulcers in dressing group
    - 6 in control group
      - Brindle, 2009




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*Consider the use of a multi layer silicone foam dressing to enhance, but not replace, pressure ulcer prevention strategies for the sacrum, buttocks and heel. (SOE = B)*

- Brindle: PrU rate lower in ICU (2010)
- Brindle: PrU rate lower in OR (2012)
- Chaiken: PrU rate fell from 13.8-1.8 in ICU (2012)
- Cherry: PrU in ICU rate fell to 0 (2012)




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*Before selecting a dressing consider the current status of the skin and the ease of dressing removal in order to prevent mechanical stripping*

*(SOE= B).*

- Skin injury can result from removal of strongly adhesive dressings (Dykes, 2001)



Vulnerable skin of the elderly

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*Apply the dressing to dry intact skin. Do not use emollients or other barriers . (SOE=C)*

- Emollients and other skin preparations and barriers can reduce the adhesive properties of the dressing.



Zinc oxide and powder prevent dressing adherence

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*Choose a dressing[s] that exceeds the area of tissue at risk on the sacrum, buttocks or heel to be protected from pressure and shear. (SOE=C)*

- Choose or make a dressing larger than body area at risk
  - Allows pressure and shear forces to be deflected into tissue outside the area of risk
- Multiple dressings may be needed



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*Inspect the skin beneath the dressing and change the dressing according to policy/manufacture (SOE = C)*

- Inspection of skin under dressing on each shift recommended
- Change dressing every 3-5 days unless soiled



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*Consider discontinuation of the dressing as the patient's risk for pressure ulcer development decreases per clinical assessment (SOE=C).*

- As clinical risk decreases, the dressing may not be needed



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*Consider placement of multi layer soft silicone foam dressings to the buttocks and sacrum prior to prolonged procedures or anticipated events when the patient cannot move or be moved from the supine position. (SOE=B)*

- Dressing shown to reduce pressure in immobile patients in OR
- Time to develop OR ulcers is generally greater than 3 hours



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*Consider placement of soft silicone dressings to the buttocks and sacrum when the head of the bed must be continuously elevated. (SOE = B)*

- Shear injury when HOB elevated can be reduced with layered dressing
- Sacral DTI with HOB up



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*Consider placement of multi layer soft silicone foam dressings to the heels prior to prolonged procedures or anticipated events when the patient cannot move or be moved from the supine position. (SOE=C)*

- Heels at high risk for pressure
  - Immobile legs, neuropathy, arterial disease



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*Consider placement of multi layer soft silicone foam dressings to the heels for patients at risk of shear injury (SOE=C)*

- Heel at risk for shear injury
  - Shear forces tear layers of skin/tissue
  - Leads to blisters
- Shear forces best prevented by layered dressings



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*Inspect the skin beneath medical devices according to institutional policy or standards of care (SOE=C)*

- Incidence of pressure ulcers in patients with medical devices
  - 35%-96% in adults, 50% in children



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*Consider the use of dressings that demonstrate pressure redistribution for body areas in contact with medical devices (SOE = B)*

- Dressings shown to reduce ulcer incidence
  - Tracheostomy 8.1% to 3.4% (Boesch, 2012)
  - Oxygen tubing 37% to 0% (Turgania, 2011)
  - NIPPV (Weng, 2012)
    - Film dressing 53.3%
    - Hydrocolloid 40%
    - No dressing 96.7%



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*In addition to dressings applied beneath medical devices, continue to lift and/or move the medical device to examine the skin beneath it and reposition for pressure relief. (SOE= C)*

- Skin inspection should be on each nursing shift (tour)



Elastic compression stocking rolled down behind the knee

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*When simple repositioning does not relieve pressure, it is important not to create more pressure by placing dressings beneath tight devices. (SOE=C)*

- Thin dressings shown to be effective (Weng, 2012, Bosch, 2012)
  - Film is not effective (Weng, 2012)

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### How can a dressing do all that?



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### Conclusions of Panel

- Pressure ulcer prevention should include dressings
  - Bench research on
    - Pressure redistribution
    - Shear reduction thru layered design
    - Friction reduction with outer surface
    - Microclimate management with absorptive filler
  - Clinical research on
    - OR and ICU pressure ulcer reduction
      - Case series and historical controls
    - RCT in progress with Australia
      - Early analysis shows stat sig less ulcers in dressing group

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### Conclusions of Panel

- Skin beneath medical devices should be padded with thin dressings
- Little direct evidence
  - Most studies address the issue of a specific product
    - Neck collars, stockings
  - Dressing cannot be too thick or it will add pressure
  - Device still needs to be moved for skin assessment or padded if skin assessment cannot be done
  - Do you have evidence on this issue?

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### Dressings should be added to the pressure ulcer prevention guidelines

Bench science of their function is present  
The structure of the dressing reduces shear and pressure  
Clinical evidence to support their effect is building  
Thanks to Mölnlycke for sponsoring this effort!

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### Questions?

Thanks to Mölnlycke for supporting this panel



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