

Reported reductions in dressing changes, surgical site complications (SSCs) and length of stay with PICO[®] Single Use Negative Pressure Wound Therapy (sNPWT) demonstrated estimated cost savings compared with standard care

Economic analysis estimated that PICO's reduced rate of SSCs helped improve health-related quality of life and decrease the treatment costs by more than £1000 per patient



Study design

- A decision analytic model estimated the expected cost and benefits of the PICO dressing compared with standard care from the UK healthcare payer perspective
- The model used data (220 patients) from a randomised controlled trial (RCT),¹ which demonstrated that PICO dressing delivered reductions in dressing changes ($p=0.002$), length of stay ($p=0.07$), and SSCs ($p=0.06$) over 6 weeks following routine primary total hip and knee replacement



Key results

- Results showed advantage for prophylactic use of PICO over standard care in patients undergoing routine primary total hip and knee replacement



	Estimated complications avoided	Estimated quality adjusted life year
PICO	0.97	0.117
Standard care	0.92	0.116
Difference	0.059	0.0012

- Greater savings estimated in subgroups of high-risk patients
 - BMI $\geq 35\text{kg/m}^2$: £7,955 (\$11,296)
 - American Society of Anaesthesiologists (ASA) score ≥ 3 : £7,248 (\$10,293)



Conclusions

PICO is estimated to be a cost-effective intervention for reducing SSCs following routine primary total hip and knee replacements. Savings greater than £1,000 (\$1,420) per patient were associated with using PICO immediately post-operatively in this indication, compared with standard care. Subgroup analysis identified even greater savings in patients at elevated risk of SSCs.



Considerations

- To authors' knowledge, this was the first comparative economic evaluation of sNPWT for patients undergoing total hip and knee replacements
- Standard care was determined by individual clinicians, which reflects real-life clinical scenarios. This is a strength of both the foundational RCT and present economic analysis
- Data were derived from a single-centre RCT. Further analysis is needed to determine cost-effectiveness in different healthcare systems

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References:

1. Karlakki S, Hamad AK, Whittall C, Graham NM, Banerjee RD, Kuiper JH. Incisional negative pressure wound therapy dressings (iNPWTd) in routine primary hip and knee replacements—a randomised controlled trial. *Bone Joint Res.* 2016;5:328–37.