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Commentary: Low hanging fruit—reducing hospital-acquired pressure injuries associated with cardiac surgery

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Health care reimbursement has been steadily transitioning from fee-for-service to value-based payment models in an effort to improve outcomes and decrease costs. Moreover, in value-based health care, portions of physician and hospital reimbursement are now directly tied to quality metrics.¹ Focusing the collective attention on preventable adverse outcomes, no matter how mundane, can significantly decrease cost over a given episode of care.² One such opportunity, frequently overlooked, is reducing hospital-acquired pressure injuries (HAPIs). This can provide a direct positive impact on financial and clinical metrics as well as improving the patient experience. In this issue of the *Journal*, Geller and Seng³ provide compelling reasons to use a foam silicone dressing to prevent sacral HAPIs associated with cardiac surgery. The majority of cardiac surgical patients are at high risk for HAPI, and a number of proven prophylactic preventative measures have been described.⁴ Foam silicone dressings can be lifted from the skin and reapplied without compromise to the underlying tissues or dressing, permitting nursing skin assessments to be conducted each shift.

The authors of this observational study briefly discuss that a future randomized controlled trial (RCT) demonstrating a statistically significant benefit for this type of preventative measure would require randomization of

CENTRAL MESSAGE

Routine use of a silicone foam protection dressing in cardiac surgery is a low-risk, low-cost means to avoiding hospital-acquired pressure injuries.

thousands of patients. Interestingly, only a very small percentage of our presently accepted and widely practiced intensive care unit protocols have been proven using RCTs.⁵ In addition, RCTs, by ignoring previous information, are potentially wasteful and unethical when they unnecessarily expose patients to possible harm.⁶ Observational studies are often criticized for being considered only as hypothesis-generating. However, retrospective analyses frequently provide valuable actionable information and are significantly less costly and faster to conduct than RCTs.⁷

Geller and Seng suggest the next iteration of Enhanced Recovery After Surgery (ERAS) guidelines for perioperative care in cardiac surgery⁸ should include recommendations for HAPI prevention. ERAS guidelines are fundamentally based on the aggregation of marginal gains⁹ and a measure of relative risk to benefit.¹⁰ Thus, despite a paucity of data, a HAPI perioperative care bundle may be a reasonable element in future expert consensus recommendations. During and after cardiac surgery, a pressure injury prevention bundle, which can include both sacral and heel silicone foam protection,¹¹ should probably be considered (Figure 1).

Implementation of existing ERAS guidelines, such as optimization of nutrition status before surgery, early postoperative enteral feeding, vigilant skin assessment, and early postoperative mobilization, when combined with foam silicone dressings, may enhance the prevention of a HAPI.¹² Like all ERAS program elements, the

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Baystate Health Bundle for Pressure Injury Prevention in Adult Cardiac Critical Care

For All Patients in the ICU	
<ul style="list-style-type: none">Assess skin (at admission and every 12 hours) even under dressings including the heels and document every 12 hours. Admission assessment performed by 2 RNs.Record Braden score every 24 hours.Use therapy surface mattress and non-fitting sheets (wrinkle free). Order a specialty bed if patient is high risk and a low air loss ICU bed is not available.Call for Wound Care RN Consult for concerns & questions. If you discover a wound, consult the Wound Care RN for a treatment regimen.Position every 2 hours when in bed and every 30 minutes when in chair.Place pillows (bridged) behind back with side lying positions.Place pillows under calves to assure that heel and Achilles's area are offloaded.	
For Patients Meeting One of These Criteria:	
CATEGORIES	<ul style="list-style-type: none">Place Mepilex Border Sacrum. Replace every 4 days and if soiled (<i>May stay up to 7 days</i>).Place Mepilex Border Heel. Keep for 3 days. <i>For Mepilex Border Sacrum and Heel: Write "P" and date of application.</i>Place Z-Flex Boot if patients still requires heel protection after 3 days. <p><i>Do Not apply creams (Medline Moisturizer or Hydraguard) or Skin Prep under Mepilex Dressings for prevention.</i></p>
> 80 years	
70-80 years + Braden ≤ 12	
< 70 years + Braden ≤ 12 + Diastolic BP < 60 mmHg	
Patient on Advanced Cardiac Device/Support	
Anticipated OR longer than 3 hours	<ul style="list-style-type: none">Place Mepilex Border Sacrum. <i>Write "P" & date of application.</i>Place Mepilex Border Heel. <i>Write "P" & date of application.</i> <p>Reassess skin following OR and then every 12 hours. Remove if incontinent post-op.</p> <p><i>Do Not apply creams (Medline Moisturizer or Hydraguard) or Skin Prep under Mepilex Dressings for prevention.</i></p>
Incontinence:	
<ul style="list-style-type: none">Place Mepilex Border Heel. Keep for 3 days. <i>Write "P" for prevention & date of application.</i>Place Z-Flex Boot if patient still requires heel protection after 3 days.Apply Skin Prep or Z-Guard (orange) to sacral area to prevent contact dermatitis.Apply Medline Z-Guard (orange) to treat contact dermatitis. <p><i>Do Not apply creams (Medline Moisturizer or Hydraguard) or Skin Prep under Mepilex Border Heel Dressing for prevention.</i></p>	
For Patients Not Meeting the Above Criteria:	
<ul style="list-style-type: none">Apply Medline Moisturizer (purple) on back and sacrum (or Skin Prep on sacrum).Apply Medline Hydraguard (blue) on heels.	

FIGURE 1. Baystate Health bundle for pressure injury prevention in adult cardiac critical care.

implementation of a HAPI prevention bundle will require a multidisciplinary team approach including surgeons, intensivists, advanced practice providers, nurses, and patients. However, most would agree that the relatively

low cost of these dressings compared with the high financial and personal cost of a devastating deep pressure injury make this intervention “low hanging, but satisfying fruit.”

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