+ Evidence in focus

PICO◊ Single Use Negative Pressure Wound Therapy System (sNPWT) is cost effective compared with standard care to help prevent surgical site complications in patients with surgically closed incisions

Background and aims

A systematic literature review and meta-analysis of 29 studies involving 5,614 patients undergoing surgery compared prophylactic use of PICO sNPWT with standard care and showed:[1]

63%

significant reduction in the odds of developing **SSIs**

(19 studies, 4,530 patients; p<0.001)

1.75 days

shorter mean **length of hospital stay**

(10 studies, 948 patients; p<0.001)

Significant reductions
in the odds of **dehiscence**, **seroma** and **necrosis**

(9 studies, 1,790 patients; 6 studies, 771 patients; 2 studies, 474 patients, respectively; p≤0.01)

SSIs = surgical site infections

Based on the meta-analysis results, the **cost effectiveness of PICO sNPWT versus standard care** was analysed[2]

Methods and key findings

- Likelihood of experiencing a complication (SSIs or dehiscence) was analysed for a cohort of 1,000 adult patients undergoing any type of surgery (base case)[2]
- A 12-week follow-up period (time horizon) was used, which is when complications are most likely to occur[2]
- An economic evaluation was performed from the UK healthcare payer perspective (considers costs and outcomes in acute and community care)[2]
- Compared with standard care, prophylactic use of PICO sNPWT was considered to be:[2]
  - **Cost effective:** where clinical outcomes (SSIs and dehiscence) were improved and the cost was below the UK benchmark
  - **Cost saving:** where clinical outcomes (SSIs and dehiscence) were improved and the cost was less than standard care

Compared with standard care, prophylactic use of PICO sNPWT in patients with surgically closed incisions, resulted in:[2]

Combined surgical specialties

93%
chance that **use of PICO sNPWT was cost saving** across evaluated surgery types

£105
saving per patient
(£461 vs £566 per patient)

Individual surgical specialties

Cost saving for cardiothoracic, colorectal and vascular surgery subtypes

Cost effective for breast, C-section and orthopaedic surgery subtypes

Greatest savings in high-risk patients
(diabetes, BMI ≥30kg/m², ASA ≥3)

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Assumptions: 85% inpatient costs and 15% community costs; mean cost per patient for surgical site complications/SSIs was £9,654.75. ASA = American Society of Anaesthesiologists score.

Conclusions

Use of PICO sNPWT was **less costly and resulted in improved health outcomes** compared with standard care for combined surgical specialties[2]

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.

References: 1. Saunders C, Nherera LM, Horner A, Trueman P. Single-use negative-pressure wound therapy versus conventional dressings for closed surgical incisions: systematic literature review and meta-analysis. *BJS Open*. 2021;5(1):1–8. **2.** Nherera LM, Saunders C, Verma S, Trueman P, Fatoye F. Single-use negative pressure wound therapy reduces costs in closed surgical incisions: UK and US economic evaluation. *J Wound Care*. 2021;30(Sup5):S23–S31.

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