

Retrospective analysis of wound management and pressure injury prevention performance outcomes from using a non-adhesive foam dressing as part of an integrated care bundle

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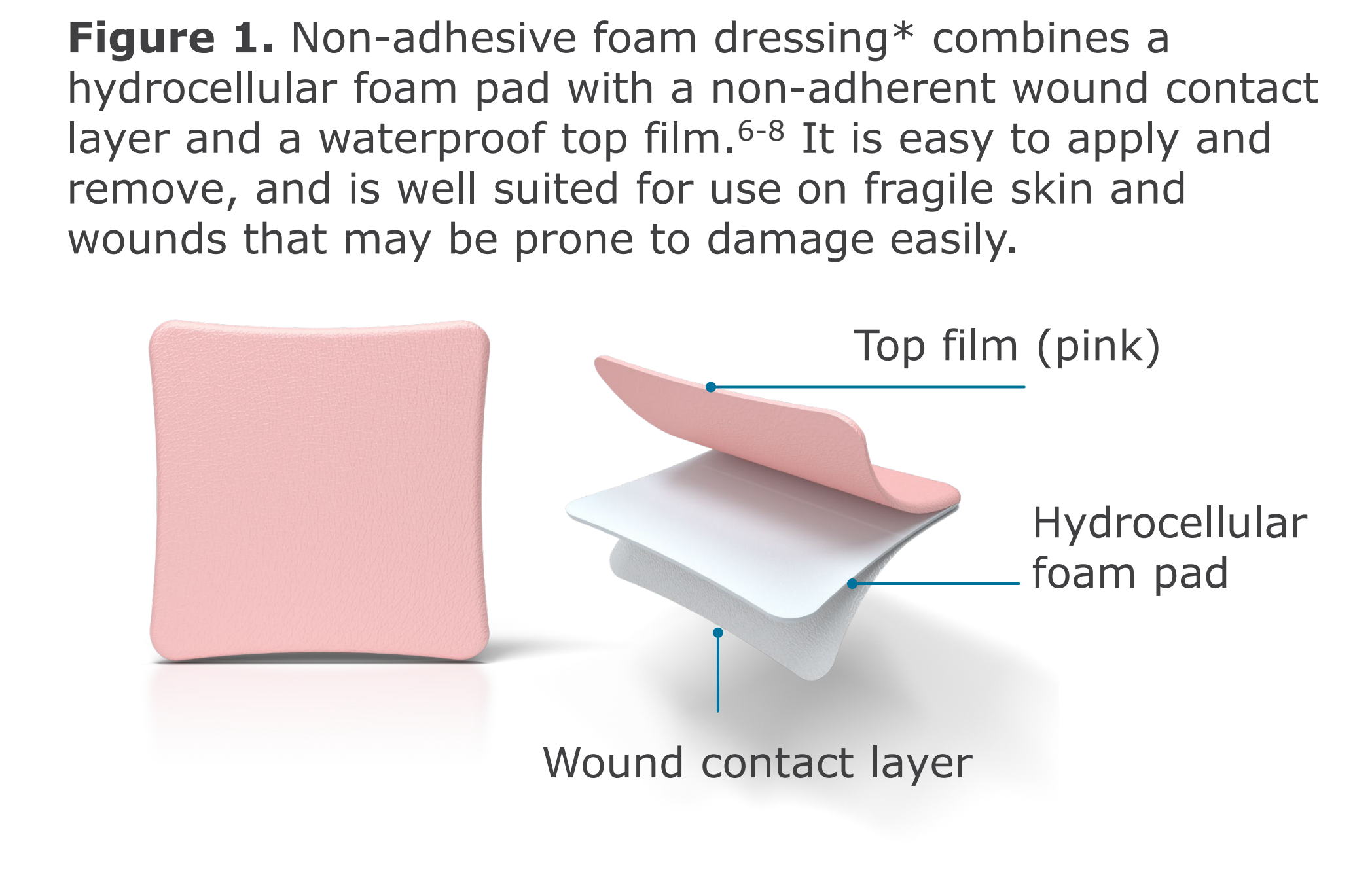
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Introduction

- Delayed wound healing can negatively impact patient wellbeing and quality of life¹ as well as consume significant healthcare resources²
- One way to address this is by using integrated care bundles (ICBs) – combinations of evidence-based interventions (usually 3–5) used in simple care pathways
- ICBs are being implemented for chronic wounds to help standardize approaches to wound management and to make it easier to identify wounds that may require specialist consultation³

Objectives

- A retrospective analysis to evaluate the impact of ICB implementation over a 2-year period at community care access centers (CCAC) in Ontario, Canada, specifically focusing on ICBs with a non-adhesive foam dressing* (Figure 1)



Methods

- Real-world anonymized patient data from two large CCACs was collected by Nursing Practice Solutions Inc. (Dec 2015 to Mar 2018)
- Adult patients with chronic wounds were included
- STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines were applied; Ethics approval was granted by D'Youville University (NY, USA)
- Participating clinicians were educated on the available treatments; they could opt not to use an ICB
- Electronic medical records were analysed based on whether or not patients received an ICB with the non-adhesive foam dressing*
- Data were collected every 3 weeks during nursing visits, or weekly for wounds not healing as expected
- Baseline characteristics, comorbidities (Charlson index⁴), and wound severity (BWAT;⁵ high scores suggest poor wound status) were recorded

Results

Healing outcomes

- Overall, 4,421 patients received an ICB and 2,242 did not
- In the ICB group mean age (60 vs 57 years) and mean comorbidity index (2.91 vs 2.40) were slightly higher than in the non-ICB group
- Mean number of days between dressing changes was longer (>1 day) using an ICB than for those who did not receive an ICB (3.08 vs 1.87 days; Table 1)
 - Lowest for VLU (+0.61 days) and highest for surgical wounds (+2.14 days)
- Mean time to healing/closure was shorter using an ICB than without an ICB (12.72 vs 25.49 weeks; Table 1)
 - Greatest differences for VLU and PU/PIs (Figure 2)

Table 1. Wound healing outcomes and costs with and without use of an ICB.

Population/ wound type	Use of ICB	Patients (n)	Mean time to dressing change (days)	Mean time to healing/ closure (weeks)	Mean BWAT Score	Mean labor cost to healing (CAD\$) [†]
All wounds	Yes	4,421	3.08	12.72	27.36	1,766
	No	2,242	1.87	25.49	33.20	6,488
DFUs	Yes	871	3.36	18.09	35.35	2,564
	No	179	2.04	28.08	32.40	6,552
PU/PIs	Yes	1,567	3.21	12.34	26.43	1,829
	No	309	2.14	31.63	34.00	7,035
VLUs	Yes	680	2.68	14.50	28.95	2,578
	No	708	2.07	34.18	36.90	7,860
Burns	Yes	104	3.66	5.33	22.74	692
	No	27	1.89	12.59	40.20	3,171
Surgical wounds	Yes	1,199	3.75	7.38	22.27	938
	No	1,019	1.61	17.47	35.20	5,165

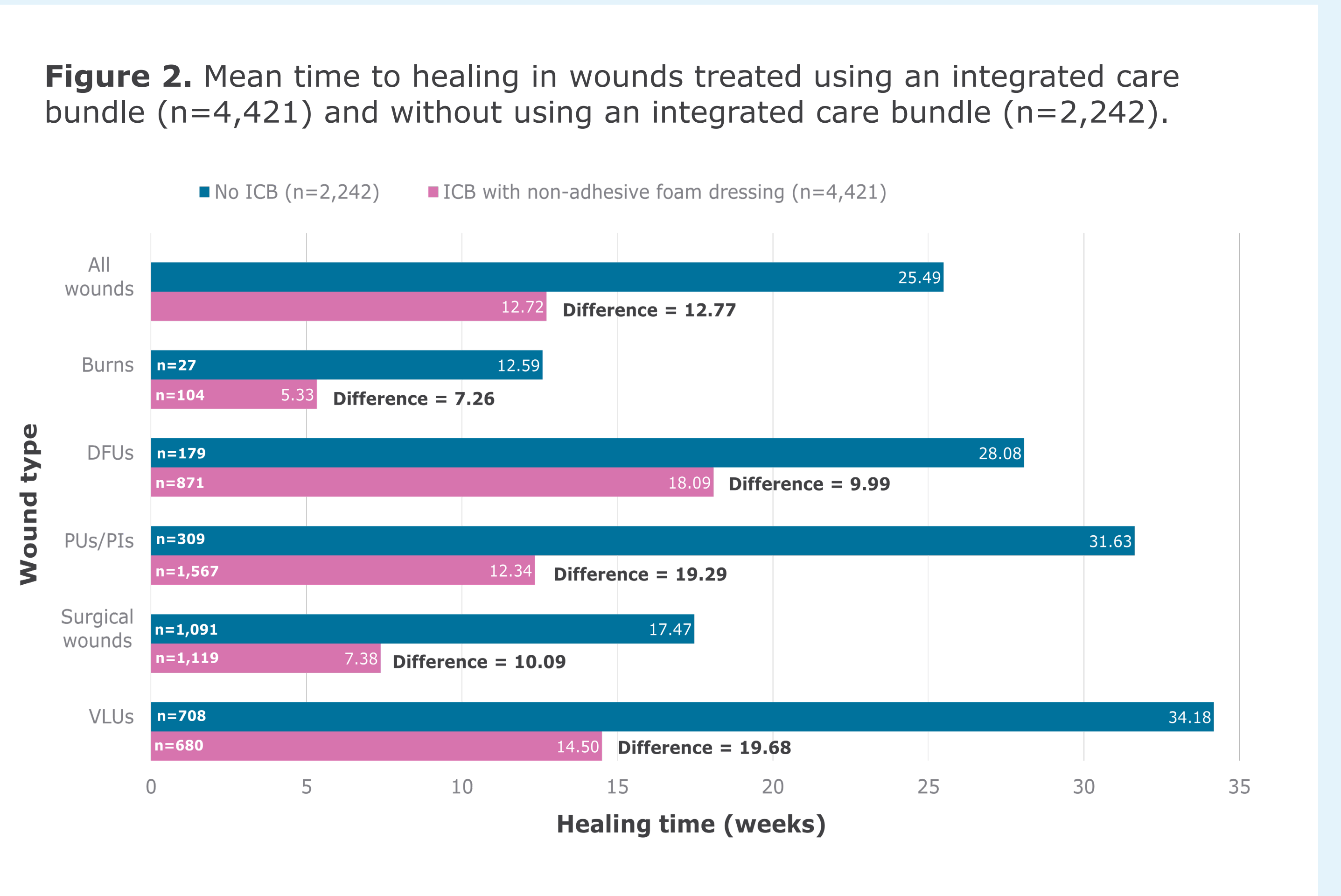
[†]Costs for visits by a registered nurse/practice nurse to perform dressing changes were estimated based on a mean cost per visit of \$68.00 (direct payment to the nursing agencies per visit excluding costs of consumables).

Cost analysis

- Mean total labour cost was CAD \$1,766 per patient for wounds managed using an ICB compared with CAD \$6,488 for those whose wounds were not managed with an ICB – a difference of CAD \$4,722 (72.8%; p<0.05; Table 1)

Other outcomes

- For 466 patients who received an ICB for pressure injury prevention within the acute care setting, 98.4% (range: 92.8–100%) achieved their treatment goal and no adverse events were reported
- For all wound types, the incidence of adverse events was lower using an ICB than for patients who did not receive an ICB
- No adverse events were reported with non-adhesive foam dressings used in an ICB



Conclusion

Integrated care bundles can help to relieve the burden of wound care by reducing management costs whilst improving clinical outcomes as part of a program of broader initiatives. Further evaluation of the benefits of wider adoption of this strategy in wound care is warranted.

References

- Vogt TN, et al. *Invest Educ Enferm.* 2020;38(3):e11.
- Guest JF, et al. *BMJ Open.* 2020;10:e045253.
- Hurd T, Murdoch J. *JCN.* 2023;37(2):38-44.
- Charlson ME, et al. *J Chronic Dis.* 1987;40(5):373-83.
- Bates-Jensen BM, et al. *Wound Repair Regen.* 2019;27(4):386–395.
- Leonard S, et al. *Wounds UK.* 2009;5(1):17-28.
- Kurring PA, et al. *BJN.* 1994;3(20):1049-1050, 1052-1043.
- White R, et al. *Wounds UK.* 2007;3(4):121.

Abbreviations

BWAT = Bates-Jensen Wound Assessment Tool; CAD = Canadian dollar; DFU = diabetic foot ulcer; ICB = integrated care bundle; PI = pressure injury; PU = pressure ulcer; VLU = venous leg ulcer