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## Healing of a complex wound 2 years post-op using ACTICOAT<sup>®</sup> FLEX 3 Antimicrobial Barrier Dressing and PICO<sup>®</sup> 7 single-use Negative Pressure Wound Therapy System (sNPWT)

### Case Study plus points



By applying ACTICOAT FLEX 3 and PICO 7 sNPWT, the wound infection visually resolved within 13 days, and the wound healed in just 46 days



The patient and clinical team reported being impressed with how quickly the wound responded to treatment



The patient reported being pain free and able to wear her prosthesis

### Introduction

Diabetes is one of the most common chronic diseases in the UK, and its prevalence is increasing.<sup>1</sup> Furthermore, diabetes is associated with the most common cause of non-traumatic limb amputation. Approximately 40% to 60% of non-traumatic lower-limb amputations worldwide are a result of diabetic complications, where approximately 80% of these amputations follow diabetic foot ulcers.<sup>2</sup>

Not all wounds follow a favorable healing trajectory after surgery. Non-healing wounds develop due to an interruption in the body's natural healing process and are frequently accompanied by co-morbidities such as diabetes which can inhibit healing, adding to the complexity of treatment and the risk of infection.<sup>3</sup>

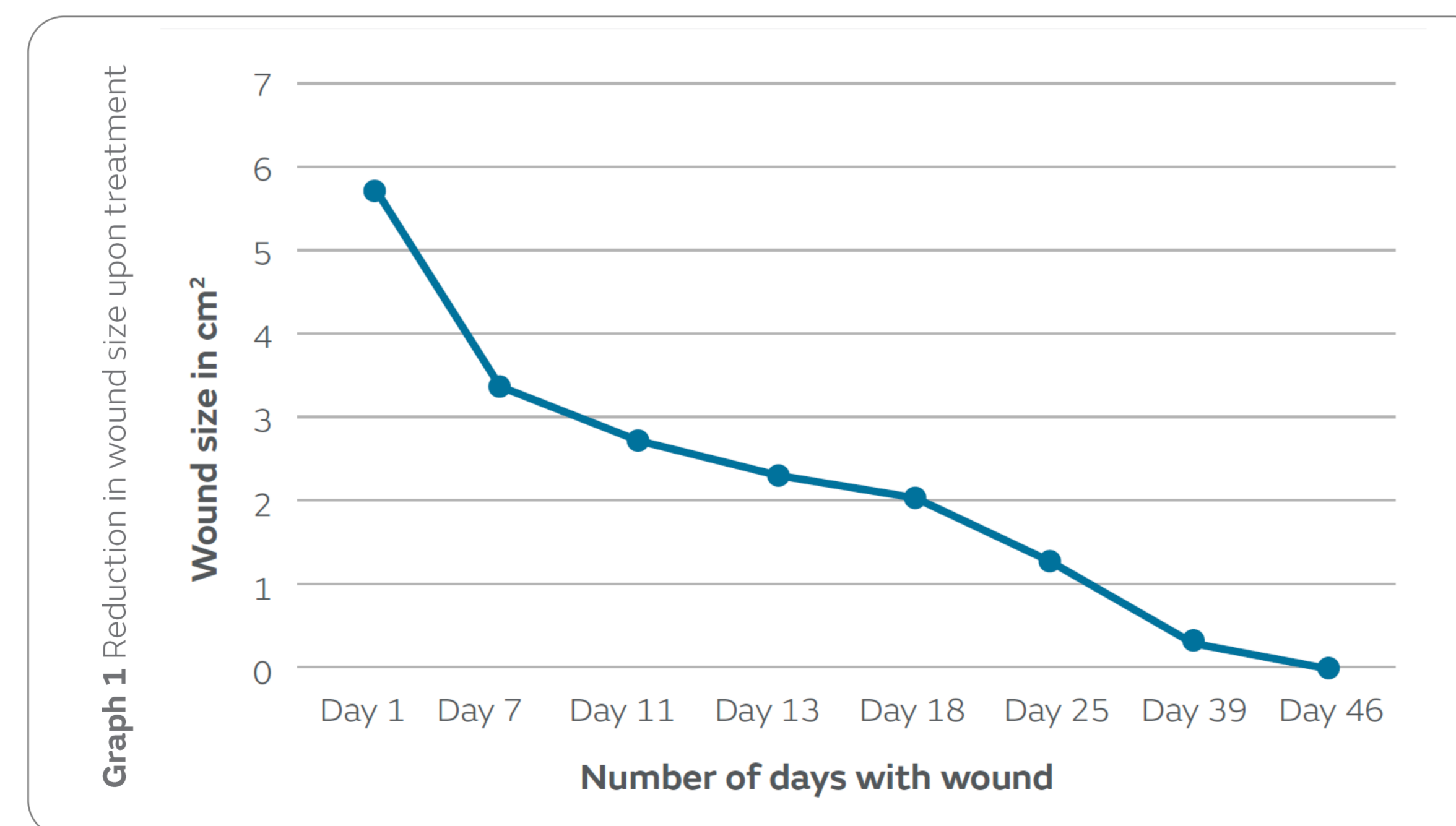
**Note:** ACTICOAT FLEX 3 dressing can be used for up to 3 days when used in combination with NPWT.

The author would like to thank Gemma McGrath, Healthcare Outcomes Manager, for supporting the medical writing of this case study.

Early detection and prompt treatment with an effective silver antimicrobial dressing to manage infection<sup>4</sup> is important to prevent the risk of wound complications, which ultimately can have a positive impact on the cost of treatment as a whole.<sup>3</sup> Silver dressings, such as nanocrystalline silver dressings (NCS), are one of the most popular treatments to manage local infection, as studies suggest clinical signs of infection were resolved in 60% of patients with chronic wounds by week 25 and have demonstrated to be effective.<sup>5,7</sup>

### Case presentation

A 55-year-old female presented to the clinic with a non-healing, deteriorating wound that she had been self-managing for 2 years. The patient had a past medical history (PMH) of diabetes (non-insulin-dependent) and hypertension and underwent surgery for a below-knee amputation due to deteriorating diabetic foot ulcers (DFUs). As a result of the surgery, the patient was left with a wound to her left stump, which intermittently kept breaking down and never fully healed for two years. During this time, the patient endured recurrent wound infections, and it was noted that there was a retained suture in the wound, which was removed. The patient was unable to wear her prosthesis because of pain which affected her mobility and stopped the patient from visiting family abroad which was negatively impacting on the patient's quality of life (QOL). Additionally the patient reported being low in mood and frustrated with the wound, mainly because the exudate would stain her clothing and bedding.



### Treatment

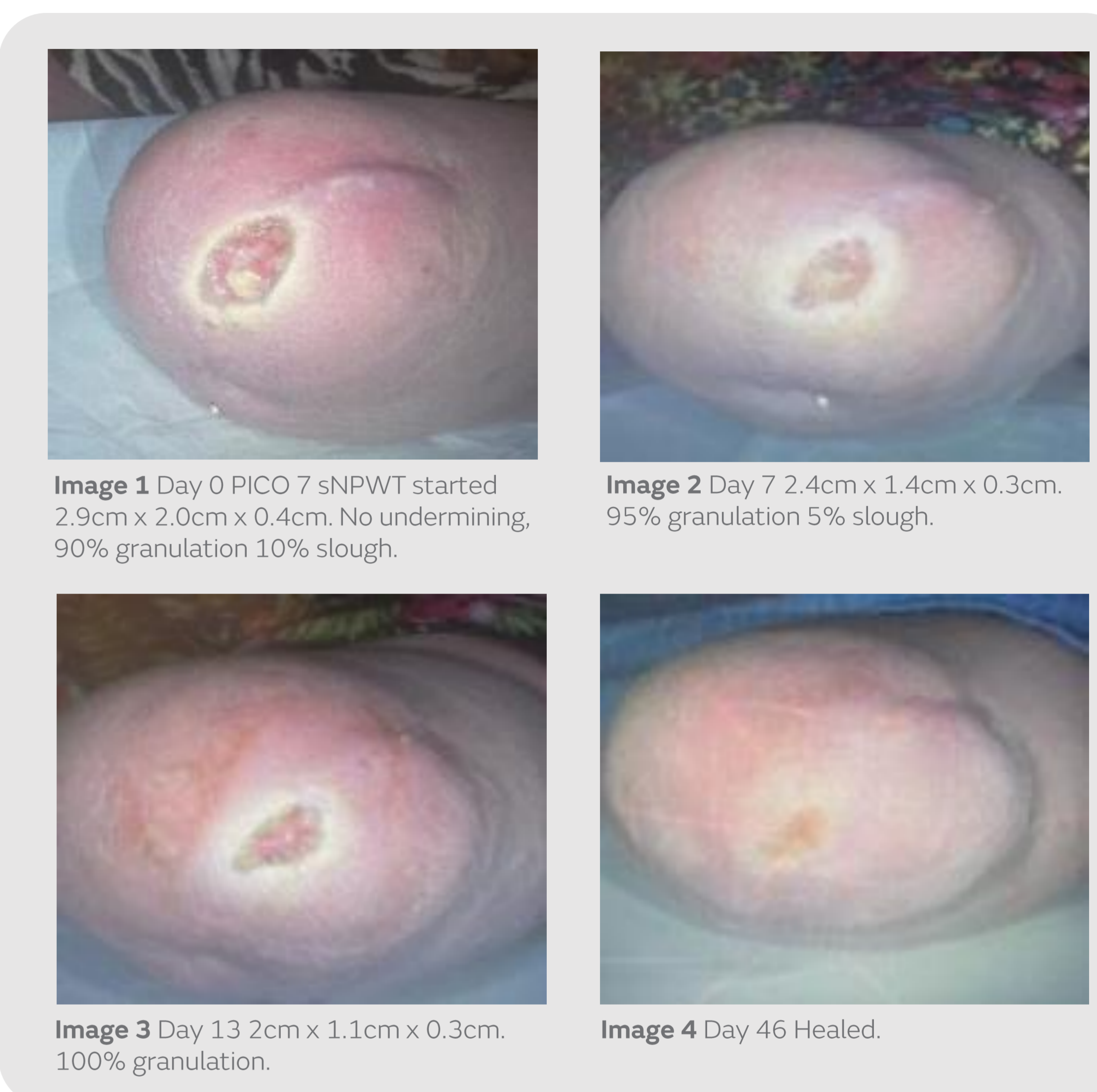
On first assessment the wound measured 2.9cm x 2.0cm (5.8cm<sup>2</sup>) and was 0.4cm deep (Image 1). The wound bed was 90% granulating with 10% slough and moderate exudate level. The wound presented with classic signs of infection (erythema, warmth, increased malodor and a pain score of 8) and a swab taken prior to this assessment indicated heavy growth of staphylococcus aureus and beta haemolytic streptococcus group G and moderate growth of mixed anaerobes and diphtheroid. As a result, antibiotics were prescribed for systemic infection, and ACTICOAT FLEX 3 dressing was applied as an antimicrobial wound liner with PICO 7 sNPWT and the dressing was changed every 72 hours.

On day 7, the wound had shown some positive signs of improvement; the wound had reduced in size, 2.4cm x 1.4cm (3.36cm<sup>2</sup>) depth of 0.3cm (Image 2) and had debrided by 5%. Signs and symptoms of infection were also assessed as improving and the patient reported her pain score as 5. At this point in care, the patient wanted to travel abroad. Therefore, a shared care approach was taken to support and educate the patient to remove the PICO 7 sNPWT dressing and replace it with an ALLEVYN Gentle Border Foam Dressing until the nurse could reapply her PICO 7 sNPWT dressing.

On day 11, although the wound had reduced in size to 2.3 cm x 1.2 cm (2.76cm<sup>2</sup>), the depth had slightly deteriorated to 0.5cm and, therefore, despite other signs and symptoms of infection having improved, the decision was made to continue the treatment of ACTICOAT FLEX 3 dressing and PICO 7 sNPWT for another dressing change. At this point in treatment, the patient reported that her pain score was 1, which allowed her to intermittently start wearing her prosthesis which supported her mobility needs and independence.

On day 13, the wound had improved further to 2cm x 1.1cm (2.2cm<sup>2</sup>) (Image 3). Exudate levels were decreasing and the wound was 100% granulating. The pain levels remained at 1, and ACTICOAT FLEX 3 dressing was discontinued as the infection visually resolved within 2 weeks of treatment. PICO 7 sNPWT continued to promote wound healing.

On days 18, 25 and 39, the wound continued to show signs of healing (Graph 1). On day 39, sNPWT was discontinued, and conventional dressings were started; pain levels remained at 1, and dressing changes continued to be at just 1 x per week. On day 46, the wound was assessed as completely healed (Graph 1, Image 4), and the patient could return to all activities of daily living and wear her prosthesis full time.



**Image 1** Day 0 PICO 7 sNPWT started 2.9cm x 2.0cm x 0.4cm. No undermining, 90% granulation 10% slough.

**Image 2** Day 7 2.4cm x 1.4cm x 0.3cm. 95% granulation 5% slough.

**Image 3** Day 13 2cm x 1.1cm x 0.3cm. 100% granulation.

**Image 4** Day 46 Healed.

### Conclusion

Despite a PMH of diabetes and below knee amputation, which can potentially inhibit wound healing, by applying ACTICOAT FLEX 3 dressing and PICO 7 sNPWT, the wound infection visually resolved within 13 days, and the wound healed in 46 days after living with the wound for 2 years which was having a negative impact on QOL.

The patient reported being pain-free and able to wear her prosthesis again, which impacted her ability to carry out her daily activities and enhanced how she felt. The patient and clinical team reported being impressed with how quickly the wound responded to treatment and how easy the device was to use, allowing the patient to engage with shared care.

For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product's applicable Instructions for Use (IFU) prior to use.

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#### References

- NICE guidelines. Diabetic foot problems: prevention and management. 2015. Available at: [www.nice.org.uk/guidance/ng19](http://www.nice.org.uk/guidance/ng19). Accessed September 22, 2022.
- Sharpe, A., Styche, T., & Hughes, J. (2022). Products & technology Multi-centre, international real- world evidence using PICO. 13(2), 1–8.
- Hurd, T., Woodmansey, E. J., & Watkins, H. M. A. (2021). A retrospective review of the use of a nanocrystalline silver dressing in the management of open chronic wounds in the community. *International Wound Journal*, November 2020, 1–10. <https://doi.org/10.1111/iwj.13576>.
- Swanson, T., & Angel, D. (2022). *International Wound Infection Institute Wound Infection in Clinical Practice Update Principles of Best Practice*. Wounds International, 24(8), 1–59.
- Gago M, Garcia F, Gaztelu V, et al. A comparison of three silver-containing dressings in the treatment of infected, chronic wounds. *Wounds*. 2008; 20(10):273 - 278.
- Smith+Nephew 2008. Antimicrobial activity of ACTICOAT FLEX 3 against a broad spectrum of wound pathogens. Internal Report. DOF 0810016.
- Smith+Nephew 2011. The compatibility of ACTICOAT FLEX 3 and PICO dressings under NPWT. Internal Report. 1102008.