

+ Control your risks, control your outcomes

Is your revision arthroplasty patient at risk
of developing a surgical site complication?



Smith+Nephew

PICO[◇] 7

Single Use Negative Pressure
Wound Therapy System

Helping you get **CLOSER TO ZERO[◇]**
surgical site complications¹



Is your patient high risk?

Operative time

Revision hip arthroplasty (rTHA) can take, on average, 78 mins longer compared with primary procedures²

Revision

Surgical site infection (SSI) risk can double with rTHA compared with primary procedures³

Deep or organ space SSI can nearly quadruple with rTHA compared with primary procedures³



SSI risk can double

with rTHA compared
with primary procedures³



Is your patient high risk?

Certain patient factors correlate with SSI development following primary and revision arthroplasty⁴. Pre-operative identification can determine the probability of an SSI developing post-operatively⁴.

Procedure				
TJA procedure	Primary hip	Primary knee	Revision hip	Revision knee
Score	0	1	3	3

Chronic obstructive pulmonary disease		
Presence	Yes	No
Score	1	0

Diabetes		
Presence	Yes	No
Score	1	0

Long term insulin use		
Presence	Yes	No
Score	1.5	0

Rheumatoid arthritis or inflammatory arthropathy		
Presence	Yes	No
Score	1.5	0

Tobacco use		
Presence	Yes	No
Score	1.5	0

Lower-extremity osteomyelitis or pyogenic arthritis		
Presence	Yes	No
Score	2	0

Pelvis, thigh, leg traumatic fracture		
Presence	Yes	No
Score	2	0

Lower-extremity pathologic fracture		
Presence	Yes	No
Score	2.5	0

Morbid obesity (BMI ≥ 40)		
Presence	Yes	No
Score	2.5	0

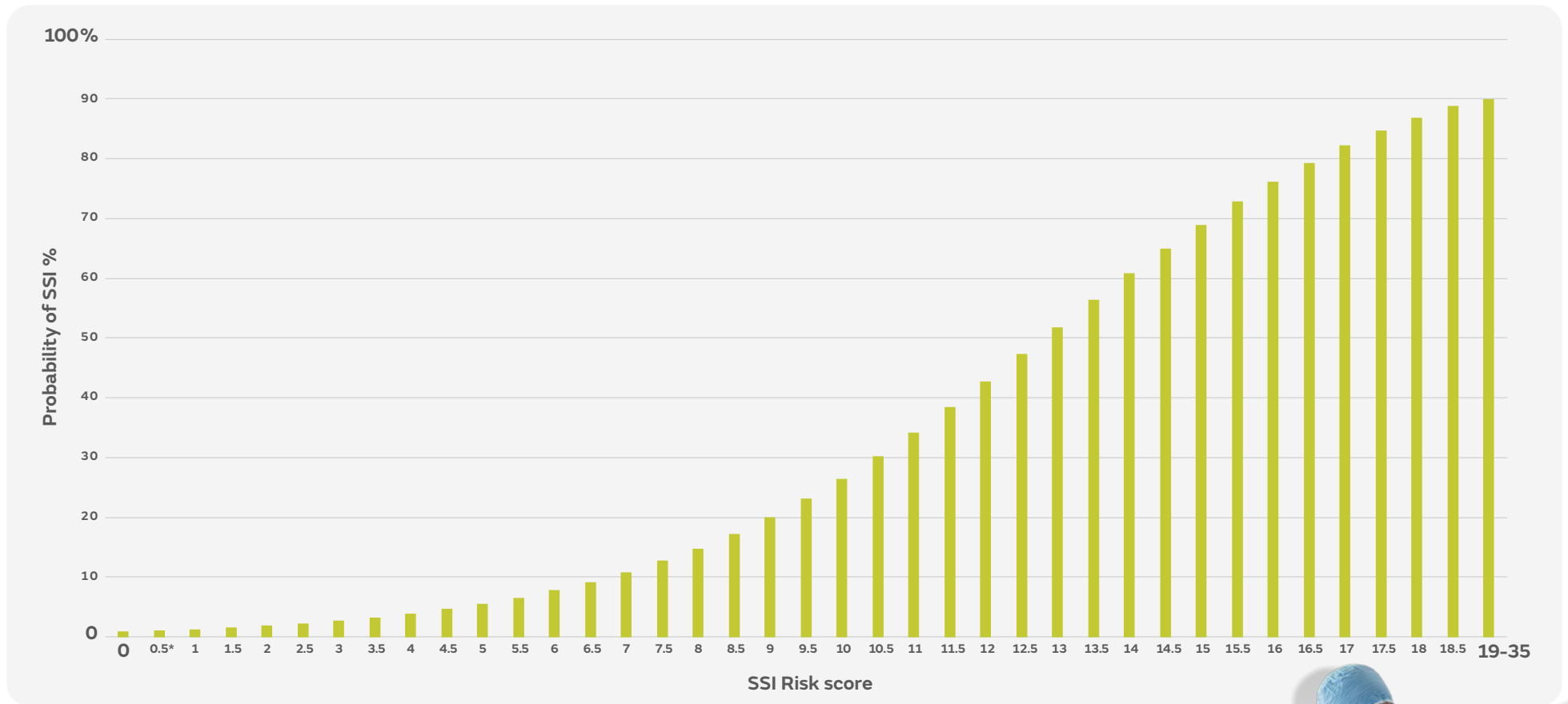
Primary bone cancer		
Presence	Yes	No
Score	4	0

Reaction to prosthesis or implant within 3 years		
Presence	Yes	No
Score	4	0

Staphylococcal septicemia		
Presence	Yes	No
Score	4.5	0

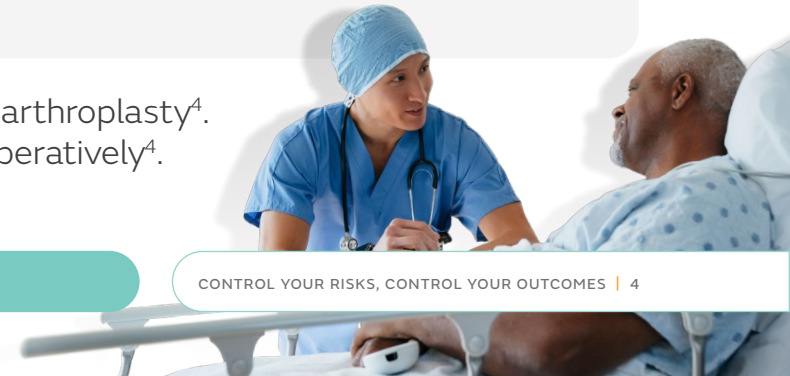
TOTAL PATIENT SCORE:

SSI risk score and corresponding probability of SSI



Certain patient factors correlate with SSI development following primary and revision arthroplasty⁴. Pre-operative identification can determine the probability of an SSI developing post-operatively⁴.

*Interpolated value. A score of 0.5 is not a possible result of any combination of positive risk factors.



+ Control your risks, control your outcomes

The prophylactic use of incisional NPWT significantly reduced **LoS** by an average of **1.87 days*** following revision hip and knee arthroplasties²



The risk of developing a post-operative SSC depends on the type of surgery and patient risk factors^{6,7}

The presence of just **1 major risk factor** or **2** or more moderate risk factors, places patients at high risk of an SSC and means you should consider **PICO® sNPWT**⁶



Category

Patient-related risk factor

Procedural-related risk factor



Major risk factor
presence of 1 = high risk of surgical site complication

! BMI $\geq 40\text{kg/m}^2$ or $\leq 18\text{kg/m}^2$

! Extended surgery[†]

! Uncontrolled insulin dependent diabetes mellitus

! Emergency surgery

! Renal dialysis

! Hypothermia



Moderate risk factor
presence of 2 \geq high risk of surgical site complication

! ASA physical status $>II$

! Anaemia / blood transfusion

! Age < 1 year or > 75 years

! High wound tension after closure

! BMI $30-39.9\text{kg/m}^2$

! Dual antiplatelet treatment

! Immunosuppression

! Suboptimal timing or omission of prophylactic antibiotics

! Smoking (current)

! Tissue trauma / large area of dissection / large area of undermining

Table adapted from World Union of Wound Healing societies Consensus, 2016. The risk factors represented in this table are examples only and not an exhaustive list.¹⁴

*Compared with standard care; 6.71 days v 8.58 days; $p = 0.019$. [†]Defined as $>T$ (hours) which is dependent on the type of surgical procedure, and is the 75th centile of duration of surgery for a particular procedure, e.g. coronary artery bypass graft has a T of 5 hours and caesarean section has a T of 1 hour.

+ Revision surgery

Dr Thomas Goetzmann, Clinique Louis Pasteur, Essey les Nancy (France)
PICO^o sNPWT on a surgical incision after rTKA surgery

Patient

**A 73 year-old female,
the patient was unable to
walk unaided.**

Class 1 obesity

**History of rTKA surgery
due to infection;
the patient had already
received two rTKAs.**

**The patient underwent
a left rTKA and put
on antibiotics**

PICO sNPWT treatment methodology

- It was decided to apply the PICO sNPWT system in the operating theatre. The chosen PICO dressing size was 10 x 40cm and the incision line measured 21cm L, with sutures present
- The surgeon decided to leave the PICO system in place for 6 days

Course of PICO sNPWT

- The patient was in hospital for 6 days before transfer to post-acute care and rehabilitation.
- The patient's leg was not immobilised and she was able to wear her compression stocking, the PICO system is compatible for use with compression therapy
- At D6, 20% saturation of the dressing was observed
- There was no sign of inflammation under the dressing. After a team discussion, a new PICO dressing (15 x 30 cm) was applied in order to avoid any risk of dehiscence in areas where the peri-wound skin was more fragile, which was distinguishable by a whitish discolouration. The surgeon decided to leave the PICO system in place for another 6 days



The patient was able to receive physiotherapy throughout treatment with **PICO** sNPWT in order to regain the ability to walk unaided

Treatment outcome

- The patient was seen again at D12. The PICO dressing showed 45% saturation, and the sutures at the ends of the incision line were removed. There was no sign of inflammation or dehiscence. The surgeon continued PICO therapy for another 7 days, with the same dressing size
- PICO sNPWT was discontinued at D19. The dressing showed two stains, and all remaining sutures were removed. Antibiotic therapy was discontinued on the same day
- The total duration of treatment was 19 days. The PICO Dressing was then replaced by a hydrocellular dressing
- By D47, the incision was fully healed without any complications
- The patient was pleased with the outcome and with the device, which helped prevent further complications and allowed her to resume physiotherapy sessions in order to regain mobility
- The surgeon was also pleased with the device

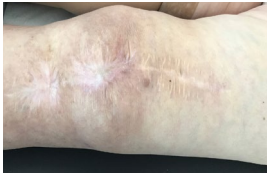
+ Revision surgery^(continued)

Dr Thomas Goetzmann, Clinique Louis Pasteur, Essey les Nancy (France)
PICO^o sNPWT on a surgical incision after rTKA

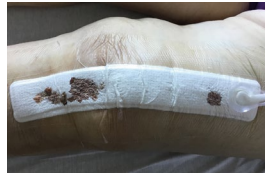


Evolution of closed surgical incision with PICO^o sNPWT

Before surgery



Day 6



Day 12



Day 19



Day 47



Smith & Nephew Pty Ltd
Australia
T +61 2 9857 3999
F +61 2 9857 3900

Smith & Nephew Ltd
New Zealand
T +64 9 820 2840
F +64 9 820 2841

www.smith-nephew.com/australia
www.smith-nephew.com/new-zealand
♦Trademark of Smith+Nephew. All trademarks acknowledged.
27571-anz V1 06/22

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, Buzza K, Nherera L. 2019. A single use negative pressure system reduces surgical site complications compared with conventional dressings in closed surgical incisions: a systematic literature review with meta-analysis. Poster presented at the European Wound Management Association. **2.** Bozic KJ, Katz P, Cisternas M, Ono L, Ries MD, Showstack J. Hospital resource utilization for primary and revision total hip arthroplasty. *JBJS*. 2005 Mar 1;87(3):570-6. **3.** Leekha S, Sampathkumar P, Berry DJ, Thompson RL. Should national standards for reporting surgical site infections distinguish between primary and revision orthopedic surgeries? *Infection Control & Hospital Epidemiology*. 2010 May;31(5):503-8. **4.** Everhart JS, Andridge RR, Scharschmidt TJ, Mayerson JL, Glassman AH, Lemeshow S. Development and validation of a preoperative surgical site infection risk score for primary or revision knee and hip arthroplasty. *JBJS*. 2016 Sep 21;98(18):1522-32. **5.** Mhaske AS, Budithi S, Karlakki S. Incisional negative pressure wound therapy can reduce wound complications and hospital stay in revision hip and knee arthroplasty. Paper presented at: EFORT; 2019; Lisbon. **6.** Sugrue M, Ciprandi G, Djohan R, et al. World Union of Wound Healing Societies (WUWHS) Consensus Document. Closed surgical incision management: Understanding the role of NPWT. *Wounds Int* [Internet]. 2016. www.woundsinternational.com/wuwhs/view/consensus-documentclosed-surgical-incision-management-understanding-the-roleof-npwt (Last accessed July 29, 2017). **7.** The World Health Organisation (2016) Global Guidelines for the Prevention of Surgical Site Infection. [online] Available from <https://apps.who.int/iris/bitstream/handle/10665/250680/9789241549882-eng.pdf?sequence=8> (Last Accessed June 2020).

