

Removing the complexities associated with traditional negative pressure wound therapy (tNPWT) bridging applications

Mark E. Chariker M.D. PSC, Catherine McCarthy BSc (Hons), PGDip, DN, RN, Joanne Handsaker RGN, PG Dip, Mandy Spitzer, MBA, RN, CWOCN, CFCN.

Significance

Traditional Negative Pressure Wound Therapy (tNPWT) is an effective intervention for challenging wounds, across multiple indications¹⁻³. Its application sometimes requires a 'bridging' technique, to prevent ulcerations caused by the delivery port and tubing when positioning the device⁴, requiring extra time and resources^{4,5}.

Objectives

Primary objectives were to explore HCP opinion on two types of tNPWT port ('soft port'* and 'hard port').

Methodology

A survey was undertaken by two hundred healthcare professionals (HCP) in the United States, experienced in utilizing tNPWT and bridging. Primary objectives were to explore HCP opinion on two types of tNPWT delivery ports ('soft port' and 'hard port') between two leading manufacturers. Questions focused on the need for bridging, alleviation of complexity in application and reducing concerns relating to medical device-related pressure injuries (MDRPI), when applied to awkward anatomical areas.

*RENASYS® Soft Port, Smith and Nephew, Hull, UK

References:

1. Borys S, Hohendorff J, Frankfurter C, Kiec-Wilk B, Malecki MT. Negative pressure wound therapy use in diabetic foot syndrome — from mechanisms of action to clinical practice. *European Journal of Clinical Investigation*. 2019;49(4):e13067.
2. Apelqvist J, Willy C, Fagerdahl A-M, et al. EWMA document: negative pressure wound therapy: overview, challenges and perspectives. *Journal of wound care*. 2017;26(Sup3):S1–S154.
3. Brownhill VR, Huddleston E, Bell A, et al. Pre-clinical assessment of single-use negative pressure wound therapy during in vivo porcine wound healing. *Advances in Wound Care*. 2021;10(7):345–356.
4. Fife C, Weir D. The challenges of negative pressure wound therapy in clinical practice. *Online Journal Today's Wound Clinic*. 2010;4(6).
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Outcomes

HCPs (75%; n=150) agreed that the bridging technique makes tNPWT application slightly more challenging. Reasons included:

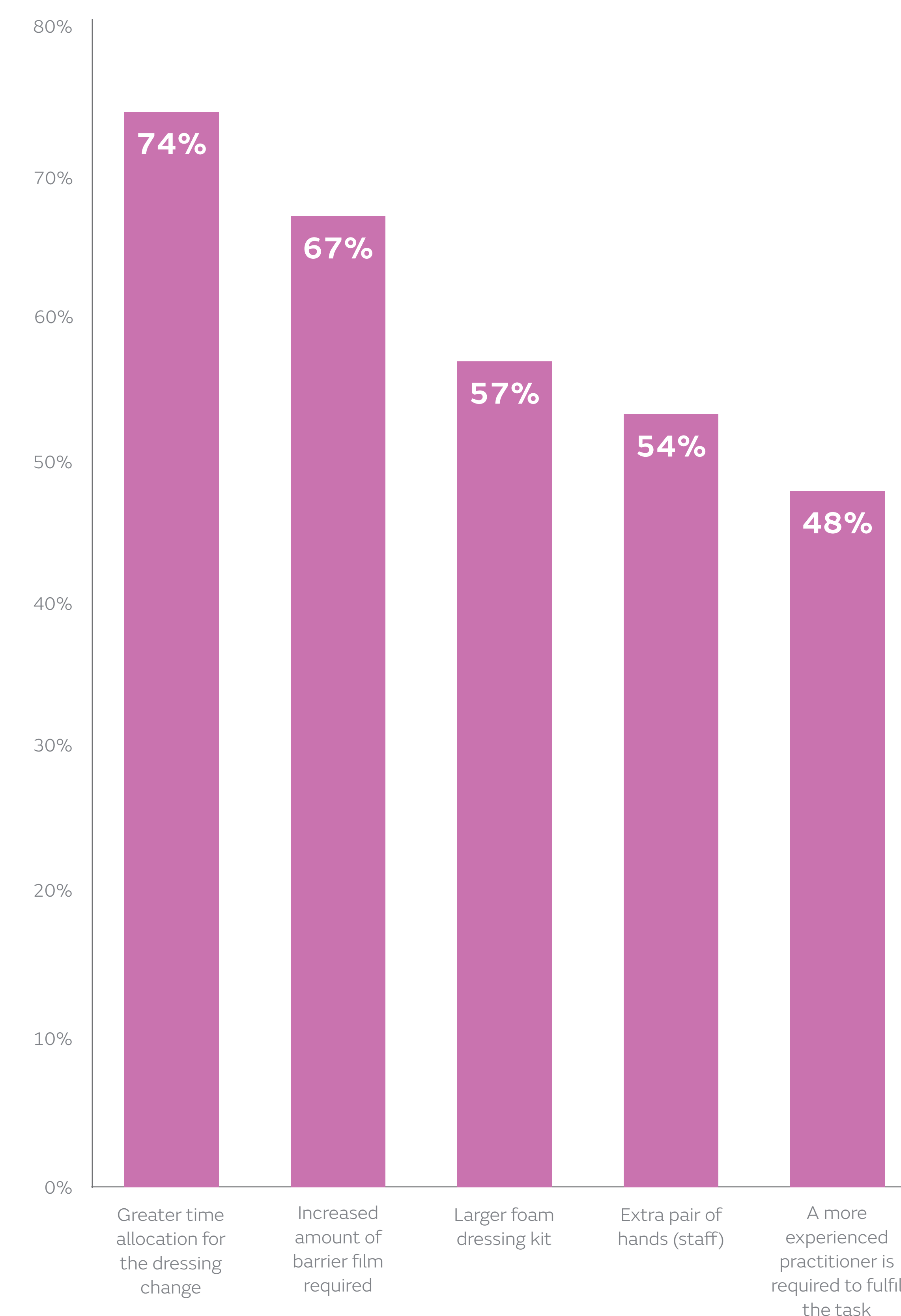
- additional time taken to apply (74%; n=148)
- increased dressing resource (67%; n=134)
- additional staff required (50%; n=100).

Over half (53%; n=106) agreed that the 'soft port' can eliminate the need for bridging. Wound Specialists were significantly less likely to favor a 'hard port' (58%; n=116).

Further potential benefits of using a tNPWT 'soft port' highlighted include a risk associated with pain/pressure when applying a 'hard port' over a smaller wound size (29%; n=58) and certain anatomical areas which pose a risk of pressure injury and/or kinked/twisted tubing (31%; n=62).

Bridging Technique — Impact on Resources 'Does having to bridge incur further resources in the clinical setting?'

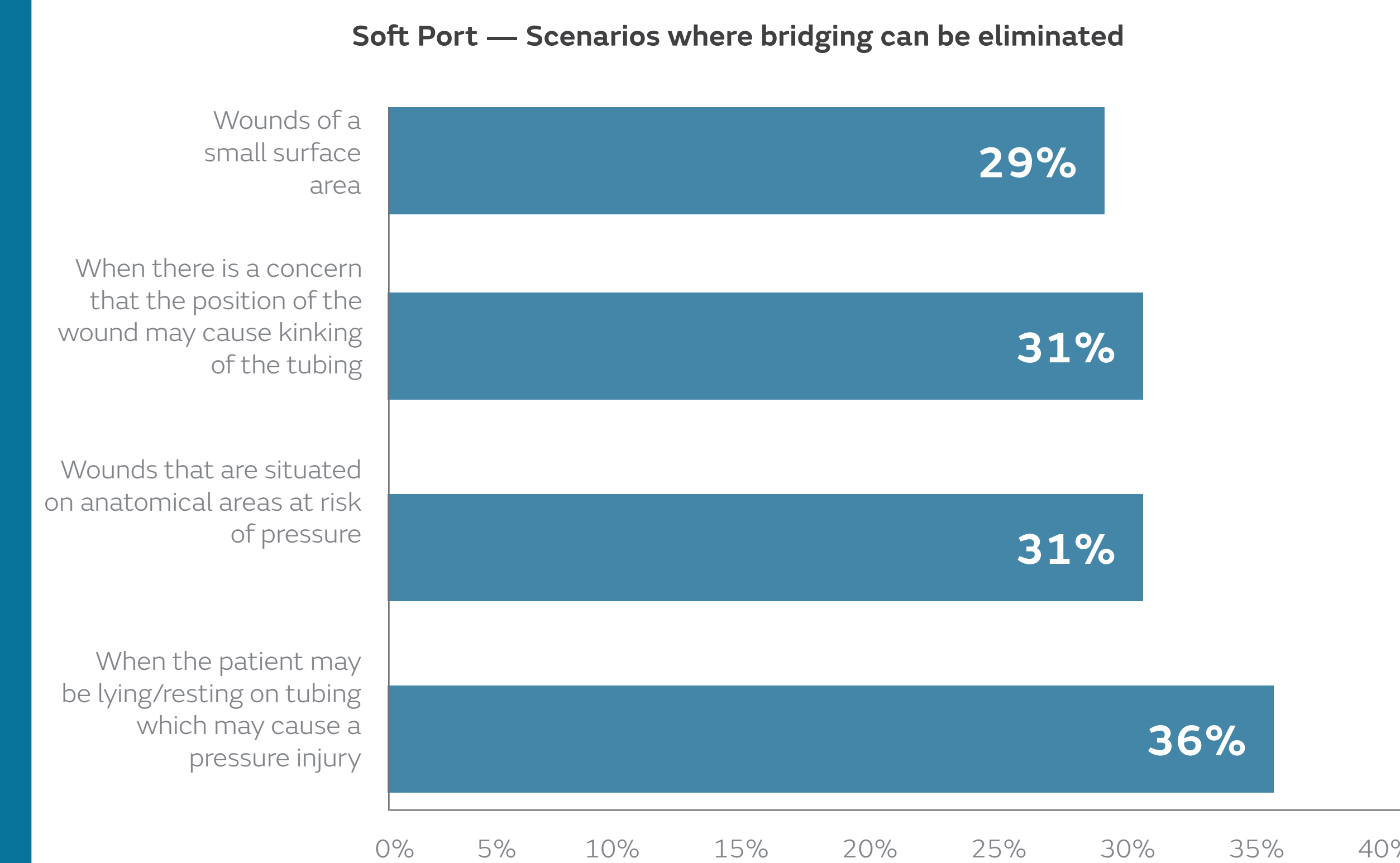
Responses to Bridging Technique: Resources Impact



Conclusion

The survey results support laboratory testing, proving the 'soft port' design is beneficial to patients by reducing the risk of developing a MDRPI. The soft port tubing increases patient comfort during wear and reduces the need to adopt the 'bridging technique', therefore, there is minimal risk of peri-wound trauma. Given the choice, clinicians would choose the 'soft port' over the 'hard port' device, and acknowledge this system may save them time and resources, whilst ensuring patients receive optimal wound care.

Clinical scenarios where a soft port may eliminate the need for the 'bridging technique' 'In which scenarios does soft port eliminate the need for bridging?'



Male 5 years old with 2nd and 3rd degree thermal burns utilising 'soft port' and Y connectors with tNPWT system



17-year-old male who was injured by a rolling golfcart resulting in degloving injury

Initial presentation in Emergency Room



tNPWT with 'soft port' applied to free tissue transfer over ankle and dorsal foot using the ipsilateral gracilis muscle



Final result post tNPWT and skin grafting

