

## Author

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# Tissue Adhesive "The Talk of the Town"

The aim of the project was to determine if Tissue Adhesive (TA) application at the post insertion PICC site, would eliminate the 48 hr. dressing change.

## Acknowledgements

- Tiffany Mendez and Maha Naicker: RN's of the PLC - AVAS/HPTP team. Helped to accomplish another "Best Standard of Care".
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- Andrea Green: Nurse Educator - PLC - Calgary, AB. Specialty clinics that worked with all the educators

### 1. Background

PICC dressing - an extremely important procedure that takes into consideration sterile technique and infection control. The first dressing at the time of PICC insertion is crucial; it is at this step, "that sterility can be achieved which decreases the risk of Catheter Associated Blood Stream Infections (CABSI)".<sup>1,2</sup>

Nursing staff are challenged on a daily basis and do their best with the limited resources available to them. Some nurses follow old protocols of doing PICC dressings within 24 hrs. and not the recommended 48 hrs. as per AHS Clinical Care Topics and CVAA guidelines.<sup>2</sup>

"Implementing Tissue Adhesive, as an adjunct to the initial transparent dressings and securement, provides immediate hemostasis at the insertion site, and prolongs the interval between the PICC insertion dressing and the initial dressing change and can therefore be done every 7 days or when compromised."<sup>1</sup>

### 2. Hospital Administration Buy In

1. Drafted a proposal which included benefits and cost saving analysis. This was presented to our management team, the director of the program, and hospital administration.
2. Presented the advantages of utilizing TA in all our PICC insertions that would benefit our clients.<sup>3</sup>
3. Decrease nursing workload while increasing visualization of the PICC exit site.
4. Elimination of the first 48 hr. dressing change.
5. Closure at the insertion site once hemostasis achieved.
6. Worked in close collaboration with the nurse educator to facilitate the dissemination of information and change of process to all in/out patient units.

### Comparison of TA and Initial PICC Dressing Change

Cost of TA	1 TA	Nurse's Time 1 HR.	\$48.00
\$387.50 /50	\$7.75	Supplies Req'd	\$8.47
		<b>Total</b>	<b>\$56.47</b>

### PLC-Potential Annual Savings Analysis - 500 PICC's

	Cost	Total
PICC Dressings	\$56.47	\$28,235.00
TA Application	\$7.75	\$3,875.00
<b>Savings</b>		<b>\$24,360.00</b>

### 3. Methodology

The Advanced Venous Access Services (AVAS) team at the PLC (600+ adult/pediatrics beds), conducted a six week trial starting November 21, 2022.

**Selection criteria:** patients 18+ years that required a PICC line for venous access, total parenteral nutrition, antibiotics, and chemotherapy for 1 to 6+ weeks. This also included patients that went home on the Home Parenteral Therapy Program.

**Exclusions:** clients that were on a heparin infusion or who were anticoagulated with an INR of > 5. If hemostasis was not achieved (after step #4 of "Steps of TA Application") TA was not applied.

The AVAS nurses followed up with the patients within 48-72 hrs. post insertion, to see the progress and assess the exit site.

### 4. Primary Outcome - 2 weeks

We were initially very disappointed as we did not see any improvement. There was still bleeding at the exit site.



INCREASED BLEEDING AT THE EXIT SITE AND AROUND THE SECURACATH IN 24-48 HRS.

### 5. Paused to Re-Evaluate Process

Why were we having so many issues despite using TA?

1. Staff were not informed or educated regarding TA application, therefore unscheduled dressing changes were being done. We realized that we needed to redo an e-mail blitz to all the units and do impromptu teaching.
2. Considered not doing a Dermatotomy; this posed concerns to some members of the AVAS team.

Concerns brought forward:

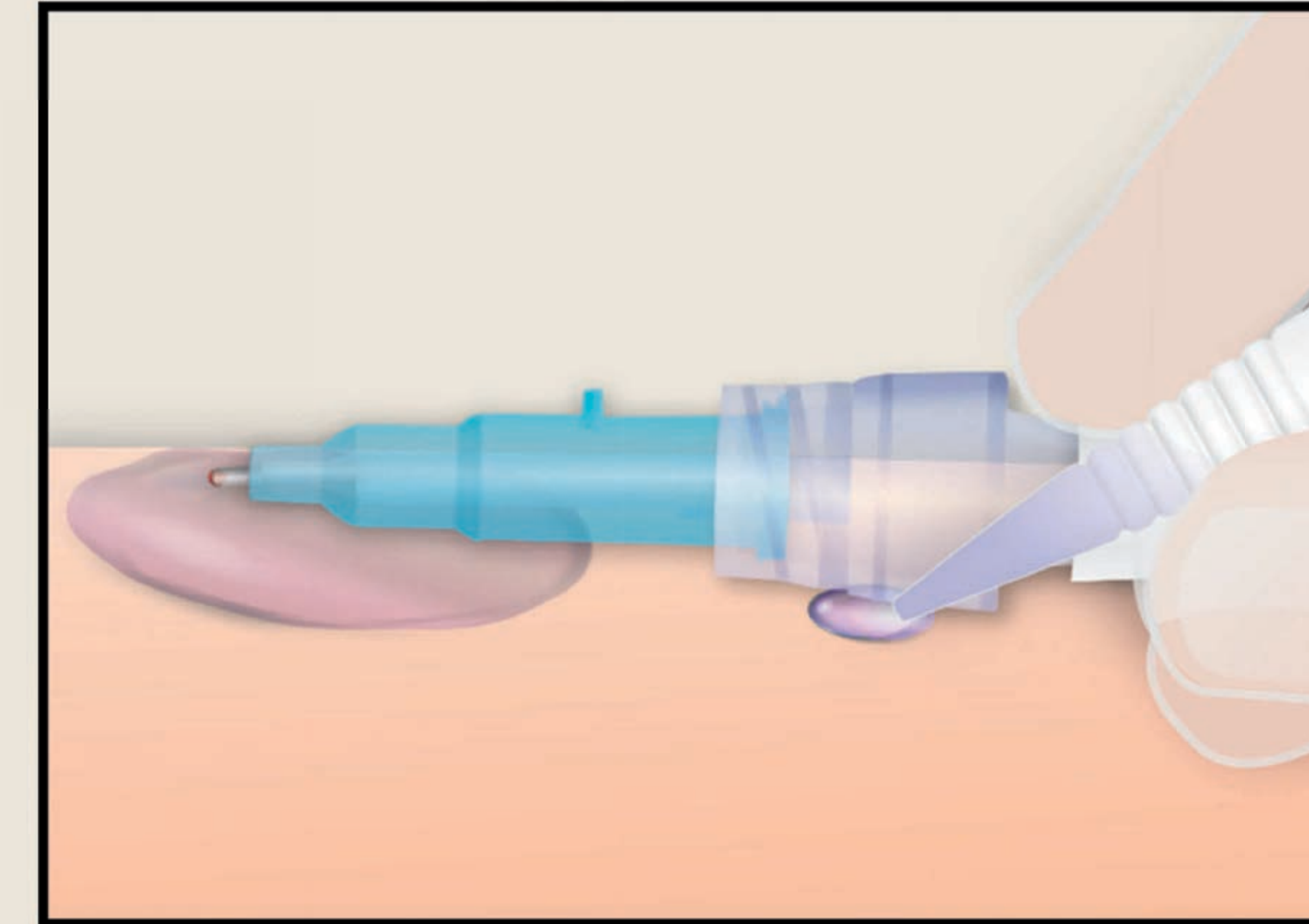
- It would increase trauma to the surrounding tissues.
- Increase mechanical manipulation at the insertion site.
- Move from a one-step dilation to a two-step process.
- Some of the peel away sheaths bent/sheared at the very edge.

### 6. Change of Practice

*Understand the rationale for not doing a Derm.*

Dermatotomy: a surgically incised wound made for vascular access insertion. "This provides a direct route for pathogen entry into the body and exit site for blood and capillary fluid."<sup>4</sup>

To eliminate dermatotomy, we needed to do a steady and smooth dilation by holding the tissue firm. Eventually, the transition was successful and, as the saying goes, "practice makes perfect."

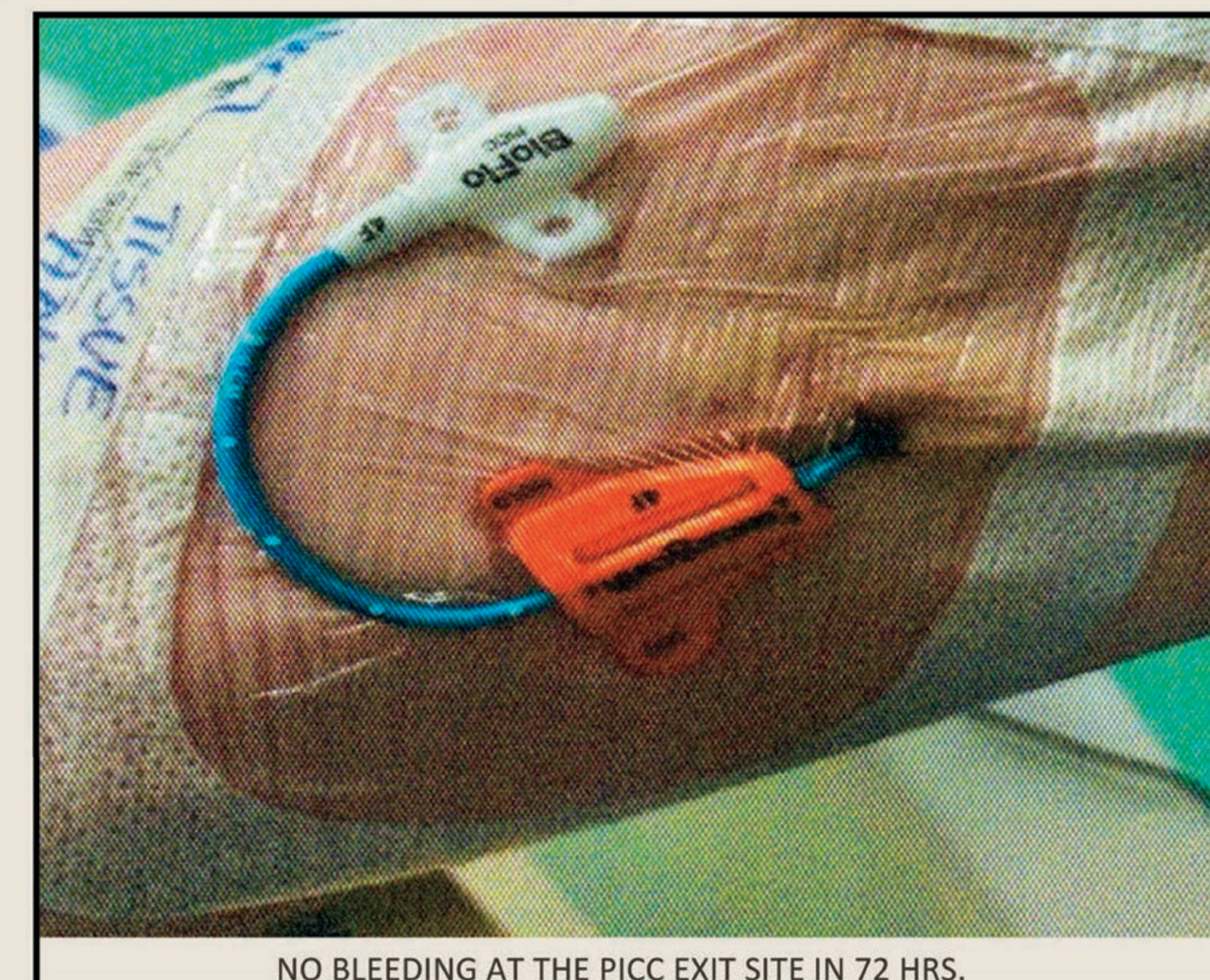


### STEPS FOR TA APPLICATION: \*

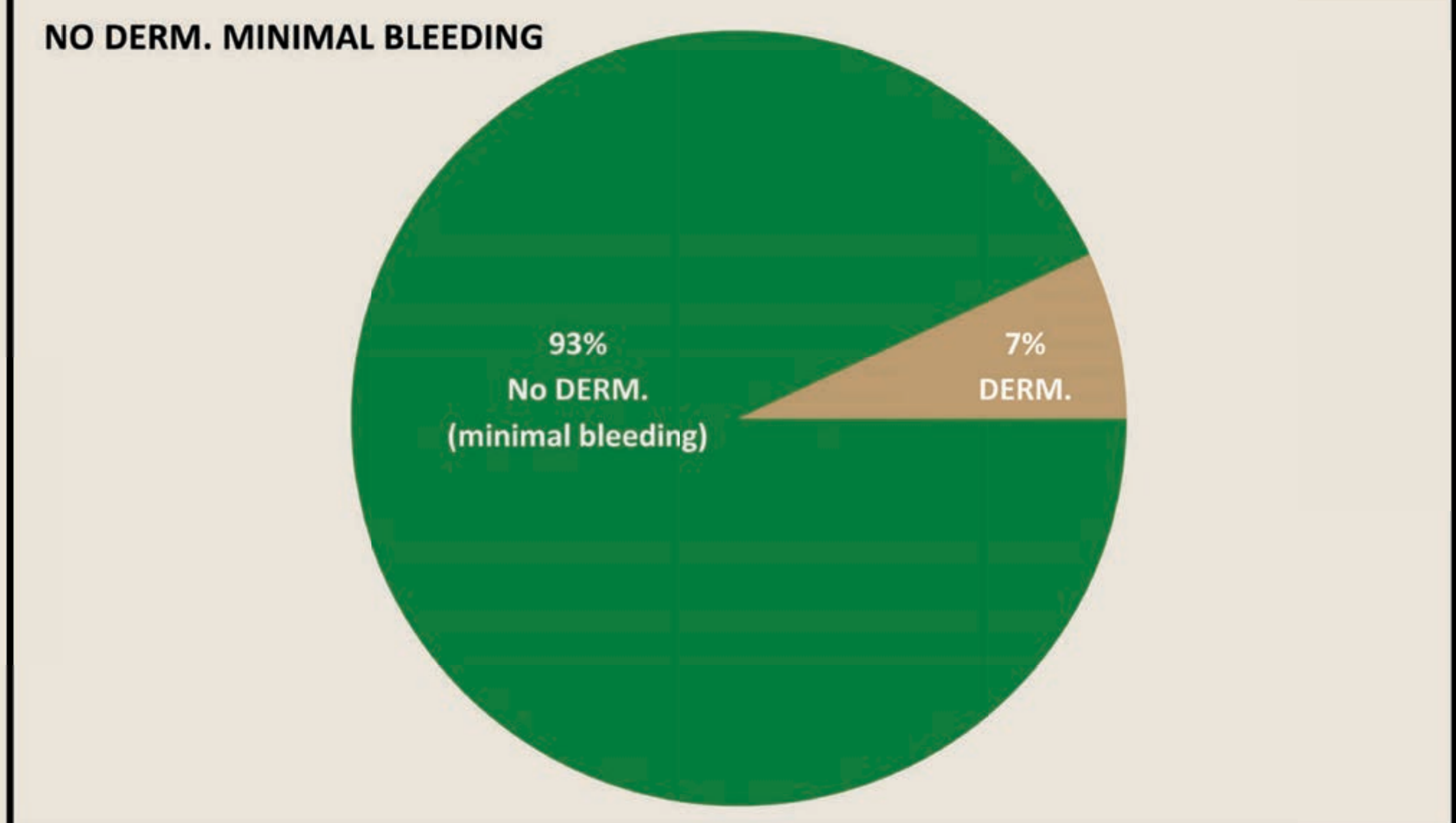
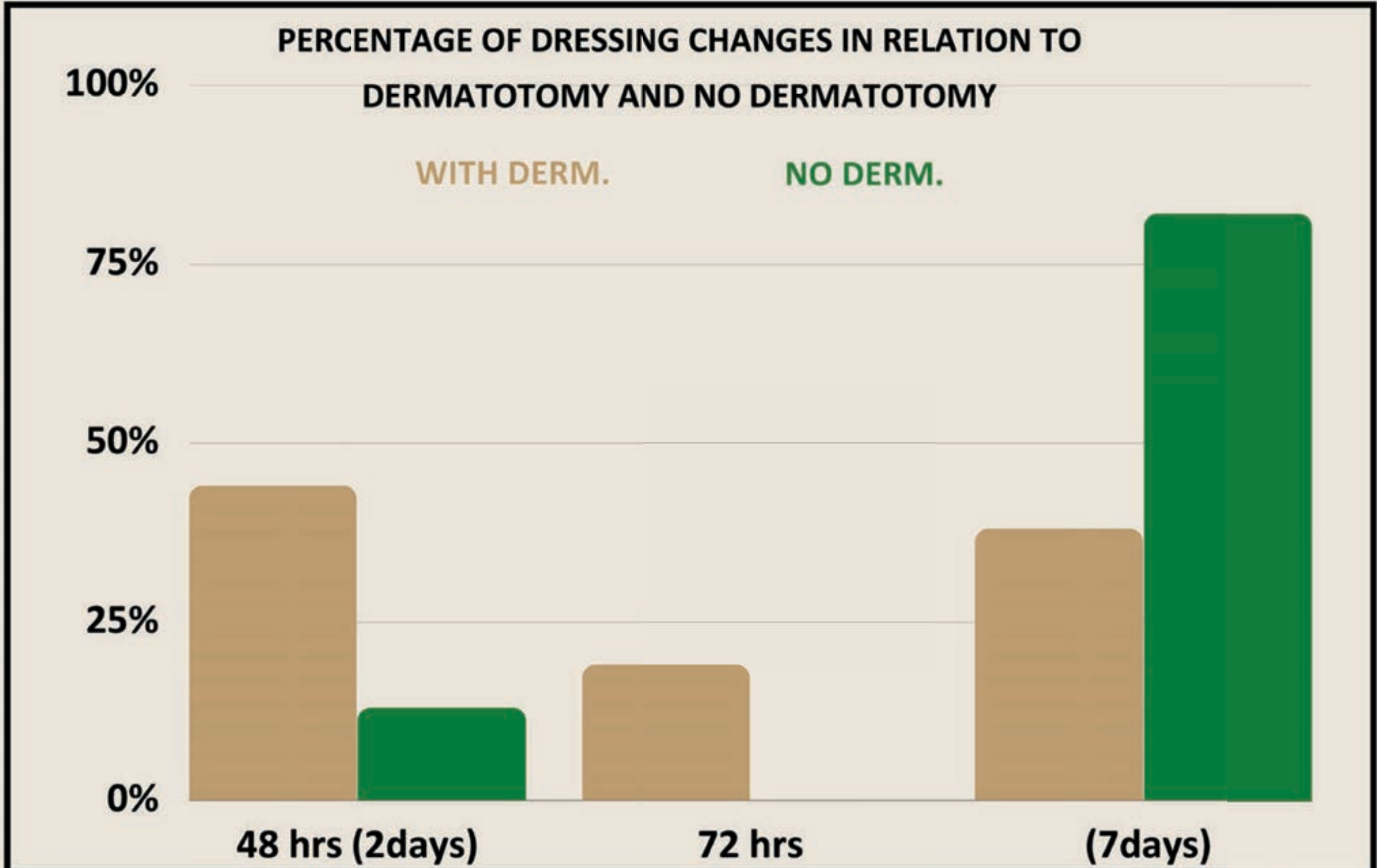
1. Insert inner dilator - WITHOUT DERM. (Separate from sheath first).
2. Then insert with peel away sheath. Insert PICC, peel away sheath, and remove.
3. Insert SecurAcath: DO NOT CUT. If having trouble with SecurAcath, use inner dilator again under the PICC to open the exit site a bit more; deeper not wider.
4. Apply pressure to site with 2x2 gauze for 3 minutes, until hemostasis is achieved.
5. Add drops of TA, wait 10 - 15 seconds. Make sure you have positioned the PICC and SecurAcath where you want it. Do not move once TA is applied.
6. Apply Tegaderm. Document the date and use of TA.
7. Application of Coban (max. 2 hrs.) if warranted, as per hospital policy.

### 7. Secondary Outcomes - 4 weeks

The AVAS team re-evaluated and noticed a change in the results as depicted in the picture shown below and subsequent graphs.



NO BLEEDING AT THE PICC EXIT SITE IN 72 HRS.



### 8. Conclusion

Tissue Adhesive is definitely the "Talk Of The Town." Nurses are buzzing about this new process. TA brings a newfound appreciation for limiting unnecessary dressing changes, the prevention of bleeding, oozing and infections, along with time and cost savings. By understanding how TA works, new possibilities are there for us to explore and share with members of healthcare teams and its usage in other line placements. The use of TA at the point of line insertion, is the NEW standard of care that promotes "Best Practice". It is one of the four recommended securement devices by INS 2021.<sup>1</sup>

### Limitations:

Further research for patients on Heparin infusion and with an INR > 5 is required. Issues with poor dressing adherence and diaphoretic patients were identified.

### 9. References

1. Infusion Nurses Society (2021) *Infusion Therapy Standards of Practice*, 8th Edition. J Infus. Nurs. 44(S1-S224) / 38(S108-S110) / 42(S119-S120)
2. Canadian Vascular Access Association (2019) *Infusion & Therapy Guidelines*. 14(28)/ 15 (29-30)
3. Adhesion Biomedical LLC (IFU). SPI-IFU01-1903.June2019. www.SPIVTraining.com
4. Moureau NL. *Vessel Health and Preservation: The Right Approach for Vascular Access*. Vol 1. Springer International Publishing; Dilators can be obtained from Teleflex. (Unable to comment as not used in the trial)