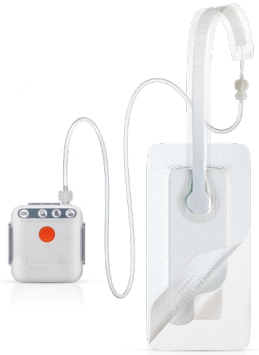
Control your risks, control your outcomes

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 complications[1]

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PICO◊ ORTHOPAEDIC RISK QUESTIONNAIRE REVISION

Is your patient high risk?

Operative time	Revision	
Revision hip arthroplasty (rTHA) can take, on average, 78 mins longer compared with primary procedures[2]	Surgical site infection (SSI) risk can double with rTHA compared with primary procedures[3]	Deep or organ space SSI can nearly quadruple with rTHA compared with primary procedures[3]

SSI risk can double

with rTHA compared with primary procedures[3]

Is your patient high risk?

Certain patient factors correlate with SSI development following primary and revision arthroplasty[4].
Pre-operative identification can determine the probability of an SSI developing post-operatively[4].

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

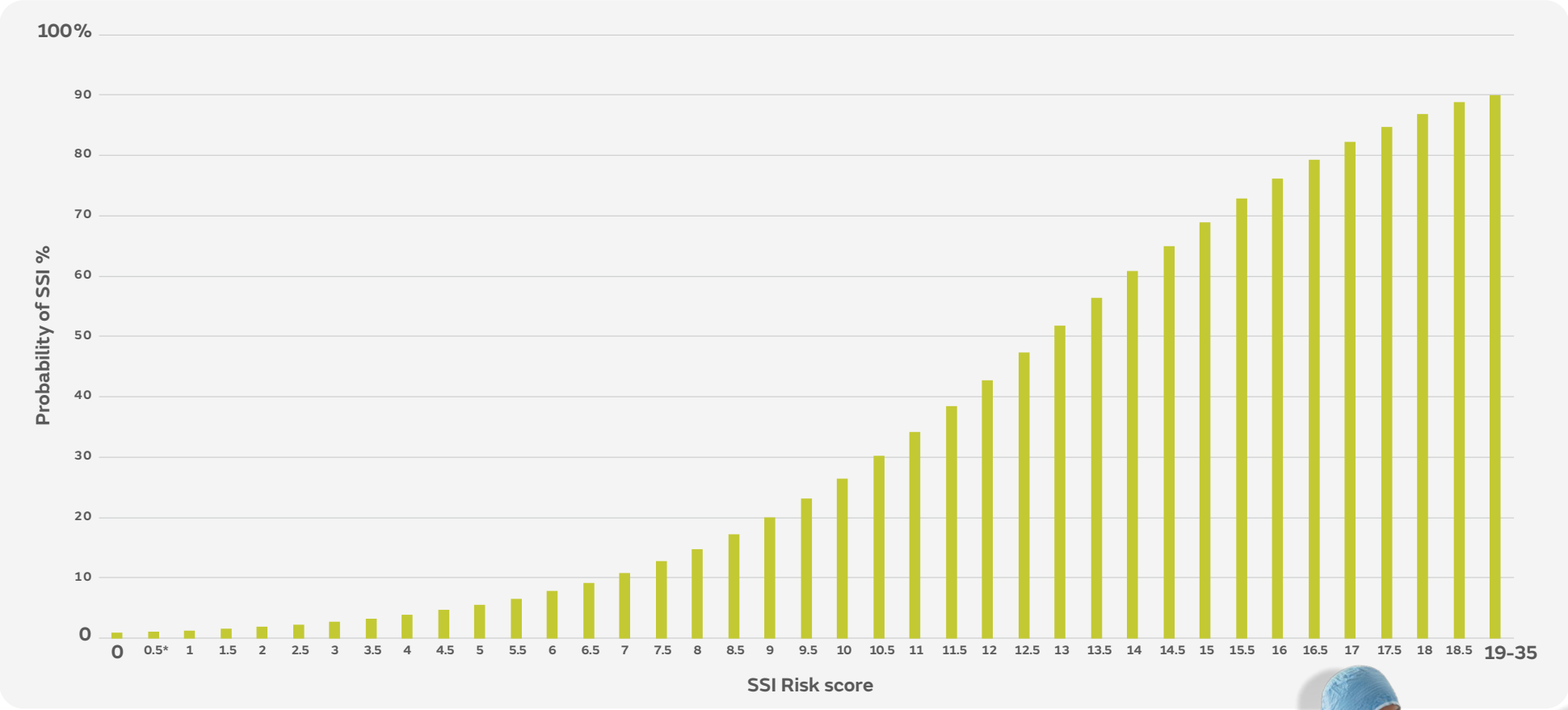
Primary bone cancer		
Presence	Yes	No
Score	4	0

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 arthroplasty[4]. Pre-operative identification can determine the probability of an SSI developing post-operatively[4].

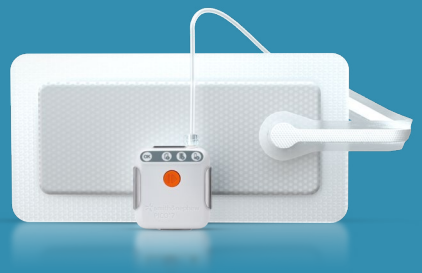
*Interpolated value. A score of 0.5 is not a possible result of any combination of positive risk factors.

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 arthroplasties[2]

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 ≥ 40kg/m² or ≤ 18kg/m²	! Extended surgery†
	! Uncontrolled insulin dependent diabetes mellitus	! Emergency surgery
	! Renal dialysis	! Hypothermia
Moderate risk factor *presence of 2 ≥ 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 30–39.9kg/m²	! 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◊ sNPWT on a surgical incision after rTKA surgery

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

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

Treatment outcome

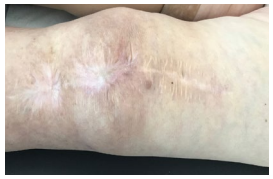
- The patient was seen again at D12. The PICO dressing showed 45% saturation, and the sutures at the ends of the incision line were removed. There was no sign of inflammation or dehiscence. The surgeon continued PICO therapy for another 7 days, with the same dressing size
- PICO sNPWT was discontinued 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)

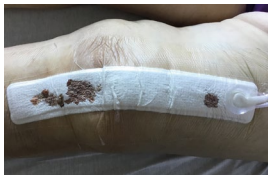
Dr Thomas Goetzmann, Clinique Louis Pasteur, Essey les Nancy (France)
PICO◊ sNPWT on a surgical incision after rTKA

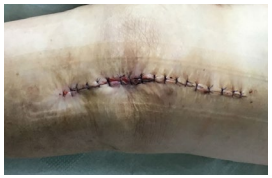
Evolution of closed surgical incision with PICO◊ sNPWT

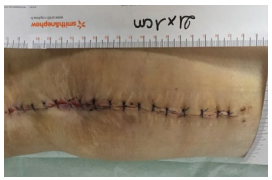
Before surgery

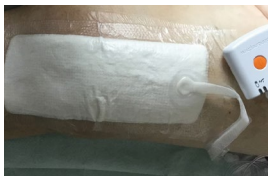


Day 6

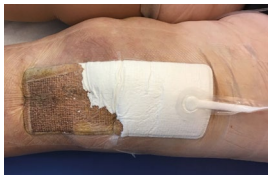


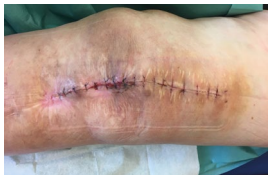


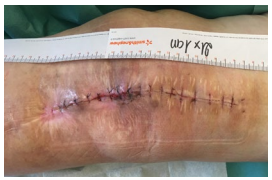




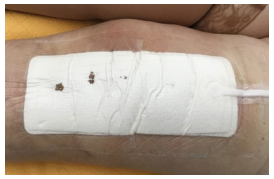
Day 12

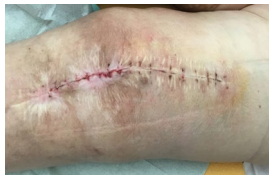


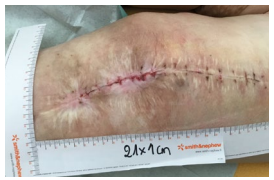




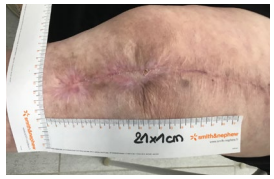
Day 19

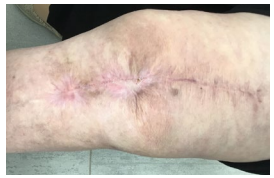






Day 47





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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. eek. **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).