

EFFECTIVENESS OF SILICONE-COATED FOAM DRESSINGS ON PREVENTION OF PRESSURE INJURIES: AN EVIDENCE-BASED PRACTICE (EBP) PROJECT

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BACKGROUND AND SIGNIFICANCE

- Critical care patients are at the highest risk of hospital-acquired pressure injuries (HAPI) due to prolonged immobility, hemodynamic instability, vasopressors, diminished sensation, organ failure, and medical-devices.
- Effective HAPI prevention strategies include pressure redistribution surfaces, frequent repositioning, nutritional interventions, and moisture and incontinence management.
- Since 2012, prophylactic silicone-coated foam dressings have become a popular sacral HAPI prevention strategy.

PURPOSE

To evaluate the evidence related to effectiveness of silicone-coated foam dressings on prevention of sacral HAPI and inform the decision about immediate translation into practice vs. need for original research.

Johns Hopkins Model for Evidence-Based Practice Practice Question, Evidence, and Translation (PET)

(Dearholt & Dang, 2015)

Practice Question

Evidence

Translation

PRACTICE QUESTION using the PICO method:

P – Problem/Population: Design an answerable question

I – Interventions:

C – Comparisons: Main alternative you are considering

O – Outcomes: Results of what you plan to accomplish, improve, or affect

METHODS

PICO question:

As compared to Mepilex foam dressings (C), are Allevyn Life foam dressings (I) as effective at preventing sacral PI (O) in critical care patients (P) ?



**MEPILEX
Border
Dressing
Sacrum**



**Allevyn
Life
Sacrum
Dressing**

EBP team members (7)

- Blake 12: Attending nurses (2), Nursing Director
- Ellison 4: Attending nurse (1), Clinical Nurse Specialist (CNS), Nursing Director
- PCS Institute for Patient Care: CNS/Nurse Scientist/ EBP Co-Lead

Databases searched:

- CINAHL
- Ovid Nursing
- Medline
- Embase.

Clusters of Key Words:

1. ICU, critical care, critically ill, SICU
2. Mepilex, Molnlycke, foam AND dressing, silicone AND foam AND dressing
3. Allevyn, Smith & Nephew, foam AND dressing
4. pressure ulcer, decubitus ulcer, and decubiti.

RESULTS

Four of 31 citations were selected for inclusion:

- Two high quality Level I studies demonstrating significantly lower sacral HAPI incidence in critical care patients treated with prophylactic Mepilex foam dressings vs. no dressing (Santamaria, et. al, 2015, Kawoles, 2016)
- Two Level II studies demonstrating lower incidence of sacral HAPI in critical care patients treated with either prophylactic Allevyn Life foam or Mepilex foam, respectively, vs. historical controls without dressings (Chaiken, 2012, Byrne, et. al. 2016)

CONCLUSIONS

Four Level I and II studies demonstrate effectiveness of silicone-coated foam dressings for prevention of sacral PI.

IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

Available evidence is limited but supports utilization of silicone-coated foam dressings for prevention of sacral PI. Future research needs to provide more evidence for clinical application

Johns Hopkins Tools

(Dearholt & Dang, 2015)

Appendix H: Synthesis and Recommendations Tool

EBP Question:
Date:

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
Level I Experimental Random Systems meta-an			
Level II Quasi-			

Appendix G: Individual Evidence Summary Tool

EBP Question:
Date:

Article #	Author & Date	Evidence Type	Sample, Sample Size & Setting	Study findings that help answer the EBP question	Limitations	Evidence Level & Quality

Appendix F: Non-Research Evidence Appraisal Tool

Evidence Level & Quality: _____

Article Title: _____ Number: _____

Author(s): _____

Journal: _____

Does the question: _____

Author(s): _____ Publication Date: _____

Journal: _____

Setting: _____ Sample (Composition & size): _____

Appendix E: Research Evidence Appraisal Tool

Evidence Level and Quality: _____

Article Title: _____ Number: _____

Author(s): _____

Journal: _____

Does the question: _____

Author(s): _____ Publication Date: _____

Journal: _____

Setting: _____ Sample (Composition & size): _____

REFERENCES

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- Chaiken N. Reduction of sacral pressure ulcers in the intensive care unit using a silicone border foam dressing. J Wound Ostomy Continence Nurs. 2012;39(2):143-145. (Level II)
- Dearholt SL, Dang D (Eds). Johns Hopkins Nursing Evidence-Based Practice: Model and Guidelines (2nd Ed.) 2015; Indianapolis, IN: Sigma Theta Tau International.
- Kawoles P, Messina V, Li M. Five-layered soft silicone foam dressing to prevent pressure ulcers in the intensive care unit. AJCC, 2016;25 (6): e108-e119. (Level I)
- Santamaria,N, Gerdtz,M, Sage,S, McCann,J, Freeman,A, Vassiliou,T, De Vincentis,S, Ng,A,W, Manias,E, Liu,W, Knott,J. A randomised controlled trial of the effectiveness of soft silicone multi-layered foam dressings in the prevention of sacral and heel pressure ulcers in trauma and critically ill patients: the border trial. International Wound Journal 2015;12(3): 340-345. (Level I)