

Cyanoacrylate Liquid Skin Protectant (CLSP) used for the Prevention of Pressure Injuries

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INTRODUCTION

- Foam and gel dressings are often used to protect against pressure injuries (PIs) however, repetitive dressing removal can cause trauma to the skin.¹
- Hospital acquired pressure injuries (HAPIs) occur in 3 to 34% of patients admitted to the hospital, lead to longer hospital stays, increased morbidity, and decreased overall quality of life.²
- PIs affect approximately 2.5 million patients in the United States annually at a cost of approximately \$26.8 million.³
- Cyanoacrylates have been shown to reduce friction and provide an effective skin barrier.⁴

OBJECTIVE

To evaluate and compare two cyanoacrylate liquid skin protectants (CLSP1)* and (CLSP2)** for the prevention of pressure injuries (PIs) in patients with a Braden Score of ≤12.

METHODS

- Three post-acute rehab facilities (A,B, and C) located in the Midwest were included in a study that compared the prevention of PIs using standard of care (baseline during 2021), a first CLSP (CLSP1 during 2022), and a second (CLSP2 during 2023 (January-June). For Facility C, data was only collected for years 2022 and 2023.
- Poisson regression modeling with vice robust standard errors were run to examine the association between the year, PI counts and goodness of fit.

CLSP1 *Cavilon, 3M Healthcare, Saint Paul, Minn

CLSP2 **Marathon™; Medline Industries Inc., Northfield, IL

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Facility	Treatment	Year	Total	%Decrease
A	Baseline	2021	95	NA
	CLSP1	2022	67	0%
	CLSP2	2023	30	55%
B	Baseline	2021	33	NA
	CLSP1	2022	29	0%
	CLSP2	2023	25	14%
C	Baseline	NA	NA	
	CLSP1	2022	17	NA
	CLSP2	2023	8	53%

Table 1. Facility A,B, and C. occurrence of Pressure Injuries comparison from Baseline to 2023

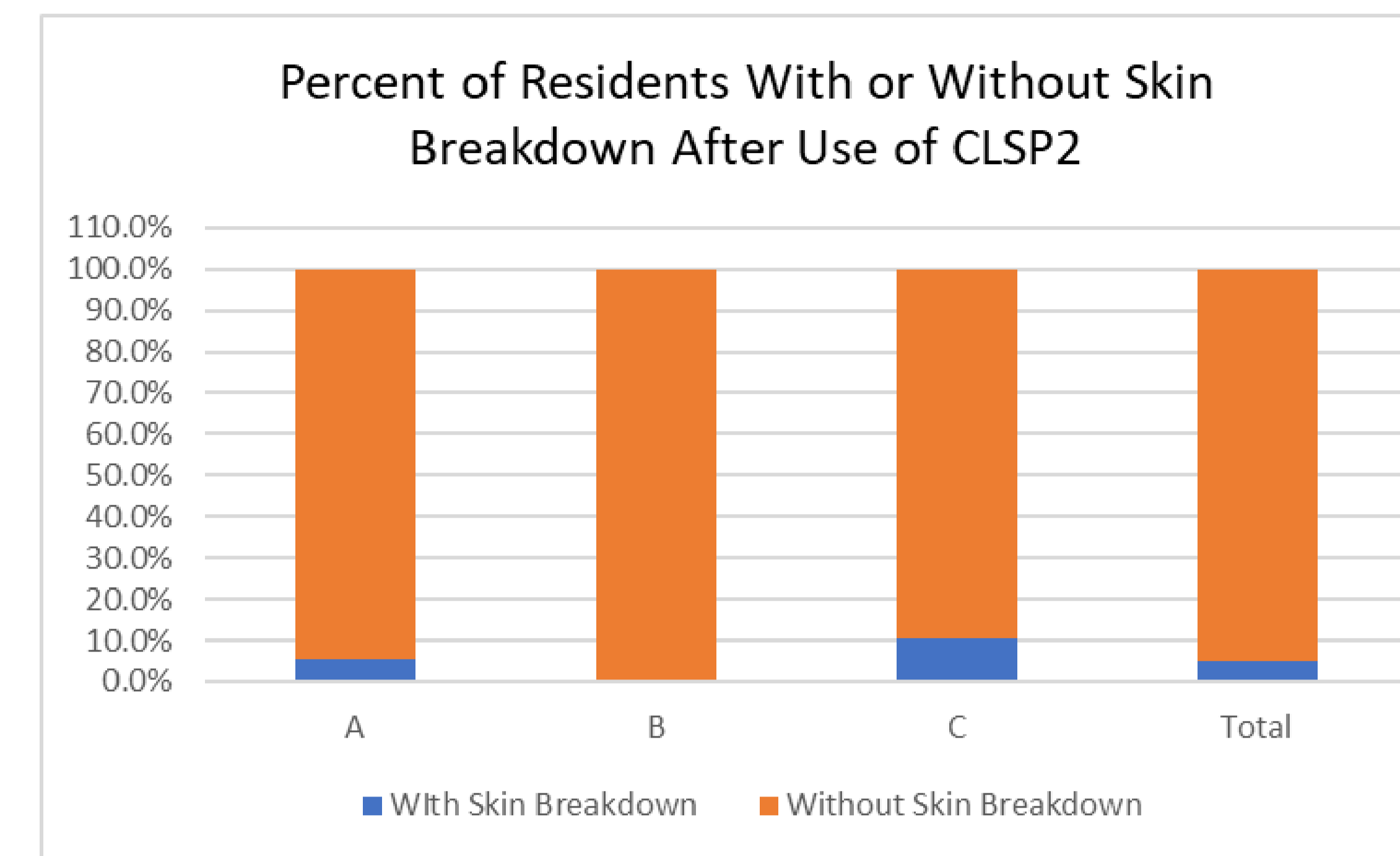


Figure 1. Compliance Rate: Percent of Residents With or Without Skin Breakdown After Use of CLSP2

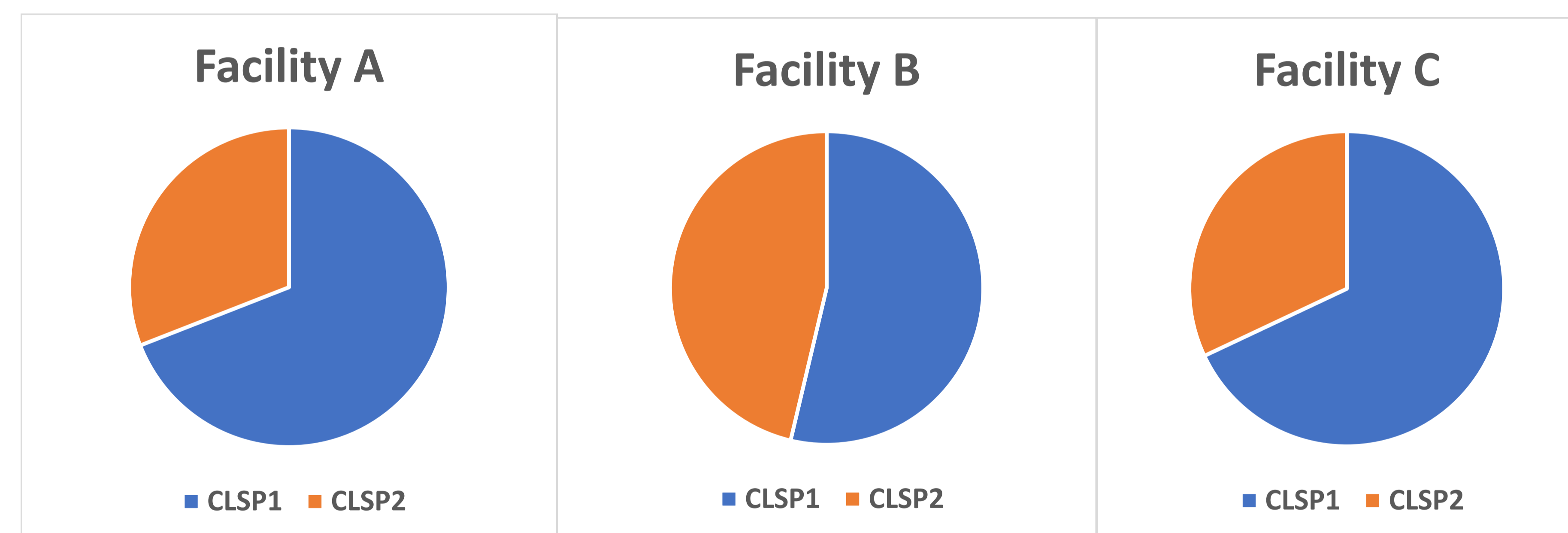


Figure 2. Facility A,B, and C. Occurrence of Pressure Injuries Comparison During 2022 and 2023

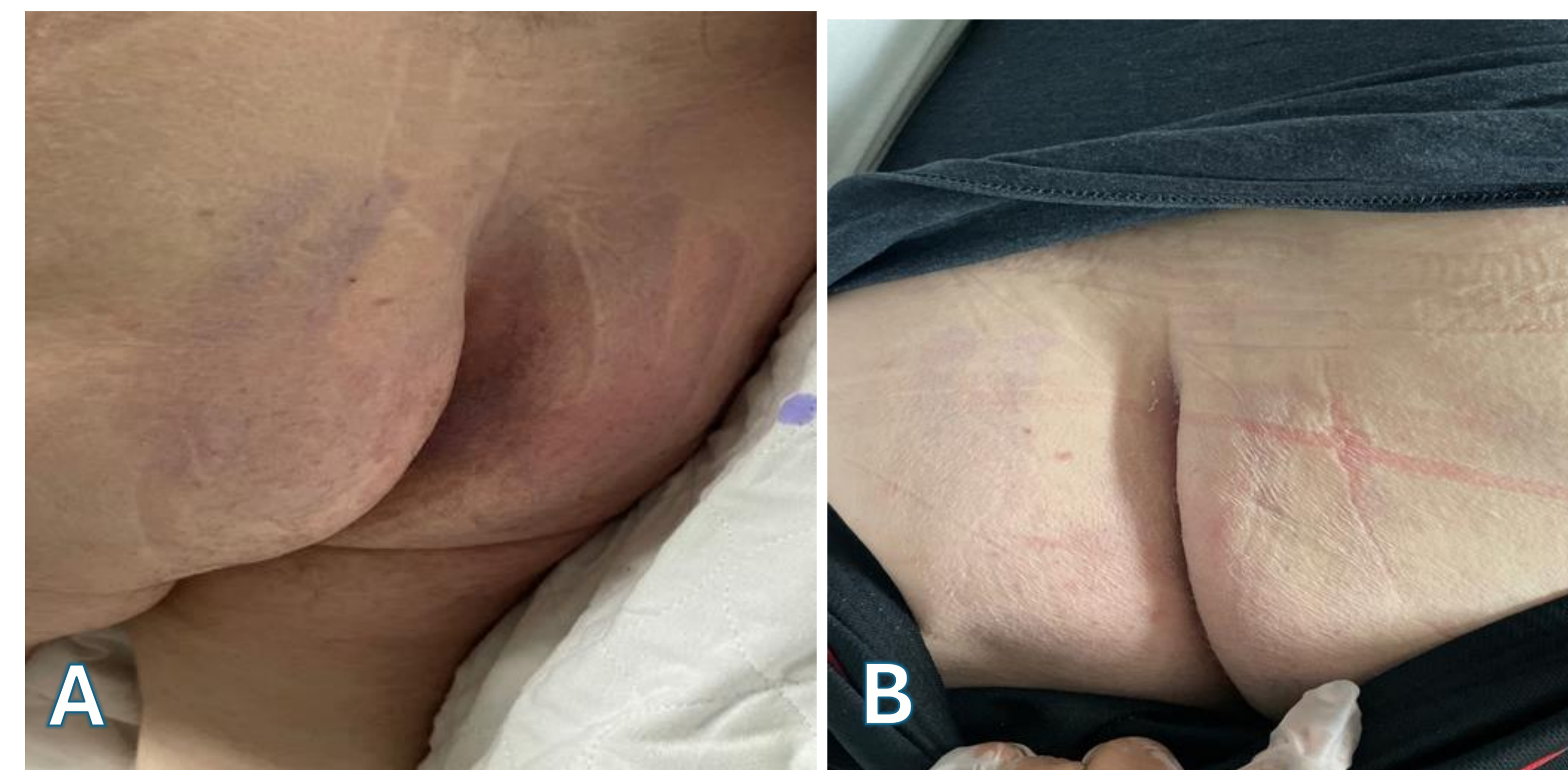


Figure 3. Post-Acute care patient following colorectal surgery, ostomy take down, proctectomy, and urethral fistula with an initial pressure injury Braden Score of 12. Images shown A) during last week of CLSP2 application with a lower Braden Score and B) at Week 1 post-CLSP2 application

RESULTS

- All three facilities showed a significant decrease ($p < 0.0001$) in PI counts over the three-year period.
- Facility A decreased from baseline HAPI counts of 95 in 2021 to 67 in 2022 and 30 in 2023. (**Table 1**).
- Facility B decreased from a baseline count of 33 to 29 in 2022 and to 25 in 2023. (**Table 1**)
- Facility C decreased significantly from 2022 with a count of 17 down to a count of 8 in 2023. (**Table 1**).
- Following implementation of the PI prevention protocol using CLSP2, the facilities averaged a 95% compliance rate (**Figure 1**).
- The occurrence of PIs was fewest in 2023 when using CLSP2 compared to CLSP1 in 2022 (**Figure 2**)
- The facilities nursing staff preferred the use of CLSP2 because it could be seen on the skin and stayed in place for up to seven days. (**Figure 3**)
- CLSP2 was less bulky and more cost effective than foam dressings for longer stay patients.

CONCLUSION

- We conclude from this study that CLSP2 can be used to prevent PIs in post-acute care patients with Braden Scores of ≤12.
- The use of CLSP2 allowed the nursing staff to visualize the application on the skin and assess for PIs for up to seven days without daily removal of the dressing.

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